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Evolving library practice toward the sustainability of supporting open access

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Abstract
This paper is based on the Evolving Library Practice toward the Sustainability of Supporting Open Access panel presented at the 2024 NISO Plus Global/Online conference on September 17, 2024, and brings together four perspectives on how academic research library practices are evolving in response to developments in the global open access landscape. The authors discuss current pain points in library support of open access publishing and explore how we might collectively work toward scalable and sustainable open access workflows.

Keywords
Open access, business models, business processes, library workflows, sustainability

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Introduction

As open access publishing models have evolved over the last three plus decades, new funding mechanisms have proliferated to maintain and sustain them.[1,2] In the current landscape of publisher revenue models that include author-pays, institutional sponsorship, and collective action, have libraries reached an inflection point for open access business processes that underpin their financial support of open access publishing? With limited monetary and labor resources, how can libraries move beyond their current pain points driven by lack of business process standardization as we look to a future where open access is the norm for library functions, not the boutique? This paper provides a brief overview of the current approaches taken by four academic research libraries to support open access and features a dialogue focused on open access journal articles between Maureen Walsh, Scholarly Sharing Strategist, The Ohio State University Libraries and three panelists, Miranda Bennett, Director of Shared Collections, California Digital Library, Matthew Goddard, Head of Access and Acquisitions, Iowa State University Library, and Joshua Shelly, Transform2Open Project Member, Potsdam University Library. The authors share their perspectives on how library practices are evolving in response to developments in the global open access landscape and how we might collectively work toward scalable and sustainable open access workflows.

Background

The Ohio State University Libraries

The Ohio State University (Ohio State) is a large public doctoral-granting research institution in the United States that advances research, creativity, and innovation and embraces its land-grant mission. With nearly sixty-seven thousand

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students and $1.45 billion in research and development expenditures, Ohio State is "dedicated to creating and discovering knowledge to improve the well-being of our local, state, regional, national, and global communities.[3]"

The Ohio State University Libraries (University Libraries) has supported open access for more than two decades. Our support has included managing Ohio State's institutional repository—now in its twenty-second year—serving in governance roles for community-supported open scholarly infrastructure, and publishing and hosting diamond open access journals. Ohio State does not have a university open access policy, but University Libraries passed an open access resolution in 2012[4] that covers its own faculty.

University Libraries manages a materials budget with expenditures of more than eighteen million dollars (U.S.). For the past 6 years, we have prioritized redirecting library collections funds from paywalled subscription models to models that expand avenues of open access, extend read access, and support authors' rights. In addition to financial support for open scholarly infrastructure, diamond open access, Subscribe to Open (S2O),[5] and open scholarly monographs, Ohio State currently has thirteen Read and Publish or Pure Publish agreements with five commercial publishers and eight non-profit publishers.[6] University Libraries entered into six of the agreements as an institution, two as a member of the Big Ten Academic Alliance, and five with our state-wide consortium, OhioLINK. Each agreement is bespoke and has its own open access funding workflow built on five different publisher dashboards and three offline publisher data reports. As University Libraries funds around fifteen hundred open access articles per year via these agreements, the manual labor of boutique agreements is not sustainable.

As University Libraries expands our open access portfolio, our goal is to move beyond the pilot phases and experimentation of our first open access publishing agreements and operationalize open access support by stewarding resources and advancing innovations to harness a future where open access is a norm for library functions. As we work toward the sustainability and scalability of open access support with routinized workflows and standardized processes, we also aim to balance models that directly support our own authors and researchers with programs and initiatives that move beyond article publishing charges (APCs) and book publishing charges (BPCs) and toward advancement of global equity in scholarly publishing.

California Digital Library

California Digital Library (CDL) is part of the University of California (UC) System in the United States. Administratively, it is part of the UC Office of the President, and we work with all ten system campus libraries. The Shared Collections area is responsible for systemwide licensing, open access agreements, and shared print, so open access sustainability is something we think about a lot.

The UC system is a research powerhouse with high levels of publication and billions of dollars of external research funding, and its commitment to open access dates back almost two decades. Starting with campus-level resolutions supporting open access in the mid-2000s, UC then established systemwide open access policies in 2013[7] and 2015,[8] enabling authors to deposit their work in the UC institutional repository (which is managed by another program area at CDL).

