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Infrastructure for Open Access: Mechanics, Economics, Politics

Mark Mattson, Sarah Pickle, Andrew Gearhart, and James O'Sullivan

Abstract

Using the Pennsylvania State University Libraries as a case study, this essay explores the development of a library-based open access publishing program, and illustrates how open access library publishing can facilitate open access models by providing additional infrastructure for the dissemination of scholarly content.

1 Introduction

Over the past two decades, the open access (OA) movement has made gains in the scholarly community, thanks in large part to the convergence of a few key factors. Advances in technology have enabled the inexpensive production and dissemination of scholarly communication online; institutions have committed greater resources to the development of collaborative, open-source software that can, in turn, be adopted by others worldwide; and many scholars who share their work through these channels have come to affirm OA principles by

publishing in open-access venues and signing on to open-access resolutions brought to their faculty governing organizations.[i] In short, OA is gaining ground not simply because we are now reading about its benefits in the popular media,[ii] as is often argued, but also because we can see the early codification of the mechanical, economic, and social infrastructure necessary for the sustainability, and thus the enduring impact, of open access publishing.

With a long history of facilitating access for all, and typically little pressure to generate profit from its enterprises, the research library has become a principal actor in, and motivator for, the scholarly OA movement on many academic campuses. Often working in concert with the campus press, IT department, office of research, and researchers themselves, the library—a central unit with extensive experience organizing and supporting research publications—is well positioned to coordinate those collaborations by piecing together the elements necessary for developing and sustaining a multi-faceted OA publishing program.

While the library is still largely viewed as a site for the collection and storage of scholarly resources, it has also been publishing and disseminating these materials for some time--though not always in formal modes of scholarly communication such as journals, monographs, and edited volumes. For many of these institutions, efforts to publish monographs, journals, and conference proceedings only arose after experimentation with other, less formal types of digital scholarly resources. Indeed, the advent of web publishing in the early 1990s enabled libraries to experiment with text markup and digital cultural heritage exhibitions. Exemplary projects of the time include the University of Virginia Library's work with Edward L. Ayers' Valley of the Shadow,[iii] released in 1993, and Indiana University's Library Electronic Text Resource Service,[iv] which was also launched in 1993 to support the encoding of texts that now make up digital collections like the Victorian Women Writers Project.[v]

With these digital projects as precedents, the range of work academic libraries do to support scholarly communication in its myriad forms has remained equally varied. The *Library Publishing Directory 2016*[vi] details the breadth of publishing-related activities at 115 institutions with programs in this area. Facets of these programs include support for traditional (e.g., journals, monographs, conference proceedings) and non-traditional (e.g., digital image collections, research datasets, open educational resources, digital projects) forms of scholarly communication, as well as outreach around OA resources and principles, and efforts to pass open-access resolutions and policies.

As numerous reports from Ithaka S+R have demonstrated, digital sustainability often requires lasting investments in "content curation, user interface development, technology upgrades to improve the user experience, and ongoing efforts to engage with the audience," as well as the funds to support that work.[vii] In short, taking care of these materials for the long term requires a well-developed and -maintained infrastructure, not only for the technology supporting a given resource, but also for attracting contributors, users, and other stakeholders to these resources, as well as the funding that enables those ongoing commitments. Further, for these efforts to be truly effective, all three pillars—the technological, the socio-political, and the economic—should be mutually supporting. If, for instance, a library publishing manager were to give priority to the technical maintenance of a particular platform, the usability of the interface could be neglected, potentially making it difficult for users and unattractive to potential contributors. Interestingly, it is often the socio-political aspect—the anticipated support of contributors, users, and other stakeholders, such as library heads and additional institutions pursuing similar goals—that is overlooked when a library is deciding whether to offer a new service; interface development can take initial precedence over communication with other

departments about manpower and resources.[viii] However, much of this investment in digital sustainability is indeed possible because the library administration has made publishing a financial priority within the unit, and/or because it has fostered collaborative efforts with other libraries. Still, the three pillars remain essential; without content creators and consumers, financial resources alone cannot result in digital sustainability.

The Penn State Libraries' early ventures into digital publishing began to take shape in 2004 with a successful Mellon grant submitted and administered with Cornell University. The DPubS initiative was an outgrowth of Cornell's Project Euclid, an early digital publishing platform for journals in mathematics and statistics. Journal editors had been consistently communicating the need for a straightforward, flexible publication management system that was open source rather than proprietary; the intent of the grant was to build such a platform, and make it discipline-agnostic. Cornell invited Penn State to partner on the planning and technology development, with Cornell's David Ruddy serving as the project's technical manager. According to Nancy Eaton, then dean of the Penn State Libraries, the Libraries' work with DPubS was a natural extension of strategic changes already underway within the Libraries, with a growing focus on exploring the potential for a role in both OA and digital publishing. The latter focal point dovetailed with an initiative from Sanford Thatcher, the former director of the Penn State Press, to explore interest and opportunities within the university press community for engagement in digital publishing.[ix]

