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TALKING TECH

Creating Persistent Law Review Article Links with Digital Object Identifiers

A case study for how to use DOIs to make online journals more accessible and improve their site user reports.

BY VALERI CRAIGLE, BENJAMIN J. KEELE & AARON RETTEEN

Law reviews are an integral part of the law school community, as they serve a vital function in the education and training of law students. Many law reviews are now published online and accessed via URLs, which makes access to their content unreliable because of the broken links that often occur due to changing URLs when the website is redesigned or migrated to a new website platform.

Suppose a student-edited law journal, the *Exemplary Law Review (ELR)*, finds that its online journal archives, hosted on the law school's servers, have been moved in the last website redesign and now the URLs to all its articles lead to a 404 page. This is quite irritating—citations to *ELR*'s articles that use URLs are now broken and one of the editor's projects to measure *ELR*'s impact has become more complicated. Aside from asking website support to use appropriate URL redirects next time, how can the *ELR*'s website be built back better and more resilient to inevitable link decay? Digital object identifiers (DOIs) are a great option,

and this article will demonstrate how *ELR*, partnering with the law library, can get started.

Fortunately, as members of the law school community, the *ELR* enjoys access to the broader campus resources and services available to the law school. Many universities offer DOI minting services to university presses and faculty authors, often through the main campus library, which is likely a member of DOI registration agencies Crossref or DataCite via their affiliations with library consortiums. As such, *ELR* realizes that it would be in its best interest to ask their law librarians about a DOI service sponsorship with the main campus library.

Getting Started

If the *ELR* can add DOIs to their articles, it will be easier for them as a law review publisher to provide persistent and reliable online access to their content. Additionally, the article metadata they deposit during the DOI minting process will be interoperable with many more scholarly communication systems ([DOI Handbook: Metadata Interoperability](#)).

The first step for *ELR* in minting DOIs for their law review articles is to connect with a DOI registration agency. This is an organization that helps maintain the DOI system ([Digital Object Identifier System](#)). In the U.S., there are two agencies that serve academic publishers: Crossref and DataCite. *ELR* learns through its librarians that the campus library is already a Crossref member and sponsors several other academic journals. The librarians ask the campus library to sponsor *ELR* on their Crossref membership so that they can have access to their minting services.

The benefits of sponsorship are twofold: First, *ELR* will likely avoid paying membership fees. Second, the journal will not be required to undergo the technological or administrative scrutiny that is part of the member application process because the campus library will have already met the necessary requirements and assumed the necessary responsibilities as part of their existing membership. If the *ELR* really wanted to be an individual member in Crossref, it would have to pay the fees and provide the technological and administrative infrastructure required for membership.

Membership fee structures differ significantly for Crossref or DataCite. Crossref bases its fees on a journal's yearly revenue or expenses. For a journal that brings in less than one million dollars in yearly revenue, the annual membership fee with Crossref is currently \$293.59 per year plus a \$1.07 DOI fee per journal article. DataCite's fee structure is based on the number of DOIs a journal mints per year. Journals minting less than 2,000 DOIs per year currently pay an organization fee of approximately \$533.80 per year, plus \$.85 cents per DOI.

In terms of metadata development and content administration, [Crossref](#) and [DataCite](#) each have their own individual agreements and best practices guidelines. Generally, the only baseline criterion for obtaining membership with either [Crossref](#) or DataCite is that a publisher creates content that is

likely to be cited in the scholarly ecosystem. The technical and administrative requirements, however, are a little more stringent, and must be fulfilled on both the journal and institutional side. For journals, their **commitments** may include, but are not limited to:

- being the sole creator of their content, and producing it in a professional and scholarly manner
- creating accurate metadata and clearly stating their rights to the content
- making timely metadata deposits, as soon as is reasonably possible after online publication.
- embedding the DOI in the metadata record, and to the best extent possible, linking to other identifiers associated with the content
- ensuring that DOIs resolve to a publicly available landing page
- following the **DOI display guidelines**
- providing a response page for users, sometimes referred to as a “tombstone” page, should content become unavailable

The journal’s sponsoring institution (the law school) must:

- make a commitment to data persistence
- provide the infrastructure for maintaining and updating metadata records
- use best efforts to provide a backup archive for the journal’s content

In the event that *ELR*’s journal content migrates or disappears altogether, both Crossref and DataCite require certain updates to the metadata records that will provide continuity of access, or additional information about the journal’s content and why it was removed. Most importantly, the landing page URL must be updated, as it will certainly change as the result of a migration or system failure. If there is no new landing page URL to update, a response page, sometimes referred

to as a “tombstone” page, must be created that clearly explains why the content is no longer available. **DataCite** prefers that tombstone pages display the citation and the DOI, and a statement that “details the circumstances that led to the current situation.”

Looking Ahead

Once *ELR* has established its sponsorship and is ready to publish articles, assigning DOIs is easy and straightforward. *ELR* worked with the library to figure out a reusable, formulaic pattern to create and assign a DOI to an article (like this *Indiana Law Review* article). All the library needs is the URL for the website landing page for each article and descriptive information such as the title, authors, and abstract. The library then deposits this metadata with the registration agency, which creates a DOI that is ultimately displayed with the article on the journal’s website.

If the original URL for an article changes for whatever reason, the DOI record must be updated to ensure continuous access. Placing the hyperlinked DOI on the first page of the article PDF is something that *ELR* editors will add to their layout workflows. Going forward, all articles published by *ELR* now have DOIs assigned to them automatically, but adding DOIs retrospectively includes two parts: registering and activating the DOIs and adding DOIs to the first page of the article’s PDF file.

Getting DOIs onto the first page of a PDF for each individual article can be labor intensive if done manually, and it can present challenges if not done in coordination with the print publisher used by the law review. To make it easier, an alternative solution using automatically generated cover pages upon downloading the article can be used.

Once their workflow is established, *ELR* editors develop an instructional handbook that is shared with subsequent law review boards, ideally as part of each year’s orientation sessions in which the library is introduced to journal students as a resource and partner in the publishing process.

With DOIs minted for all their articles, and an efficient and effective workflow in place, the *Exemplary Law Review* can be confident in their readers’ ability to access the journal’s content, and in their own ability to measure their journal’s impact by studying the event data associated with each DOI. Through the use of DOI, the *ELR* has become a truly modern and professional law journal for our times. ■

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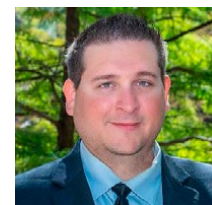
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