

# Why do you lose access to your electronic resources? How an institutional identifier can help

Electronic resources have hugely complicated the supply chain. Losing access to paid-for resources is common, and may be caused by miscommunication, lengthy reconciliation of payments to accounts, journal transfers and changing agents. There are many uses in the supply chain for institutional identifiers, and some of the new and developing relevant standards in this area are summarized. Being able to uniquely identify the institutions at each stage in the supply chain can cut down on access losses, and if libraries, agents, publishers and hosting services can agree on and implement a standard institutional identifier, loss of access may become a thing of the past.



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## Outlining the problems of managing access to e-journals

At the beginning of every year the listservs are buzzing with questions such as:

*"Has anyone else lost access to (fill in the blank) titles?"*

*"Does anyone know the new URL for (blank) title?"*

*"Which bundle does this (blank) title now sit in?"*

There are many reasons for this lost access, some simple, some complex, but the usual cause is some form of miscommunication between two participating parties in the journal supply chain.

There is a long and complex 'chain' (which can be thought of simply as a series of transactions) that occurs between the order a library places with their subscription agent (or even directly with the publisher) and the activation of the subscription at the publisher's online hosting service. A simple summary of a typical transaction chain would look like this:

1. Library inputs purchase order title-related information into local ILS
2. ILS order is sent to subscription agent
3. Agent enters data into its management system
4. Agent sends invoice to library

5. Agent sends confirming order to publisher (or publisher's distributor)
6. Publisher (or distributor) checks order and price
7. Queries sent back to agent or forwarded to publisher
8. Agent corrects price or answers query
9. Publisher (or distributor) inputs data to fulfilment system and creates or updates the account
10. Publisher waits for payment from agent
11. Publisher receives payment
12. Publisher attributes payment to appropriate account
13. Publisher sends file of authorized accounts to hosting service
14. Hosting service sets up access file for authorized account and title
15. Library activates account or title for appropriate publisher.

## Problems with institutional identification

For each of these transactions there must be a precise identification of the institutional entity for which information is being passed between the

parties. Mismatches can occur at every point in these transactions. Let’s take Loyola University, for example – seems easy for a perfect match, but does the input clerk know whether Loyola is for New Orleans, Chicago, Baltimore, or even Los Angeles? Each of these cities hosts a separate ‘Loyola’. Consider that at least 50% of all these transactions are still input by a clerical assistant whose geographic and institutional knowledge is unlikely to be comprehensive, particularly where foreign languages are concerned.

The Loyola example is simple, but given the complexity of some organizations and their naming conventions, there can easily be awkwardness in matching the name on a purchase order to its proper originating organization. A former name may be in the agent’s 2007 file, but the name has changed for the 2008 orders. Organizations are not stable – in the UK alone there were 1,000 name changes in Ringgold’s authority file during 2007, from the University of Central England becoming Birmingham City University to Schering-Plough taking over Organon and all of its subsidiaries.

Finally, a new identity problem has developed where qualified licensing units *within a parent organization* purchase e-content and contract for delivery independently of the parent. This is a phenomenon developing from web-enabled access to e-journals, and applies particularly in medicine, law and business.

**Recent supply chain history**

In the not-so-distant past, and continuing today in printed journal deliveries, addresses were reasonably simple. As shown in Figure 1, they basically consisted of mailing-label data.

There would have been no problem delivering a print copy to any of these addresses. However, no system can automatically indicate that Rockwell

Scientific is now Teledyne Technologies with all of its associated subsidiaries and sites.

Publishers and agents don’t typically or necessarily update records if the account number is the same — especially for renewals. If it is a different account number, the suppliers are likely to create a new account, rather than a renewal, and of course this goes through the ‘new account’ process and needs a form of reactivation.

**Institutional identifiers**

Existing institutional identifiers describe either locations or business entities. Locations are used for physical delivery addresses and for inter-library loans. These identifiers include generic standards like GLNs (Global Locator Numbers), SANs (Standard Address Numbers), and library-specific identifiers like NUCs (National Union Catalog), MARC Organization Codes, OCLC Symbols and ISILs (International Standard Identifier for Libraries). Business entities include D-U-N-S, tax identifiers, company registration numbers and many other formal registrations. The average library may have all of these different identifiers for different purposes. However, none of these defines a ‘licensing unit’ which is a specific entity in the publishing and library industry and usually not a physical location.