This alignment of missions led to a series of innovative changes, including moving the Penn State University Press's direct reporting line to the dean of the Penn State Libraries (one of the first university presses to do so), a title change to Dean of Libraries and Scholarly Communication to reflect this new alignment, and the creation of the co-managed Office of

Digital Scholarly Publishing (ODSP) in 2005. Eaton notes it was a mutually beneficial agreement—"the Press could use the Libraries' technology (especially DPubS software, digitization technology, and [computer] networks), and the Libraries could rely on the Press's editorial and marketing expertise"—that would demonstrate "long-term commitment on both sides."[x] Under Mike Furlough, then Associate Dean, and Patrick Alexander, Press Director, the ODSP continued for a number of years as an initiative that linked the Press and the Libraries, publishing collaborative digital content such as a Romance Studies series, and providing the incentive for the Libraries to digitize several books from the Press's backlist every year and make them openly available.

Under the current Dean of Libraries and Scholarly Publishing, Barbara Dewey, the Penn State Libraries has built upon Eaton's and Furlough's efforts, hiring strategically in areas--including copyright law, data curation, and journal management, and others--that contribute to a growing and multi-faceted library publishing program. Publishing activities within the Libraries now concentrate on initiatives that support open access principles and platforms that provide cost-effective alternatives to commercial publishers for faculty and students. These initiatives are predominantly located in a relatively new department founded for this purpose by Deans Furlough and Dewey, currently known as Publishing and Curation Services (PCS). PCS institutionalizes and brands the Libraries' open access publishing efforts, and contributes to the goal of making as much scholarly research as possible readily and openly available. Barbara Dewey believes that open access publishing is central to the University's global initiatives: "OA is strategically important for Penn State because we want to directly help solve the world's problems," which requires facilitating access across the world to scholarly materials that enable just that kind of work.[xi]

In what follows, the Penn State Libraries journal publishing program will serve as a case study of an academic library publishing program committed to open access and firmly on the path to sustainability. What makes this particular program significant is not its size or the volume of its publications. Rather, it is the strategic planning, both for current initiatives and long-term development, that is instructive. Not only have the Penn State Libraries built and nurtured the technological infrastructure necessary to establish and maintain an OA publishing program, but considerable attention has also been given to the financial resources and socio-political will (i.e., buy-in and commitment from stakeholders and partners) that will likely be instrumental in the future, effectively treating and valuing them as their own types of infrastructure that need to be cared for just as thoughtfully as the technology itself.

2 Planning and Implementing an OA Publishing Program in an Academic Library

Technological innovation in the form of online publishing platforms such as Open Journal Systems, BePress Digital Commons, WordPress, and Drupal has made the mechanisms of scholarly publishing accessible to almost any academic library, and has been one of the key factors in increasing the feasibility of OA publishing. However, the challenges of planning and implementing a quality publishing program remain unchanged and are, in some respects, complicated by OA principles; relevant examples include recruiting technology expertise and accommodating more complicated copyright scenarios. This section will explore the practicalities of developing a portfolio of OA publications within an academic library, using the development of the Penn State Libraries journal publishing program as a model.

2.1 Early Planning

While it is impossible to foresee all the potential challenges a journal-publishing program may face, many obstacles can be avoided with careful early planning. The first stage of planning should include a review of relevant literature and resources (a list of useful resources has been provided at the end of the chapter), a careful examination of one's institutional environment for available resources and community needs, and an exploration of the publishing services and programs of other institutions of similar size and scope. In addition to learning about potentially well-suited model OA publishing programs via the information they provide online, those involved in program planning are highly encouraged to solicit the valuable advice of other programs that display desirable models. In development of the Penn State Libraries publishing program for electronic journals, the staff and director of the journal publishing program at the University of Pittsburgh[xii] were invaluable in their willingness to provide us with example documents, planning tips, and warnings of possible pitfalls. Learning from the experience of others has allowed us to foresee potential challenges, and provide thoughtful responses to those challenges. After collecting as much information as possible on useful program models, a rough sketch of the publishing program can be formed. This sketch should include preliminary ideas of where the program will be housed (physically and organizationally), what the workflow might entail, how the program will be funded, what technical infrastructure will be required, what staffing resources will be available, and on what OA publishing model the program will rely. For example, Penn State's library publishing is housed in the Publishing and Curation Services Department; funds are channeled through both the PCS and Libraries Technology (I-Tech) department budgets, and the journal publishing program currently operates on a no-subscription,

no-article-processing-fee, no-journal-maintenance-fee OA model, since the program is fully funded by the Penn State Libraries.

Before working out the finer points of the proposed publishing program, it is important first to meet with central stakeholders to ensure support for the project. Consulting with the library administration, technology unit, legal counsel, public relations, and, if present, the university press early in the planning process is vital to building the program efficiently and ensuring that fewer future revisions to the project plan will be necessary. The support of the library administration (and in some cases perhaps the central institutional administration) should be sought out first, since without this support the project is unlikely to reach its full potential. With the support of the library administration from its initial proposal, however, great gains can be made in attracting support from other key stakeholders, turning a simple proposal into a full library initiative. In proposing a publishing program to all stakeholders within an institution, sharing examples of other successful programs can be a great boon, and possibly provide answers to questions that may arise. The work of garnering stakeholder support should not be a one-time effort, but should instead be an ongoing process, keeping stakeholders up-to-date on new developments as they arise in order to build a community of support for OA publishing within the library and the institution.