Another milestone in the history of UC's commitment to open access is the 2018 Declaration of Rights and Principles to Transform Scholarly Communication,[9] issued by the University Committee on Library and Scholarly Communication, part of the system-level Academic Senate. This statement illustrates the remarkable level of faculty support CDL and the UC Libraries enjoy, support that enables close collaboration with faculty and strengthens our negotiating position.

Since 2019, CDL and UC have established sixteen transformative/open publishing agreements, including agreements with the largest commercial publishers. Many of these incorporate a multipayer approach that brings author grant funding into the financial structure, while maintaining full APC coverage for authors without grant funding. In addition, CDL has worked with the UC campus libraries to support non-APC-based models for open access, including S2O and diamond open access.

CDL manages these systemwide agreements and support commitments, which have introduced new workflow and communication challenges, as well as amazing opportunities to advance UC's mission to serve the public good by making UC research openly available to all and to develop innovative approaches to open access that can benefit the broader library and scholarly communications community.

Iowa State University Library

Iowa State University (ISU) is a large publicly funded research university located in central Iowa, United States, with about thirty thousand students and three hundred and fifty million dollars (U.S.) in research funding. Informed in part by our founding land-grant mission, since about 2019 we have taken a strategic approach to open access that fully integrates open access funding with our normal collections decision-making and acquisitions processes.

We now have open access agreements with twenty-two publishers. These are agreements that fully fund the open access publication of ISU's institutional research, so this figure does not include discount programs and other open access models. There is quite a bit of variety within this group; there are agreements where the open access publishing entitlement is capped, others where it is uncapped; there are small society publishers and large commercial publishers; Read and Publish agreements, and pure open access agreements. At the time of the 2024 NISO Plus Global/Online conference, sixteen hundred and thirty-seven articles had been published open access under these agreements. At the same time, we are vocal supporters of more equitable open access funding models, especially S2O and diamond open access publishing, which together make up about 12% of our open expenditures. Altogether, including all forms of open access funding, about 20% of the ISU Library's total collection expenditures support open access publishing of some kind.

Within the library organizational structure, the implementation of these agreements is the responsibility of the Access and Acquisitions Department of the Collections and Technical Services Division. This department includes two units, responsible for acquisitions and e-resources management, respectively. The primary role of this department is to ensure that when collections funds are being used, the library is maximizing the value of its investment. For open access agreements, that means the negotiation of the contract, article-level eligibility approvals, reporting on the performance of each agreement, and other processes.

University of Potsdam

The University of Potsdam is a medium-sized research university near Berlin, in Brandenburg, Germany, a former part of East Germany. Founded in 1991, shortly after German reunification, the university enrolls around twenty thousand students and employs approximately two thousand scholars, many of whom collaborate with or hold joint affiliations at nearby research institutions, including several located on the university's Golm campus.

The University of Potsdam has long been committed to open access. In 2006, the University Senate passed its first resolution supporting open access, and in 2015, the university president signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities.[10] To assist scholars in publishing open access, Potsdam University Library provides extensive services, including operating a university publisher; offering financial support through a decade-old publication fund; maintaining an institutional repository, "publish.UP," where scholars can post their work; and participating in Publish and Read or Pure Publish agreements with numerous publishers.

Potsdam University Library also supports key open access infrastructures such as ORCID and the Directory of Open Access Books (DOAB); participates in pledging programs for non-commercial publishers such as the Open Library of Humanities; and contributes to alternative open access models such as S2O. Fortunately, these efforts have significantly boosted the institution's open access output. However, they have also introduced new workflows and required library staff to develop new skills essential for managing open access publication.

It was these evolving workflows and competencies that led to Potsdam University Library's involvement in Transform2Open,[11] a project funded by the German Research Foundation to address the financial and organizational aspects of the open access transformation, especially, though not exclusively, in Germany. In collaboration with the Jülich Research Center and the Helmholtz Open Science Office, our team at Potsdam focuses on two key areas: developing open access competency profiles to guide the training of future library professionals and creating a list of recommendations to streamline and optimize open access workflows.

