

Putting the IR in RIMS: Towards an Automated Integration Between Institutional Repositories and Research Intelligence Systems

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to make work stored there eminently findable. It's understood by archiving systems committed to permanent retention. And, its relatively straightforward to maintain (at least as much as healthy kittens are). They can also hold all sorts of work that had previously withered away on desktop hard drives or forgotten file folders — conference contributions, posters, research datasets (especially those related to electronic theses).

Plan S appears to hold the power for a real tectonic shift. Its demands could shift the thinking of those who hold the power in this relationship — the content creators (and them that pay their bills). Speaking frankly, researchers are more interested in their research than



the neo-liberal economic models that have hijacked their work, and libraries have done a great job in hiding the messy details of the economic transactions behind the hijack. When I tell a researcher that 11/12ths of our collections budget goes towards subscriptions for journals that will just disappear the instant we stop paying for them, their eyes widen. (The other 1/12th, that goes towards the things they think we spend all our time dusting).

By putting the focus back on IRs, Plan S revitalises the repository projects we were all hoping were worth the time and investment. By underscoring the role IRs and related services can and (quietly) do play, we have an opportunity here to show our relevance to the research process, and embed our expertise in supporting publishing. Given active and positive management, IRs could even become a spearhead for library

led publishing in general and, for those of us not already doing it, a mechanism to support our obvious and preferred end goal — free to read, free to publish platforms paid for by the academy itself with the money it used to put into publishers' pockets. 🍷

Endnotes

1. <http://catb.org/jargon/html/F/free-software.html>
2. Ever wondered why Open Office forked when it was picked up by Oracle, and the "free" version was called Libre Office?
3. This has led to a kickback from some saying that mandating OA publishing is actually a limitation on free speech. Those "some" are normally publishers or publishing consultants.
4. I'd argue if libraries are not about equitable information dissemination, then they are essentially just franchises for publishers, online bookshops.

Putting the IR in RIMS: Towards an Automated Integration Between Institutional Repositories and Research Intelligence Systems

by **Jamie Wittenberg** (Indiana University, Bloomington) <jvwitten@indiana.edu>

Introduction

Institutional repositories are at a turning point. There have been several public and contentious assertions that the institutional repository (IR) is dead,¹ but it is more accurate to say that the IR may not continue to exist in the way that we currently conceive of it. In 2017, **Ellen Catz Ramsey**, Director of Scholarly Services, wrote a blog post addressing why **UVA** launched a new repository at a time when the value of institutional repositories was being questioned, even by those who initially supported them. She wrote, "As an option for authors whose disciplines are not congregating around an international discipline-based archive, or whose work doesn't (yet) fit existing scholarly archives, every good research institution will always need the safe haven of a local repository ... Put it in the IR, poof, it's in the library's catalog, Google Scholar, and has a persistent link you can cite." However, Ramsey also writes that IRs have not served their function as clearinghouses for research at an institution. In contrast, **Novak and Day** at the **University of Nevada, Las Vegas** assert that "After reading the literature and a self-examination of our repository situation, we believe a new role exists for the IR, a research administrative one" (2018). This contentious, contested new role is inexorably tied to the rise of research information management products in the higher education sector. Libraries have historically collected and analyzed publication

data in order to improve services and collections. This data has taken on new significance in the age of data-driven university administration. Publication quantity, venue, and citation counts are often used as a proxy for measuring the impact of research. Thus, publication data enables universities to assess research impact, productivity, co-authorship with other institutions, etc. Furthermore, it allows systems that integrate publication data with funding data to mine publications for keywords that can be matched to grants and, ideally, assist research administration offices in suggesting appropriate funding opportunities to faculty authors. Commercial entities have developed sophisticated software that links faculty biographical data with data on past grant and award activity, publications, co-authorship, and more. The collection and monetization of this data on research activity makes up a lucrative research intelligence market.