2.2 Defining the Publishing Program

After the blueprint of the overall publishing program is established and the preliminary support of important stakeholders has been obtained, the micro-level components of the program--such as publication criteria, service offerings, workflow procedures, and technological requirements (which will be discussed in detail later in the chapter)--can be developed. This

planning should result in a series of documents that not only establish and define the program, but also ensure that the resulting imprint will cultivate respect, and thus refute any misinterpretation of OA publishing as being associated with lower quality publications, simply a variety of vanity publishing, or worse, predatory in nature. Further, each of these documents will likely necessitate the creation of supporting documentation such as training guides, consultation checklists, and program portfolio sheets.

The first two documents created for the program should define the user community and the services that will be offered. Unless unlimited resources and funding are available, it is important to define the criteria by which potential customers will be evaluated, in order to ensure that the program will have the necessary human and financial resources to meet the needs of the community. Likewise, it is important to recognize the limitations within which the program must operate, and limit the services to those that can realistically be provided. For example, it may not be reasonable to expect a small program with only 2 or 3 staff members to provide copyediting services for all, or even any, of the journals in the program's portfolio. Use and service criteria are also important, to ensure that the reputation of the imprint is upheld. Our solution to these issues with the Penn State Libraries journal publishing program has been to establish a tiered service model, with only minimal requirements for basic service. After the minimum requirements are met, a proposed journal may be further evaluated and placed in one of four service tiers, which provide varying levels of support and value-added services. With a tiered service approach, it is possible to provide publishing services to many different types of publications and groups – from departmental and student organization newsletters to established and rigorously refereed topical journals – without exhausting departmental resources.

Before offering the publishing service to the user community, it is important to outline whether or not any additional services, beyond hosting the publishing software, will be supported. Will program staff apply for an International Standard Serial Number for the journals, and at which tier level will this service be available? Will the institution provide Digital Object Identifiers for journals, and at what publication level? Will staff aid editors in creating editorial workflows? Will custom web design be available to individual journals? Examples of the user criteria and service definitions for our journal publishing program can be found at the end of this chapter.

The next set of documents created for the program should address the internal program workflow (for an illustration of our workflow in a simplified form, see Figure 1 below). How will new journal proposals be processed? Who will make decisions about the eligibility and appropriate service tier for potential journals? How will the technical infrastructure be maintained? At the Penn State Libraries, we have found that having a formal flowchart for the entire internal workflow of vetting new journal proposals and bringing them to fruition has been instrumental in ensuring a smooth experience for our users. New journal proposals are funneled through a web form and vetted against the basic criteria for service before a face-to-face meeting between the journal editors and publication manager is scheduled. The program staff then place the journal into the appropriate service tier, and begin preparing suitable legal documentation establishing the publishing relationship, setting up the new journal on the server, training the journal staff on the use of the publishing platform, and, depending on the service tier, performing additional value-added services.