Dialogue

Everyone on this panel is navigating how best to support researchers and optimize open access business processes in a rapidly changing scholarly publishing landscape. As open access models and processes continue to expand without standardization across workflows, libraries need to make difficult choices with resources. Maureen Walsh will ask a series of questions of the panelists to try and unpack the current roadblocks to scalable and sustainable open access support as well as to address new approaches in practice now or that our panelists hope to see implemented in the near future. Our discussion will focus on open access journal articles to bound our conversation.

Open access business processes and the organizational structure of libraries

Maureen Walsh. What strikes me about each of our library contexts, are questions in my mind around the potential impact of where and how open access business processes are situated within the organizational structure of libraries. For Ohio State, we approached the new work of exploring and piloting transformative and transitional agreements, and the prioritized expansion of support for open access programs and infrastructure, as part of a strategic initiative co-led by me (the Scholarly Sharing Strategist) and the Collections Strategist with the support of the Electronic Resources Officer. We are in the same library division, but in different program areas—Scholarly Sharing, Collections Strategy, and Acquisitions and Discovery. The new working relationships served a specific purpose, but the ad hoc structure no longer fits the amount of work required. With the 6-year initiative ending in December 2024, and our library's commitment to continue the work, we are now planning to operationalize the business of the initiative, transitioning from the strategic to the operational, without additional resources for staffing. So, a pain point for us is absorbing the ongoing and increasing open access work into our normal practice while the processes are not yet routinized across our agreements. At Iowa State open access is a core component of their collections program, with open access workflows managed by their E-Resources Unit. Matthew, can you share what you see as the advantages, or disadvantages, of that model?

Matthew Goddard. The biggest advantage is that it creates a consistent home in the organization where our support of just about every open access funding model can live comfortably, whether it is a Read and Publish agreement or an S2O subscription. It streamlines decision-making on renewals or new agreements, as our processes for these are the same as for a new database or e-book package. And it streamlines our management of these agreements, since e-resources staff are used to working directly with a wide variety of publishers, are comfortable working within a variety of administrative portals, and gathering data to support the evaluation of agreements.

A good example of what this looks like is a project the ISU library pursued in 2022 to classify open access expenditures to better answer important questions such as how much of the ISU library's collections budget supports open access? And what open access models are we supporting, and how is that changing? So, we developed our own set of order-level open access reporting codes in our acquisition system, and we are now able to answer those questions with quite a bit of precision.

A potential disadvantage to this approach is that it may become too focused on questions of budget allocation, to the exclusion of alternative ways of pursuing open access, such as institutional repositories. It is possible to approach open access agreements in a way that centers their implementation around the institutional repository. This method is distant from the approach of the ISU Library, where the repository is on the other side of the organization from the collections program, but to a scholarly communications librarian it might appear as the natural outgrowth of well-established methods of managing a repository.

Miranda Bennett. At CDL, we are very fortunate to have a dedicated open access agreements team, as well as a team that focuses more on traditional licensing and technical services processes. A challenge we are addressing now is bringing the work of those teams into closer alignment. The prospect of getting a more holistic view of how our collections funds are being invested in all types of open access models is very appealing.

Evolution of institutional approaches

Maureen Walsh. We each shared where we are in terms of our current practices around support for open access in the background section. But how have our institutional approaches to supporting open access changed over the last five or 6 years considering developments from funders and publishers in this space and other external or internal pressures or factors? Miranda, can you talk about how the CDL approach has evolved since the Choosing Pathways to Open Access forum on the UC Berkeley campus in 2018[12]?

Miranda Bennett. Much of CDL and the UC's work in open access has been focused on transformative agreements, that is, agreements that shift library spending from access to subscription content to support for open access publishing, often in the form of covering APCs for affiliated authors. UC now has sixteen such publisher agreements in place, providing an open access option for about half of UC articles. Most of these agreements incorporate UC's multipayer model, which creates a path for author grant funding to be contributed to open access publishing fees, but they all provide full funding for authors without access to grants.

UC, through CDL's work across the system and local campus library commitments, also supports other pathways to open access publishing, including S2O and collectively funded diamond open access journals, and CDL is one of the top library publishers in the United States, offering over ninety open access academic journals.