**Licensing definitions**

Since the advent of electronic journals, publishers have been grappling with licensing issues. Initially the idea was to license all resources to all components of an institution. Parties were quick to realize, however, that even with deep discounts, this ideal model was not always going to be financially viable, and licences became more complex.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	California State University	Departmer	Ca 92407			San Berna	California						
2	US Nuclear Regulatory Com			Washington	DC			U S A	20555	20555			
3	Usaid		Unit 64902			Apo	Ae	09839-4902					
4	ASSA MEXICO			PO BOX 830470				BIRMINGH	AL	35283			
5	WALLACESTATE			LEARNING RESOURCE	CPO BOX 2000			HANCEVIL	AL	35077	United States of America		
6	IFDC			TVA Reservation	Pilot Plant			Muscle Sh	AL	35662			
7	BURTON BARR CENTRAL LIB/ASN			1221 N CENTRAL AVE				PHOENIX	AZ	85004			
8	faith			1112 east north haven drive				phoenix	AZ	85024			
9	Moore			Raytheon Technical Servic	AIAA Member ID: 98299			Sahuarita	AZ	85629	US		
10	Rockwell			1049 Camino Dos Rios				Thousand	CA	91360	USA		
11	ROCKWELL SCIENTIFIC			TECH INFO CENTER/A19	PO BOX 1085			THOUSAN	CA	91358	USA		
12	Teledyne Scientific			1049 Camino dos Rios				Thousand	CA	91362	USA		

Figure 1. Sample records from a typical publisher’s subscription management file

An example of this is segmentation, in which publishers restricted access to certain resources to certain campuses, or, in the case of specialized collections, in particular expensive medical resources, to medical departments or select faculty. IP addressing became the limiter, and thereby the control mechanism for a licence. But of course IP addresses can be even less stable than institutional names, and now managed federations such as Athens and Shibboleth are increasingly the way forward in academia. Implementing these federations makes it even more important to uniquely identify an institution, and all the same old issues are arising.

Tiered pricing has become an option, but coming with it are all of the difficulties associated with who defines the actual FTEs or researchers, and how to track them over time. What happens in countries like Greece where every graduate of a university is counted as an FTE and typically is given full access privileges to materials, including electronic resources? Publishers are also now looking at alternative ways to bundle content to meet the needs of institutions and make the content match budgets and other requirements. There is a clear need to provide licensing to ever-more-discrete groupings within organizations, and that is a challenge shared by all parties in the supply chain.

### Journal title transfers

In the printed-book world, the right to publish a certain monograph can be, and often is, transferred between publishers before and after a book is published. This also happens in the world of serials, where many scholarly journals are owned by learned societies but are published for them by large commercial publishers. The revenues from these journals are frequently the main sources of income for the societies, so these learned and professional groups are always looking to maximize their income, frequently by moving their journals from one commercial publisher to another who offers a better deal.

The problem with these title transfers is that there is a huge amount of back-office work to make each transfer smooth. The work includes exchanges of:

- back-files (some are exchanged and some are not, depending on the ownership)

- subscription and payment records
- contracts and licences
- consortial deals
- and many more details.

If you look at a subscriber list such as the one in Figure 1, you can see that ensuring all those subscribers appear correctly in a different publisher's fulfillment system with their respective entitlements is not an easy matter. Some publishers consider that they 'own' the subscription lists and will not always transfer them to the new publisher. In general, publishers are honorable and work hard to make sure that all subscribers receive the entitlements they deserve, but frequently subscribers slip through the cracks. Another difficulty in title transfers is one of timing; if the owner or publisher decides to transfer a title near the end of a subscription year, there remains minimal time for an effective transfer to the new publisher, and this happens surprisingly frequently.

Consortial deals have particular problems since many organizations have access to journal bundles through a consortial 'big deal'. When publishers first negotiated these deals, they were often based on the historic print purchases of the larger members of the consortium. Smaller members received electronic access just because they were a consortium member. Frequently there were no subscription records for individual members of the consortium, especially where there was no historic print subscription. When a title transfer occurs between publishers, there may be no surviving consortial deal and the smaller members who had no print subscription have no recorded entitlements.