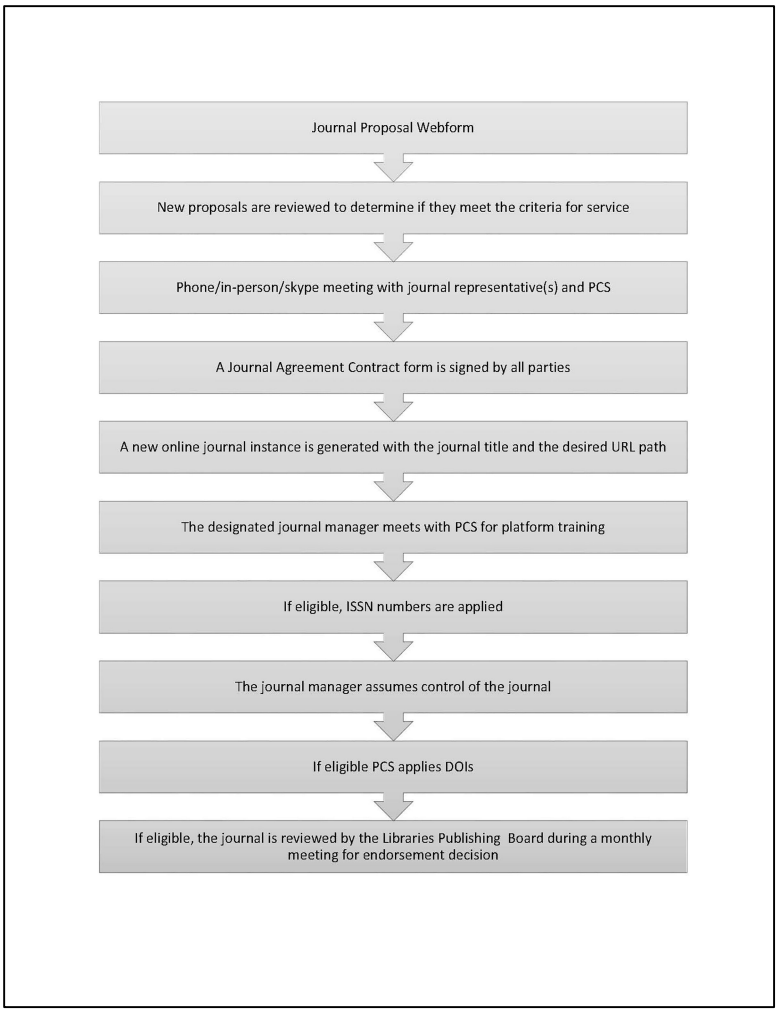


Figure 1

2.3 Legal Considerations

In our experience, one of the more time-consuming and difficult tasks in forming a new journal-publishing program is planning and creating the documents that will address the legal issues associated with the new publishing program. We highly recommend that library publishers establish legal agreements that outline the responsibilities of the journal and those of the library publishing program. Such documents ensure that each party understands the nature of the relationship and has reasonable expectations for the other party's actions. Depending on the structure of the specific institution, the process of creating these documents can be rather involved; these documents should consider multiple factors, including but not limited to the

ownership of copyrights, the services required, and standard working and communication procedures. In our case, we created four different agreements to match our four service tiers, using examples from other institutions as a guide for the legal language.[xiii] These agreements were all reviewed and revised by Penn State's Risk Management Office, and were approved for use. It should be noted that the decision as to who can sign these agreements on behalf of the institution should also be addressed at this point, as contract signing authority may be relatively limited depending on the administrative structure of the institution and its policies—for example, at Penn State, all of the agreements must be signed through the Office of Risk Management, and cannot be signed in-house by faculty of the Libraries.

As mentioned above, when addressing the legal issues of a new journal-publishing program, it is important to consider how the program will handle copyright. There are multiple models for the distribution of copyright that could be employed, and the best model can only be determined when examined in the individual context of the specific institution's environment. Will the library, as the publisher, hold the copyright of the issue, or the articles themselves? Will the journal as an entity hold copyright? Will journals be allowed to let authors retain copyright? If the journal holds copyright, will they be signing a license to the library to publish the work? Depending upon the answers to these questions, another set of legal documents may need to be created. For our journal publishing program, we have elected not to hold any copyrights. Instead, as part of the service agreement signed by the journals and the Libraries, each journal grants a non-exclusive, irrevocable license to the Libraries to publish the work on its servers, allowing the journal future flexibility while ensuring ongoing access to back issues of the publication. Further, we also allow the journals to choose the arrangement with their authors that best suits their needs, while offering guidance to editors when requested.

2.4 Establishing Program Oversight

Open Access publishing, in some circles, is perceived as largely low-quality, vanity, or even predatory publishing.[xiv] In order to combat such misperceptions, it is of the utmost importance that new library-housed OA publishing programs establish high quality standards and ensure that those standards are met. There are many resources addressing industry standards that can be used in the formation of quality control criteria for the program (see the resource list at the end of the chapter). A common way to ensure that the program's standards are being met, both in commercial publishing and in OA publishing, is through the establishment of editorial, or oversight boards. The Penn State Libraries journal publishing program is overseen by the newly created Penn State Libraries Publishing Board. Such an oversight board should consist of individuals with knowledge of scholarly publishing practices, and preferably OA principles as well. Further, it may be desirable to recruit board members from outside the parent institution for the program oversite board, in order to ensure a balanced view of the program and its needs. The board should be established with a written charter that clearly outlines the duties and powers of the board, and defines the commitments expected of board members.

2.5 Promotion and Reputation

After quality standards are set and proper oversight mechanisms are in place, the final step in creating a successful and quality publishing program is marketing and brand building. The importance of building a well-respected brand should not be underestimated, and once it is established, maintaining the reputation of the brand should be a top priority. Throughout the process of naming a program, creating recognizable imagery (wordmarks, pressmarks, etc.), and

building a social media presence, the goal should be to build interest and trust in the program and its products. With our publishing program in the Penn State Libraries, we were lucky enough to be able to tie the program brand in with the already established and recognizable Penn State brand, and we have developed an imprint to be applied to endorsed works published by the Penn State Libraries. An easy way to quickly gain legitimacy for a publishing program in its infancy is to form an association with the reputation of the parent institution. In some cases, however, the institution's brand reputation may be closely guarded and administered, and proper permissions should therefore be sought prior to the production of any publicly available documents tying the program to the parent institution's brand. At the time of writing, we are currently addressing some of these details to launch a strong, cohesive image for our imprint, as Penn State's brand and university mark has recently undergone a significant change. With the framework for a high-quality OA publishing program in place, we can turn to the technical infrastructure necessary to enable the proposed publishing model.

3 Technical Infrastructure

The major advances in technology that have occurred since the late 1990s have made OA publishing models feasible in large part due to a vibrant community of developers who progressively attempt to automate significant portions of their work in designing, building, deploying, and maintaining extensive content delivery systems. This open-source software development community has produced low-cost, high-quality content management and dissemination platforms that have, alongside commercial solutions, made OA publishing models feasible and affordable.