An external factor CDL and UC have paid increasing attention to in recent years is authors' rights, specifically the expectation of some publishers that authors will surrender control of how their open access work gets used by signing an exclusive license to publish. This is an issue we now bring to the negotiating table, where we can ask publishers to address it at the moment we have leverage to demand formal, enforceable commitments to action.

Joshua Shelly. Potsdam University Library has also witnessed a variety of changes over the years when it comes to supporting open access, something we see played out at the level of our workflows. When I began my position with Transform2Open in early 2023, I first dedicated myself to a study of Potsdam's local open access workflows, conducting interviews with colleagues and reading past national and international articles and recommendations to provide me with historical background in which to situate my institution.

As I already mentioned, Potsdam's experience with open access is relatively long-standing. The institution has funded open access publication charges since the early 2000s, starting with BioMed Central, and has maintained a publication fund since 2015. In the first decade of open access, however, significant resources were dedicated to a rights retention strategy. Colleagues developed workflows to identify published articles and retroactively make them open access by depositing them in our institutional repository. This approach relied on bilateral and national publisher agreements, as well as an understanding of German copyright law.

In response to these needs, colleagues at the national level established DeepGreen,[13] a program designed to automate deposits into institutional repositories and streamline workflows. However, around a decade ago, a movement started that culminated with the rise of Germany's first national level Publish and Read agreement. The ongoing project known as DEAL heralded a shift in the focus of open access strategies.[14] This transition required entirely different workflows from those developed for rights retention.

So, when I arrived at Potsdam, I encountered a complex landscape of workflows shaped by years of adapting to various open access strategies. While this overview is a simplification of the situation, it reflects a broader challenge faced by library colleagues worldwide: open access is not a monolithic concept, and workflows vary significantly depending on the strategies adopted by each institution or country.

Matthew Goddard. In 2019, the ISU Library began taking an ambitious "full steam ahead" approach to APC-based open access agreements, quickly signing on with a broad and diverse group of open access and hybrid publishers in an effort to make all ISU research openly available. But if you were to graph our uptake of new open access agreements since then, you would see that they have tapered off significantly in the last couple of years. That is—emphatically—not due to any wavering in the library's commitment to open science. Instead, it is a consequence of a variety of local, national, and global factors.

Locally, the library budget is flat, and we seem to have early on plucked the low hanging fruit of cost-neutral (or nearly cost-neutral) agreements. Also, despite quite a bit of experimentation, we have not discovered an acceptable scalable solution for centrally managing these agreements.

Nationally, in the United States, we are uncertain about the effects of the implementation of the White House Office of Science & Technology Policy (OSTP) memorandum on Ensuring Free, Immediate, and Equitable Access to Federally Funded Research and how that will affect our open access strategy. The "Nelson Memo" calls on federal agencies to make taxpayer-funded research publications "publicly accessible without an embargo.[15]"

Globally, we have watched with concern the Hindawi publishing integrity debacle[16] and the threat of a broad loss of trust in science. And last, but definitely not least, there is the all-important issue of equity: the potential for APC-based funding models to exclude huge and important categories of researchers.

In summary: we have intractable budgetary pressures, a variety of misgivings about an APC-based publishing economy, and uncertainty about the effect of the OSTP memorandum. For now, we are responding to this environment by supporting as much equitable open access as we can—by "equitable" open access I mean open access publishing that financially excludes neither authors nor readers, primarily S2O and diamond open access publishing. But despite supporting as many of these initiatives as we can reasonably justify, they still make up a small portion of our overall open access investments.

Authors' rights

Maureen Walsh. Miranda, you mentioned your current work concerning authors' rights in negotiations with publishers. I would like to unpack that a bit more. Authors' rights are high on our priority list at Ohio State, and I would be interested to hear more about what you are focusing on in negotiations with publishers.

Miranda Bennett. The authors' rights issue UC has paid special attention to for the past couple of years is language in license to publish agreements (LTPs). These LTPs are agreements between publishers and authors; the library is not a party to them. If the issue is to be addressed, library representatives need to introduce this topic into open access publishing negotiations.