### URL changes

Publishers do move from one hosting service to another, necessitating changes to the URLs for their content. While subscribers may be informed well in advance, there are no guarantees that all subscribers entitled to content will be noted. The updating of electronic resource management systems and their knowledge bases is time consuming and does not always happen in a timely manner. The result is loss of access for those subscribers where links are lost, and it can take many months into the following year to resolve discrepancies.

### Importance of standards

The standards process has taken a long time to catch up with these issues, but there is now a huge amount of work going on. UKSG, NISO and EDItEUR are all working on standards and codes of practice to try and ensure that all the pieces are in place for quick and accurate transmission of exactly what entitlements every library has to electronic resources.

#### *NISO Working Group on Institutional Identifiers*

NISO is fast-tracking several initiatives including a Working Group on Digital Identifiers for Institutions & Libraries (DIAL). This group will be building on the pioneering work carried out by the Journal Supply Chain Efficiency Improvement Pilot (JSCEIP) (see <http://www.journalsupplychain.org>) which mapped the transactions in the journal supply chain and highlighted the complexity and potential for miscommunication. One of the main questions raised by JSCEIP was whether there were existing institutional identifiers that could be used in the transactions in the journal supply chain.

A number of identifiers were investigated, but none of them applied directly to matters concerning institutional needs for identifying correct levels of granularity for physical delivery and digital identification. In an ideal world there should be a single number that can be used by all the participants in the e-content supply chain. The various supply chain participants, including agents, publishers, and subscribers, share some numbers, but inevitably these number sets are different for every type of transaction. This working group hopes to create a standard number with standard metadata that can be used for all transactions in the supply chain. The Group will be comprised of stakeholders from the supply chain including libraries, subscription agents, publishers, hosting services, ERM vendors, OCLC and Ringgold.

#### *NISO/UKSG Working Group on Knowledge Bases And Related Tools*

The KBART Working Group (<http://www.uksg.org/kbart>) will develop and publish guidelines for best practice to effect smoother interaction between members of the knowledge base supply chain. Knowledge base providers and their customers (primarily academic libraries) will benefit from provision of higher-quality data by

content providers. Publishers will benefit from accurate linking to their content and subsequently the possibility of increased usage. This work is based on a research report commissioned by UKSG regarding the problems of link resolvers and the serials supply chain (<http://www.uksg.org/projects/linkfinal>). One of the main issues with knowledge bases is agreement between the library and the publisher over what the actual entitlements are. The publisher may be providing access for a library or specialist subject consortium, with no detailed knowledge of the individual participants. The subscriptions may be in the name of one department, yet the licence is site-wide. If the publisher can define the holdings within their own system, they can quickly and accurately create files for the population of the knowledge bases.

#### *UKSG Project Transfer*

A cross-sectoral working group (<http://www.uksg.org/transfer/about>) has been put together comprising representatives from the scholarly publishing, intermediary and library communities. The final draft of the proposed Transfer Code of Practice was released in April 2008, with an enthusiastic initial response and many librarians and publishers applauding the effort to improve the headache of journal transfers. One of the major problems in journal transfers is for the publishers to exchange data on the existing subscribers. The subscribers may have electronic entitlements from many different sources, a consortium deal, and bundled deal or from historical print purchase. If the transferring publishers do not have their entitlements formally documented with a standard identifier, they may well get lost in the transaction.

#### *NISO/EDItEUR ONIX for Serials and Licensing Terms*

ONIX for Serials (<http://www.editeur.org/onix/serials.html>) is a family of XML formats for communicating information about serial products and subscription information. There are three sets of application messages being defined and piloted, each supported by an outline specification, XML schema, and full HTML documentation: *SPS (Serials Products and Subscriptions)*; *SOH (Serials Online Holdings)*; and *SRN (Serials Release Notification)* which is a format for communicating information about the publication or electronic availability of one or more serial releases.