It is no secret that academic publishers are making headway into the research intelligence market, and it is a logical progression to then develop or acquire faculty activity reporting systems. These systems, often referred to as

research profiling systems, research information management systems (RIMS), or current research information systems (CRIS), are systems that collect and manage data about research activity.² **Elsevier**, for example, announced in 2016 that they were rolling out Faculty and Academic Activity Reporting functionality in Pure, their RIMS which enables administrators to track faculty research activity by integrating faculty profile, funding, and publication data ("Pure Faculty Activity

Reporting: Making data-based strategic decisions," 2016). Shortly following **Elsevier's** reporting tool, **Bryant et al.** noted that "RIM adoption [is] growing in countries without strong national reporting mandates, driven by reasons other than compliance, such as improved decision support and improved

researcher services" (2017). Commercial ownership of preprint servers and institutional repositories (SSRN, Bepress, Esploro) coupled with the rise of RIMS and their consolidation with faculty profile, reporting, and funding operations systems strategically targets research administration and compliance offices as new

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customers for commercial publishers. As much as these developments serve commercial publishing interests (and provide potentially chilling data to school administrators), this adoption and consolidation also presents new opportunities for libraries in automating the repository population process and positioning library repositories as central services in the university's research ecosystem. Libraries are uniquely poised to lead development of community-owned infrastructure that challenges commercial publishers' strategic consolidation of the apparatus of research and scholarly communication (Schonfeld, 2017).

Indiana University Case Study

At **Indiana University**, the campus' response to the implementation of a new open access policy in 2017 created an opportunity for the University Libraries to develop an in-house RIMS built to facilitate the automated deposit of green open access content into an institutional repository. In 2016, roughly one year before the policy was passed, a new annual reporting system was implemented for the university. This reporting system, Digital Measures Activity Insights (DMAI), is used across the university to standardize faculty annual reports. Each year on January 15th, all university faculty report on their teaching, research, and service activity. As part of the 2017 implementation of a campus Open Access Policy, the University Libraries established a workflow with the DMAI team, administered by the Office of the Vice Provost for Faculty and Academic Affairs. As part of this workflow, the Libraries run a report each year after the annual reporting deadline that results in a CSV file containing citations for every article reported by a faculty member as accepted for publication or published during the last calendar year. In 2018, the **IU Libraries** Scholarly Communication Department processed 1,591 unique citations with **IU Bloomington** authors, and in 2019, they processed 2,193. To manage these records, the **IU Libraries** developed a tool: Bloomington Research Information Tracking Engine (BRITE). The BRITE tool is designed to support librarians in processing faculty annual report citations for articles subject to the Open Access Policy in order to ingest metadata and assets for those citations into the institutional repository IUScholarWorks Open. This repository is one of three managed by the Scholarly Communication department and uses Tind, a cloud-hosted spin-off of open-source CERN software. In order to ingest records, the Scholarly Communication Department must first determine which version of the article is acceptable for deposit, procure the article, then ingest the article and metadata into the repository. This workflow leverages several APIs to automate as much of the process as possible.

Metadata Enhancement

The Crossref API is used to add crucial attributes to incomplete records. Because citations are often user-entered, information may be incomplete, incorrect, or out of order.

The Crossref integration enables the Scholarly Communication department to copy accurate metadata to an incomplete record. This is particularly important in ensuring correct author order, ISSN, and DOI for each record.

Open Access Check

When an author has already published an open access version of their article, IUScholarWorks Open points to the open access version of record, rather than archiving the asset. In order to determine whether an open access version is (or will be) available, BRITE integrates with three APIs: Unpaywall, Directory of Open Access Journals, and PubMed. The Unpaywall API harvests metadata from over 50,000 publishers and returns information to BRITE based on whether the article is open access. The Directory of Open Access Journals, a registry of open access journals, returns information to BRITE based on whether the journal is open access. The PubMed API is used to determine whether an article is in PubMedCentral, indicating that it was funded by **NIH** and subject to their public access requirements. It returns information on PubMedCentral ID to BRITE.

Rights Check and Content Recruitment

In 2018 and 2019, about one-third of **IU**-authored articles have had an open access version available on the web. For the articles that do not have an open access version available, BRITE leverages the SHERPA/RoMEO API to determine the most permissive version of an article that can be shared in an institutional repository. The record is then tagged with the most permissive version (unknown, preprint, postprint, or offprint) that can be deposited. Depending upon which version can be shared, an email template is sent to the **IU** author requesting that version for deposit. The email address, author name, journal title, and article titles are pre-populated by BRITE and emails are sent through the BRITE tool.