The Internet, by its very design, has enabled the dissemination of knowledge through well-structured documents and networks. The ability to utilize Internet-based tools to structure and organize documents for efficient delivery, in a manner that is easily consumed by the end user, has resulted in unprecedented augmentation and transformation of long-standing methodologies and modalities. The progressive development and evolution of common web tools has resulted in a free, open-source web developer tool stack that is able to facilitate and simplify traditional publishing activities electronically. Within the last 10 years, we have moved from manually updating files via file transfer protocol (FTP) to securely transferring files into automated systems. These systems deploy code to other systems, which are themselves automatically set up and configured through software that handles most problems without human intervention, through resource reallocation in servers that are virtually allocated. This type of progressive system automation, referred to as Development Operations, has made it possible to build the open-source publishing platforms available today without manually building, checking, testing, or shuffling files; even code conflicts can be mediated automatically within this environment. All of these automated processes greatly reduce the sweat equity, and thus the cost, of the platforms.

The open source community-developed architectural tools supporting the OA initiatives and platforms at Penn State--including VMware, Vagrant, Chef, Jenkins, Linux, Apache, MySQL, Ruby, and PHP, to name just a few--are being used in different combinations and configurations. The exact combinations vary from project to project, and there is not a consensus as to what exactly constitutes the “best” mix of technologies. Focusing specifically on the Penn State Libraries OA journal publishing program, we can examine a variety of employed technologies and demonstrate our approach to tool selection and infrastructure configuration.

The journal publishing program at Penn State Libraries currently utilizes the open source journal-hosting platform created by the Public Knowledge Project (PKP). The platform, Open Journal Systems (OJS), provides a regimented workflow for handling journal articles, from initial submission through their editorial workflow; it also supplies the mechanisms for public consumption of the work. The journal articles can be organized within individual issues of a journal, or on an ongoing basis using a rolling publication model. The platform is also designed to handle many separate journals within a single installation. Initially released as open-source software in 2001, OJS is designed as a fairly standard Linux-Apache-MySQL-PHP (LAMP) stack application. LAMP stack applications were originally deployed by transferring the files via FTP and utilizing a command line to create a database. Today, however, PKP recommends the use of Git, a distributed version control system designed to share code efficiently and obtain the underlying code files from the Github[xv] repository, which stores all versions of the software. This approach facilitates access to the latest stable version, and updates to the code libraries that make up OJS. Of great benefit to digital publishing departments, the above-mentioned OJS process can be automated. Although Penn State's system has not yet fully automated all of these processes, we plan to do so as we establish automated testing for specific features that we deem critical to the functionality of the system.

All of the publishing projects in the Penn State Libraries, including the journal publishing program, run on a virtualized infrastructure, which uses virtual machines instead of dedicated physical machines to host applications (e.g. OJS). The virtual systems are still hosted by a series of physical machines, but given its nature, a virtual infrastructure allows for flexibility as to computing resources. For example, when applications are tasked with additional features, or need to scale due to the amount of usage they are receiving, adding and removing resources

(such as RAM, CPU power, and disk space) results in mere seconds of downtime. This approach allows projects to stay on minimal hardware, and only consume the hardware (and, in-turn, the expense) that is necessary for the application at the moment.

One technological challenge that we have experienced while launching our journal program using OJS is the lack of an effective mechanism for producing a site to provide information about the publishing program itself. While the journal publishing system provides a workable model for handling portable document format (PDF), Microsoft Word Document (DOC) files, and some simple static webpages, we found that it was necessary to create a work-around in order to provide information about the program to our users. Our aim was to produce a landing page providing basic information about the publishing program, a list of our endorsed publications, information about how to publish a new journal with the Penn State Libraries, and resources for our editors. To this end, we used Drupal (an open source content management framework) to provide the visual design and page construction flexibility that we required, while still maintaining compatibility with OJS. Our goal for technological infrastructure is automation, and our Drupal instance is currently administered through Drupal Shell (Drush) in order to duplicate changes made within our development environment onto the public-facing environment. In the future, we also plan to utilize Jenkins and Travis-CI to further automate our processes with automated update and patch deployments to both Drupal and OJS.

The importance of the role the open-source software community has played in furthering the viability of library-based OA publishing programs cannot be overstated. From OJS and Drupal to supporting infrastructure applications (e.g. Apache and Linux), the publishing endeavors of the Penn State Libraries rely heavily on community-built open source software and the collaborative work of an energetic community of talented developers. Without the cost

savings afforded by the use of such tools, publishing, even in the online environment, would be prohibitively expensive, reducing the appeal and perhaps even the feasibility of the modern OA publishing models currently employed by library-based publishing initiatives.