A common practice in LTPs for open access articles is leaving copyright with the author and assigning a Creative Commons license. If the license is CC BY (which requires attribution, but otherwise does not limit how or by whom the work can be reused), the LTP usually documents author rights appropriately, but if the license is a more restrictive version, such as CC BY-NC-ND (which limits reuse without rightsholder permission to cases that are non-commercial and non-derivative), some publishers word the LTP so that the publisher exerts exclusive control over the license. This means not even the author can make commercial or derivative use of their own, open access article without receiving permission from the publisher. For authors who have selected a more restrictive license precisely because they want to maintain more control over the reuse of their work, this surrender of rights to the publisher runs directly counter to their interests.

In some cases, this has been a relatively easy topic for negotiation, as a few publishers simply did not realize the implications of the language in their LTPs and were willing, even eager, to adopt more author-friendly terms, such as the publisher being granted a non-exclusive license to publish. With other publishers, however, the negotiation can become very complex, especially when they anticipate that a loss of exclusive rights could threaten a revenue stream. UC's general approach now is to present publishers with non-exclusive rights-granting language as the starting expectation and work with them (and often their legal staff) to determine which specific rights the author could grant exclusively to the publisher. Progress has been slow, but meaningful, and at this point, no publisher should be surprised when a library brings this issue to the negotiating table.

Pain points in current library open access workflows

Maureen Walsh. Joshua and I are currently participating on the NISO Open Access Business Processes Working Group.[17] One area where Joshua and I commiserate is around the pain points in current library open access workflows. While established workflows in libraries, say around subscriptions or electronic resources, have had decades, or eons, to refine workflows, we are still very much in the early days as far as management of open access—and open access administration has become incredibly complex, and time intensive, very quickly. If you were asked to help compile a list of pain points from the library perspective, what might you bring to the table?

Miranda Bennett. Challenges arise at each point in the lifecycle of an open access agreement. From the first moment such an agreement is a glimmer in a librarian's eye, we struggle to gather and analyze data points that we have not had to consider in the past, such as publishing patterns of affiliated authors (specifically corresponding authors, an especially difficult category to pin down) and total APC spend with a publisher. When a new open publishing agreement is implemented, we often experience pain points related to communication: what information about the agreement needs to be shared, with whom, and where? Over the term of an agreement, data issues are again at the fore, including how to measure success when old standbys such as cost-per-use or content overlap analysis no longer apply, at least not in the same way. We are moving toward better options for assessing, for instance, the impact of articles made open access because of our agreements, but we are not there yet. And then, before you know it, it is time for a renewal negotiation! And at that point, we are often trying to sort out how our negotiating position should adapt to fit all the changes that have taken place in the scholarly communications landscape in the preceding two or 3 years.

Matthew Goddard. A pain point that has been consistent for the last several years is the variability of hybrid journal author submission workflows across publishers, and the great sensitivity of authors to any uncertainty around APCs or questions about Creative Commons licenses. Most authors appear to have a very low threshold for doubts about open access publishing before they choose the subscription route, and libraries and other institutional funders do not typically have visibility into the latest version of these systems to see what authors see. Small changes in the author submission workflow can have a significant impact on an agreement's success. There is an opportunity here for both publishers and libraries to continue to improve our communication with authors to address any concerns and give them the necessary confidence to choose the open license.

Joshua Shelly. In our interviews within Germany while preparing Transform2Open recommendations, one major pain point stands out: metadata. It is inconsistent, does not follow a single standard, is often faulty, and requires extensive manual verification and correction. Not all publishers fully deposit metadata in centralized infrastructures, and significant human intervention is needed to adapt it for various uses—whether for agreement administration, evaluation, or funder reporting. Librarians often highlight the high costs of APCs or Read and Publish agreements, but we rarely discuss the hidden costs of open access, such as the work hours spent wrangling metadata. Automating these processes is technically feasible, but to achieve this, we need standards agreed upon by publishers, funders, and research institutions. My hope for our NISO Open Access Business Processes Working Group is that through collaboration on a unified series of recommendations that might lead to standards we can reduce administrative costs associated with open access, even if APCs remain unchanged.

Innovative approaches

Maureen Walsh. Considering your current pain points, what innovative approaches are you investigating or deploying to help mitigate some of the back of the house open access management challenges?