ONIX for Licensing Terms is building on the work of the Digital Libraries Federation's

Electronic Resource Management Initiative (ERMI) with the intention of allowing licence terms to be expressed in a standard XML format, linked to digital resources and communicated to users and their appropriate systems ([http://www.editeur.org/onix\\_licensing.html](http://www.editeur.org/onix_licensing.html)). The Serials Online Holdings schema is key to the accurate transfer of entitlements along the supply chain, but again needs to uniquely identify the institutions which hold those entitlements.

#### *The Linking ISSN*

The Linking ISSN (ISSN-L) is a mechanism which enables collocation or linking among different media versions of a continuing resource. Thanks to the ISSN-L, it will be possible to designate with a unique number the various media versions of a title, while keeping separate ISSNs assigned to each of them. Among other improvements, the Linking ISSN will facilitate search, retrieval and delivery across all media versions of a title for services like Open URL, library catalogues, search engines, or knowledge bases. ISSN-L should become available in the latter part of 2008 (<http://www.issn.org/>).

#### *Author registries*

One of the problems in trying to ascertain what research papers originated from a given institution may be viewed as a naming issue. The affiliation metadata in an article may often bear little resemblance to the main name of the institution, being either heavily abbreviated or just the name of a research institute. CrossRef is creating an author registry (working name 'CrossReg') which will issue a digital object identifier (DOI) for individual authors – the metadata will include their affiliation as the standard institutional identifier. This will make it possible to identify all the authors from an institution and its subsidiaries. It will also encourage the deposit in institutional repositories. Thomson are developing ResearcherID which will allow researchers to set up a profile and identify their papers in the Web of Knowledge database. This could eventually extend to all author affiliations having a standard identifier which would allow institutions to measure their research output far more accurately.

#### *Usage statistics and COUNTER*

In order to get accurate usage statistics for both content providers and users, it is important to be

able to identify the institutions and their appropriate usage. The next release of COUNTER specifications is expected to include a field for an institutional identifier which will ensure that all institutional usage is identifiable.

### **Conclusion**

It is clear that in all these standards there is a requirement to uniquely identify the institutions that are involved in the transactions, whether it is defining the holdings of an institution in a publisher and agent internal system or transmitting these to a knowledge base. In the print world, handled with intelligence, a mailing label was enough to get a physical item from the producer to the customer. Now the supply chain has expanded and become more complex, and transactions are handled by computers with no common sense. Every transaction has to be defined explicitly and the electronic content, the owner, the purchaser and the licence terms have to be encoded in a consistent and accurate way. One transposed number or missing name can mean that there is no way the content gets to the user. The ongoing standards activity is designed to make sure that all these definitions are in place. In addition, systems have to be changed to accommodate enhanced or additional metadata; XML schemata have to be set up to allow for consistent exchange of metadata and, most importantly, everyone in the journal supply chain has to implement the standards and abide by the codes of practice. There are other pilots taking place in the industry, working in parallel to establish improved protocols for digital transmission of metadata, including:

- Ringgold's standard identifier that includes hierarchical metadata for institutions and which is now being used by publishers to organize their customer databases and to link subscriptions for the same institutions; previously this exact information was nearly impossible to organize systematically. See <http://www.openidentify.com>.
- Publishers are also using the Ringgold identifiers to classify groups of institutions which have common licences or which are members of consortial deals. These publishers are also encouraging the subscription agents to

use these numbers when communicating with them so that payments can be linked to the correct institutions, thus speeding up the activation process.

- ICEDIS is developing a standard for an XML transaction which will allow subscription agents to automatically activate subscriptions at the hosting services on behalf of their clients.
- OCLC is developing WorldCat Registry which allows libraries to create and enhance metadata about themselves, and to tag it for selective distribution. Metadata includes IP address ranges and contact information.
- Ringgold is working with publishers and ERM vendors to develop an ONIX SOH subset that will allow a publisher to automatically upload an institution's holdings into the institution's ERM system and allow the publisher and institution to have a consistent view of their entitlements.

All these initiatives require a unique identifier for the content (ISSN), the institution (DIAL), and the licensing terms (ONIX-PL) to be effective. If these identifiers are used consistently and comprehensively, losing access to electronic resources should become a rare occurrence.

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