4 Considerations for the Sustainability of Library-based OA Publishing: Social Economics

While we extol the numerous ethical and pragmatic benefits of OA publishing models, we also accept their ongoing challenges, which deconstruct the false dichotomy between online OA publications and traditional print publications by offering significant rationale for the preservation of traditional models--or, at the very least, the exploration of hybrid approaches to knowledge dissemination. Accordingly, it seems favorable for these OA models to exist alongside traditional ones, as part of a constellation of publishing models. This need for a hybrid approach is most apparent in the book format. Print presses contribute to the creation of textual artifacts, which are both beautiful and paratextually significant as objects. As long as readers, writers, and scholars continue to value the codex form – a trend that shows no signs of abating[xvi] – academic institutions should respect, if not actively support, the intellectual process that the production of and engagement with the printed book entails. Ethical considerations aside, publishers and institutions should continue, with some urgency, to explore a variety of publishing models. If the publishing industry, be it physical or digital, is to continue to thrive, the economic realities of any significant shifts in modes of production, dissemination, and reception must be comprehensively understood.

The free distribution of information is cheap, but the technology and resources required to accomplish such distribution are not always so economical. This fact presents issues for both

publisher *and* reader. Although open access publications can be made globally available, accessing electronic works requires bandwidth and screens; the printed word is far less dependent on socioeconomics. Obsolescence is also a concern for text delivered electronically, whereas centuries-old printed books can still be read today. When a book is bound, it can be preserved – and read – for a very long time with relatively limited resources; the same cannot be said of electronic texts, which require sustained investment if they are to achieve longevity. But before longevity can be considered, there is the cost of production itself. Many presses, academic or otherwise, simply cannot switch to open access publishing models because they have operating costs to consider--even in an open source application environment, there remain economic requirements for server space and staff with technological expertise. The journal publishing program at the Penn State Libraries benefits from institutional resources that are not always readily available at smaller academic, or indeed independent, non-OA presses.

Scholars and disciplines that have shown resistance to OA publishing will only embrace its principles when it is offered in conjunction with respect and appreciation for long-standing – and proven – publishing practices. While the ethical and pragmatic issues are frequently conflated, the practicalities of OA are of particular concern to this section of the chapter. It is not enough to adopt OA publishing in principle; institutions and their publishers must strive for models that are feasible and sustainable, achieving longevity without degradation to the work or its reception.

4.1 Open versus Traditional Models

Since the expenses related to publishing OA resources are, by definition, unsupported by a subscription funding model, many alternative approaches to financially supporting OA

publishing have been proposed, including crowd funding, embargoed access, and author fee models. There is little consensus, particularly across differing disciplines, as to what the most viable approach might be. Former Associate Dean for Graduate and Undergraduate Education at Penn State Christopher P. Long, now Dean of the College of Arts and Letters at Michigan State University, raises a pertinent issue in his exchange with Patrick Alexander, Director of Penn State University Press. In a blog post entitled "Coffee, Smart Phones, and Open Access in the Humanities," Long notes the ease with which "established scholars" can advocate for OA publishing, but says that in doing so they must also identify "the wider implications," as well as "sustainable funding models."[xvii] Alexander notes throughout this conversation that we have not yet developed a model that seems ready for implementation across a broad spectrum of disciplines, particularly in the Humanities, and asserts that there is a significant shortage of quantitative data on which to base economic decisions.

The economics of open access are not concerned entirely with finance, but also with what Martin Paul Eve, Senior Lecturer in Literature, Technology, and Publishing at Birkbeck, University of London, terms "the exchange of symbolic capital."[xviii] For Eve, there are "many different complex and intersecting social and financial economies of value that make up the landscape," such as prestige and quality, in addition to some financial complexities (which Alexander also mentions) that are specific to the Humanities. Having addressed some of these issues, Eve's conclusion is telling: "[I]t is not a straightforward task to appraise the changes that will be engendered by a switch to supply-side payment systems or that green [OA] will have upon the current subscription mode … the road ahead is not entirely clear."[xix] Indeed, since the road ahead is not entirely clear, we as producers and consumers of content must be thoughtful and reflective as we proceed towards the future of publishing. The relationship between form and

content, whether seen from a cost, disseminative, or scholarly perspective, must always be considered and appreciated. Commentators often remark that the Sciences can avail themselves of open access because they have higher levels of funding, but it must also be pointed out that scientific content is very different from content in the Arts and Humanities. In the STEM disciplines, scholarship is inclined towards arguing key points using succinct interpretations based on generally quantitative findings. Timing is sensitive, with many publications presenting the results of isolated experiments or offering iterations of other research. Open access seems to favor those fields, where one must publish findings quickly or see the scholarship grow stale. In the Humanities, scholars tackle subjects that are often ambiguous by nature, and thus extrapolations and interpretations are generally lengthier, with time sensitivity seemingly less of a factor.

It is not just the scholarship that differs in the Humanities fields – the audience is also different. At the annual convention of the Modern Language Association, attendees still flock to the book exposition. Scholars in the Humanities value printed texts, and oftentimes have little concern for public impact. This is not necessarily a negative trend; esoteric subject matter will always have a smaller audience, and if that audience favors a particular mode of delivery, then we as publishers should be mindful when proposing its transformation. As already noted, it is not just about financial transactions--we must consider an amalgam of values central to the exchange between writer and reader. This is not to say that the Humanities should not seek to reap the benefits of OA publishing models, but rather that any publication model needs to make sense, financially and otherwise, before being adopted for a particular subject-matter.