Matthew Goddard. From the beginning the ISU Library has been very interested in the possibility of centralizing workflows across all of our agreements, especially article-level reporting. We have also been strong supporters of the OA Switchboard[18] from the beginning, and we see so much potential for this piece of critical infrastructure to make a difference here. But if you want to use the OA Switchboard for article-level reporting across all of your agreements, you quickly run into an obvious problem, which is that not all publishers participate in the OA Switchboard.

In theory that is a problem with a solution, because those non-participants do provide their own data, either directly or via a third-party tool such as RightsLink[19] from the Copyright Clearance Center, and it should be possible to build a simple utility that would take this data, received directly from the publisher in their own format, and transform it into the OA Switchboard schema and collocate it within a database with our existing OA Switchboard data. We worked on the development of this utility with the OA Switchboard as a very rudimentary proof of concept in 2023, and while it worked to transform the publisher-specific data into the OA Switchboard format, at the end of the day this process was just as cumbersome and error-prone as our existing manually populated spreadsheet. Given the scale of our current agreements at present (around four hundred articles each year) and the relatively slow uptake of new APC-based open access agreements described previously, this spreadsheet continues to be our primary method of article-level reporting across our agreements.

Joshua Shelly. I can share a challenge identified by Transform2Open and some potential solutions we are exploring. When studying open access workflows, we quickly realized that key processes rely on intermediary platforms and publisher dashboards. These tools provide crucial metadata in various formats, contributing to the pain points I mentioned earlier. While deposit of a predefined set of metadata in central infrastructures could address many of these issues, another critical workflow handled through these tools is author verification for Read and Publish and Pure Publish agreements. Institutions use these dashboards to manually verify that an author is truly affiliated, ensuring the article qualifies under their agreement.

This process was manageable when libraries had only one or two agreements. However, as the number of agreements grows, this step becomes increasingly laborious. For example, my colleagues in Potsdam regularly log-in to multiple dashboards to verify multiple articles by different authors—and sometimes the same author multiple times a year. While this may seem minor on a local scale, globally, it clearly presents itself as an opportunity for optimization.

We initially envisioned a solution involving automatic author verification through the ORCID Affiliation Manager.[20] However, when we proposed this in the draft Transform2Open recommendations, commenters raised valid concerns: many authors lack ORCID IDs, and many institutions lack access to a central source of reliable affiliation data. Additionally, some worried that automatic verification might compromise accuracy.

I share these concerns, although I believe we often overestimate the accuracy of manual checks and underestimate the efficiency of automated workflows. Even with a slight error rate, automation can save considerable time and resources. Despite this, we have now returned to the drawing board. We still believe the proliferation of dashboards offers an opportunity for optimization, but we are not yet certain what form that solution might take.

Challenges and excitement

Maureen Walsh. To step back in our thinking, what are the most daunting challenges your library or institution faces today in the open access space, or that you foresee you will face in the near future? And on the flip side, what are you most excited about?

Matthew Goddard. Budget challenges are always daunting, but I will take this in a different direction. Earlier I briefly mentioned the publishing integrity crisis, of which the over eight thousand Hindawi retractions in 2023[16] remain exemplary. But those fake articles were submitted largely prior to the rise of widely available generative AI, so there remains a looming possibility of a broader crisis that would make those retractions look minor. With that in mind, those responsible for managing these agreements should be aware of the way by which they can turn institutional affiliations into a marketable product for paper mills, and what it would look like to your Provost if the library spent thousands of dollars to taint the scientific record with junk science.

Two suggestions for beginning to address this, offered here with some circumspection, acknowledging that these are complex topics: first, it may be beneficial for publishers to routinely share the submitted manuscript with libraries during the eligibility approval workflow. We should know what we are paying for. Second, perhaps there should be a provision in our contracts for a refund on expenditures paid toward the open access publication of retracted articles.

The development we are most excited about is the building momentum for S2O. The 2024 announcements from De Gruyter[21] and Project MUSE[22] show that after many years as a niche model, S2O can work more broadly as an alternative to APCs.