Deposit

Once authors respond to requests for their final versions, assets are stored in a Box directory using a naming convention that relates each asset to its associated record by way of a unique ID. Metadata-only records, which point to articles previously published openly, and records with these assets are then batch deposited into IUScholarWorks Open, mapping the fields used in DMAI and BRITE to the MARCXML used in the repository. Once the repository is populated, each record is issued another unique ID within the repository. These IDs are then harvested and appended to each record in BRITE. This ensures that every record in BRITE links to a record in the institutional repository. It also enables the Scholarly Communication department to send a final confirmation email to each author, providing them with a link to their repository record.

Conclusion

The modern institutional repository is a local effort but also a collaborative one, integrating with data sources stewarded by institutional and national stakeholders. It

serves as a clearinghouse for published and unpublished research output — a site of preservation and of records management, a local solution for persistent access to institutionally-authored work and a research information management system. It offers a locally-provided solution, often designed to support specific institutional needs, without giving away institutionally-authored work to commercial publishers. By leveraging faculty annual report citation data to populate an institutional repository, the workflow used by Indiana University models new possibilities for institutional repositories as clearinghouses of research output. While this model is not fully automated — it does still require quality control, intervention, escalation of complex cases, and record management — it provides a blueprint for the development of a repository that is part digital asset management system, part records management system, part research information management system. This workflow was designed to address a specific institutional repository use case, but resulted in the development of a RIMS that stores a complete record of every reported publication on the Bloomington campus. Because this workflow is not dependent upon commercial software, it offers several advantages to institutions:

1. It gives campuses local control over quality control when disseminating metadata for faculty-authored articles.
2. It enables institutions to be flexible in selecting or de-selecting research administration workflow components without disrupting the entire administration and compliance ecosystem.
3. It lessens the likelihood that faculty-entered data in RIMS that is ingested into public-facing profile systems will be monetized by commercial entities.
4. It populates the institutional repository and provides a single record for research output on campus while broadening access to faculty-authored research.

Bryant et al. wrote in a comprehensive 2017 report on RIMS that "While RIM systems and IRs overlap in functionality, there are characteristic differences. The main purpose of collecting publications as part of RIM is to collect and validate institutional research outputs ... the main purpose of an IR is to facilitate open access and reuse of publications..." (p. 52). Although these systems have traditionally run on separate platforms and served different institutional priorities, a future-facing institutional repository is likely to be at least minimally integrated with a RIMS and it is conceivable that going forward there will be wider adoption of systems that offer fully integrated RIMS/repository platforms. There are new technologies and opportunities for a modern IR that revitalize its role and broaden its value at an institution. These products are already emerging in the

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commercial sector — it remains to be seen whether locally-owned, open alternatives that prioritize the critical scholarly communication role of libraries will surface.

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Endnotes

1. **Eric Van de Velde** wrote in a 2016 blog post “With the IR at a dead end, Green OA must pivot towards alternatives that have viable paths forward: personal repositories, disciplinary repositories, social networks, and innovative combinations of all three” <http://scitechsociety.blogspot.com/2016/07/let-ir-rip.html>. See also: **Poynder, R.** (2016, September 22). “Open and Shut?: Q&A with CNI’s Clifford Lynch: Time to re-think the institutional repository?” https://poynder.blogspot.com/2016/09/q-with-cn-is-clifford-lynch-time-to-re_22.html

2. There are numerous research profile systems that have been adopted by universities. One resource for comparison of these systems is the “Comparison of research networking tools and research profiling systems” Wikipedia article, available here: https://en.wikipedia.org/wiki/Comparison_of_research_networking_tools_and_research_profiling_systems.

Rumors from page 22

Ian Singer is no longer at **Credo Reference**. He is now in New York City as the **Chief Strategy Officer** at **Capira Technologies, LLC**, where he will assist the chief executive officer in developing, communicating, executing and sustaining corporate initiatives. <https://www.capiratech.com/>

The marvelous **Jean Shipman** is retiring from **Elsevier** where she was VP Global Library Relations. **Jean** has had a long and impressive career. She retired as Librarian Emerita & Director for Info Transfer, Center for Medical Innovation, in Salt Lake City, Utah. Good luck and Happy trails, **Jean!**

The ubiquitous **Don Hawkins** — who will be blogging the **Charleston Conference** once again this year — has a great set of articles about the opening of the newly redesigned **Temple University Charles Library** as well as an interview with **Stephen Bell**, the Associate University Librarian for Research and Instruction Services. **Don** has written his usual in-depth report and interview. Watch for it in the **ATG December-January (ALA Midwinter issue)** and online at www.against-the-grain.com/.

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