4.2 Hybridity at Penn State

Operational realities often result in the privileging of a particular form of dissemination, be it print or digital. Danger arises when such privilege is the result of myopic sentiments that do not acknowledge the value of a variety of publishing practices. The scholarly and public impact of OA digital publications should be recognized, but no more so than the emanations of print, which remain as significant today as they have been for thousands of years. When considering vehicles for delivery and reception, all media have specific benefits and drawbacks that should be examined--not in isolation or contest, but rather in relation to the medium's aggregate value as a system for sharing. At Penn State, we are fortunate to face relatively few operational restrictions, and have thus been able to implement hybrid publishing models that harness an array of potentials across the modal spectrum.

In his exchange with Long, Alexander remarks that success stories, if not reproducible, do not constitute a model, and underlines the lack of quantitative data necessary to "build models that work in multiple contexts." This notion of "multiple contexts"[xx] – that the relationship between content and form remains in flux – is fundamental to the approach that has been adopted at Penn State. There are instances where we have harnessed the infrastructure of digital library-based publishing to offer peer-reviewed journals that adhere to free culture principles. Two such cases are the journal *Digital Literary Studies,*[xxi] which is freely distributed under a Creative Commons Attribution-NonCommercial 4.0 International License, and Long's *Socratic and Platonic Political Philosophy: Practicing a Politics of Reading*, published by Cambridge University Press and supplemented with an enhanced digital edition.[xxii] Alexander describes publishing as "a relational enterprise," arguing that publishing ecosystems must develop "awareness of" and "a relationship with" scholarly communities that are gathering influence.[xxiii]

As an example, he points to the Digital Humanities, a cohort with a high level of OA advocacy. But it is not simply about keeping up with the new, or jettisoning those practices that are no longer deemed relevant. It is about transformation--combining forms in a fashion that is appropriate for the knowledge they seek to mobilize. Long labels his book's enhanced edition as "an experiment in performative publication," justifying the model thusly: "A publication is performative when its mode of publication enacts the argument for which it advocates."[xxiv] So while his OA component is designed to enable this essential readerly performance and critical response, the print edition, a form that remains highly valued by the relevant field, still acts as the static yet vital gateway between the author as expert and his peers and students as readers. Cambridge does not privilege the materiality of one medium over the other, but rather affirms that they work in complement to each other, so that the work benefits from the potentialities of both publishing models. Alexander aptly summaries this effort:

> Anyone wishing to be a part of the future world of scholarly communication must recognize that the old world of publishing has been forever altered, even though it seems likely that elements of "publishing"—as has been true since the early days of writing—will continue.[xxv]

University presses often have a desire and responsibility to protect the book, but as a result they face financial restrictions that large institutions with OA initiatives often do not need to consider. The Penn State Libraries publishing initiatives, liberated from these constraints, can explore the disseminative potential that technology can offer. As with the works created by these hybrid projects, this dynamic does not mean that the producers are in competition; on the contrary, it means they have the opportunity to merge in order to ensure that form and content are appropriately combined across any chosen contexts.

Collaborations between the Penn State University Press and the Penn State University Libraries have been ongoing for several years. In 2008, the Press partnered with what was then

the ODSP in offering open access to a portion of its respected Studies in Romance Literatures series,[xxvi] both to gain insight into the motivations of consumers of OA content, and to support the University's OA agenda.[xxvii] Since then, further collaborations have emerged, most recently a forthcoming collection of essays intended as the canonical methodological resource for students, scholars, and practitioners interested in employing computational methods for purposes of literary analysis. The volume is intended to bring together leading authorities in the field of computational literary criticism, with a print edition detailing the theoretical underpinnings of the key methodologies. Combined with this print work will be an OA digital component offering the practical materials – be they pedagogical instruments or complete codebases – necessary to implement these techniques. The relationship between form and content is reflected in the publishing model: the longevity of the methodologies, which once established tend not to change, will be bound by the codex, while the supplementary digital materials, which by their nature are subject to change if they are to avoid obsolescence, will be facilitated on the Web.

This model is not intended as reification of the false dichotomy between print and digital, theoretical and practical; it is merely a product of our desire to capitalize on the strengths of existing structures at Penn State while producing a set of elements that contribute to an aggregate publication suited to the volume's interdisciplinary content. The approach allows for the publication of varying content types, across media that are suited to their specific nature: the print edition will provide the understanding, the digital edition the means, with both components working in concert. As the issue of redundancy is not as applicable to the content that will appear in print, we can avail ourselves of the expertise for which Penn State University Press has an established reputation – producing a beautiful, scholarly book that will appeal to literary scholars, an audience that values this form for a multitude of reasons. Code must be updated, and

this is where the partnership with the Penn State Libraries publishing initiatives comes in, as it allows us to offer these elements freely, and in a form that is conducive to iteration. More important in this regard is the fact that this model is sustainable across each facet of the organizational structure. For the Press, the cost of the print edition will be offset, as usual, through sales, while the OA content is supported by the University Libraries' well-established infrastructure and resources. Furthermore, the collaboration will present new opportunities, allowing for the exploration of a publication model that sees a print book "promoted" through supplementary OA content – a first for Penn State – while the digital offering will be underpinned by the scholarly rigor and prestige of the Penn State University Press.