Miranda Bennett. Budgets remain a significant challenge for libraries in the transition to open. I am particularly concerned about library collections budgets at this moment when we are increasing investment in open access while needing to maintain significant financial support for traditional subscriptions, book acquisitions, and other content sources that are important to our communities, but are, for various reasons, still not open. And while shifting existing spend from purchasing content to supporting open access publishing can be relatively straightforward in cases of willing publishers, types of open access that never had a funding stream, such as publishers that were fully open access from the start or diamond open access journals reliant on community contributions, can be at a significant disadvantage when libraries need to make hard budget decisions.

As far as something I am excited about, both locally at UC and more broadly, I think we are seeing expanding opportunities for authors beyond STEM to publish open access. So, we are looking for ways to make monograph publishing more accessible to authors, and we are seeing greater interest among our humanists and social scientists and looking for new ways to work with publishers to open scholarship in their disciplines. I think there is a lot of good news ahead in that area.

Looking to the future

Maureen Walsh. To wrap up our discussion, if you could change one thing in the next year or two to improve the sustainability of supporting open access, what would that be? And what do you hope to see in 5 years' time?

Matthew Goddard. It is unclear whether this suggestion belongs in the shorter or longer of your two time periods, but there seems to be a real opportunity for greater innovation in the area of open access agreement management systems. The first generation of these systems defined their frame of reference as the articles published under an institutional open access agreement. They have sought to help institutions track and report on this particular set of articles, but any articles beyond this narrow scope are not included in any way. A much broader view would begin with the entire academic research universe as captured by a general index such as OpenAlex.[23]

You can imagine a Venn diagram of three overlapping circles, each representing a category of interest to a library allocating a limited budget to support open access. One circle represents open access articles (regardless of their institutional affiliation or whether they were funded under an agreement), one circle represents articles with an ISU author (regardless of their open access status or whether they were funded under an agreement), and one represents articles paid for by ISU (regardless of whether these were published by ISU authors or their open access status). Most systems only look at the place where these three circles intersect, but that is a very narrow view. It also excludes equitable open access funding models. By expanding the scope of these systems, you greatly expand the possible questions they can help answer.

This expanded system would be well-positioned to take its place as an article-level acquisition system to sit alongside, or perhaps within, our journal and book-level acquisition systems. Not only would that allow us to easily associate published articles with an agreement, but it would also allow us to associate the books we support from a diamond open access publisher with our payment to that publisher, and the articles in a subscribed S2O journal with that subscription order.

Much of the metadata challenges that make this work complex arise from data flows that are outside of the mainstream that publishers and libraries are focused on—bespoke, publisher-specific reporting formats generated by business processes, rather than the editorial processes that feed bibliographic data aggregators such as Crossref. So, by expanding the scope of the systems where we manage article-level metadata to include such aggregators, we not only expand their utility, but likely also make them more accurate and consistent.

Joshua Shelly. My hope is that within 5 years, metadata exchange and workflows will become cornerstones of contracts between publishers and scholarly institutions. I see the forthcoming best practice recommendations from the NISO Open Access Business Processes Working Group as key to achieving this. By contractually stipulating what metadata must be delivered, at what quality, and to which central infrastructure points, I am confident we can advance toward more automated workflows, requiring fewer personnel even while delivering greater accuracy.

Miranda Bennett. Another potential change that I think is already starting to happen is the creation and spread of open access business models that require relatively low administrative overhead on the part of libraries. S2O is a good example: libraries maintain their subscription investment and established workflows, and if enough libraries do this in a given year, the publisher opens all the content. It is not a perfect model—we have yet to find such a thing—but it seems pragmatically doable for many libraries and smaller publishers in a way that complex transformative agreements may never be. I hope we will collectively come up with other options for libraries that are eager to contribute to the opening up of scholarly content but are limited by staffing and financial constraints.

Conclusion

The current open access landscape is rife with challenges, not only for libraries and their institutions, but for authors, researchers, publishers, infrastructure providers, and funders. Solutions for the pain points experienced across the ecosystem are nascent at best. The academic library perspectives shared in this paper point to incremental improvements in business processes while we remain awash in idiosyncratic complexities and resource pressures. But lest we despair, scholarship made open with our imperfect workflows and models is open scholarship—for all stakeholders.

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