5 Conclusion

The recent passage of numerous governmental and institutional OA mandates around the globe clearly demonstrates that open access to research and academic output is rapidly gaining momentum. OA principles are being embraced by many libraries, researchers, authors, and the general public. However, traditional academic publishers, which have long provided the infrastructure upon which scholarly communications rely, have largely been restricted from shifting to affordable working models that accommodate these principles. Without the support of the traditional publishing infrastructure, OA advocates face a steep challenge in successfully implementing their vision for the future of scholarly communication. It is in this context—with open access principles needing to be translated into pragmatic practices—that academic libraries can find increasing success in taking on the new role of academic publisher, contributing to a system of infrastructure that is capable of sustaining open access scholarship.

6 Appendix 1: Useful Resources for Library-based Publishing

Resources:

- Advancing Research Communication & Scholarship (http://commons.pacificu.edu/arcs)
- BePress Digital Commons (http://digitalcommons.bepress.com/repository-software/journals/)
- Committee on Publication Ethics (http://publicationethics.org)
- Creative Commons Licenses (http://creativecommons.org/licenses/)
- Drupal (http://drupal.org)
- Force11 (http://force11.org)
- How to Start an Open Access Journal by Hybrid Publishing Lab (http://hybridpublishing.org/files/2014/07/HOAJ-POSTER-final-web.pdf)
- Library Publishing Coalition (http://librarypublishing.org)
- Open Access Network (http://openaccessnetwork.org)
- Open Access Scholarly Information Sourcebook (http://openoasis.org)
- Open Access Scholarly Publishers Association (http://oaspa.org)
- Open Journal Systems (http://pkp.sfu.ca/ojs)
- Scholarly Communication Toolkit from ACRL (http://acrl.ala.org/scholcomm)
- Scholarly Publishing and Academic Research Coalition (http://sparc.arl.org)
- Society for Scholarly Publishing (http://sspnet.org)
- WordPress (http://wordpress.org)

Standards:

- Directory of Open Access Journals (http://doaj.org/publishers)
- International DOI Foundation (http://doi.org)

- International Centre for the registration of serial publications (http://issn.org)
- Presentation & Identification of E-Journals, NISO RP-16-2013 (http://niso.org/apps/group_public/download.php/10368/rp-16-2013_pie-j.pdf)
- Presentation Guidelines for Serial Publications, United States ISSN Center (http://loc.gov/issn/basics/basics-whatsinaname.html)
- Professional Editorial Standards, Editors' Association of Canada (http://editors.ca/resources/eac_publications/pes/index.html)

7 Appendix 2: Examples of Use Criteria for Penn State Libraries' Journal Publishing Program

Criteria for Basic Use (OJS software, basic OJS training, digital preservation):

- The publication must have a Penn State affiliation (e.g. the publication's editor is a Penn State faculty member).
- The publication must be an open access publication without charging author fees.
- The publication must have reasonably stable resources.
- The publication must contribute to scholarly knowledge.
- The publication must plan to publish a least one issue and 5 articles per year.

Additional Criteria for Advanced Use (basic + DOIs, ISSN, in-depth OJS training, editorial management advice):

- The publication must serve a specific scholarly purpose.
- The publication must have very stable resources and support (human and otherwise).
- The publication must have a strong editorial structure.

Additional Criteria for Endorsement (use of the Penn State Libraries name as publisher of record, and acknowledged affiliation, and marketing assistance):

- The publication must have an editorial board or other governing body whose members are experts in the fields of the journal's scope.
- The editorial structure and contact information must be clearly visible on the journal's website.
- Content must be peer reviewed and the review policy must be clearly visible on the journal's website.
- The publication must have a professional "look-and-feel".
- Instructions to authors must be clear and visible on the journal's website.
- The publication must use DOIs and have an ISSN.

8 Notes and References

[i] For more on institutional OA resolutions and policies, see http://roarmap.eprints.org.

[ii] During the recent Ebola crisis, the media cited several experts who blame paywalls for impeding access to scientific literature that may have been helpful to aid workers in West Africa. See, for instance, Adam Lewis's article from May 11, 2015 in the *Huffington Post*, entitled "Ebola, Liberia and the Cognitive Dissonance of Development Research," http://www.huffingtonpost.com/adam-lewis/the-cognitive-dissonance-_b_7256058.html.

[iii] http://valley.lib.virginia.edu.

[iv] http://www.letrs.indiana.edu.

[v] http://webapp1.dlib.indiana.edu/vwwp/welcome.do.

[vi] Lippincott, Sarah K. (2016). *Library Publishing Directory 2016*, http://www.librarypublishing.org/resources/directory.

[vii] Maron, Nancy L., and Sarah Pickle. (2013). "Searching for Sustainability: Strategies from Eight Digitized Special Collections," Washington, DC: Association of Research Libraries (November 2013), http://www.sr.ithaka.org/research-publications/searching-sustainability. See also related Ithaka S+R publications on sustainability, available at http://www.sr.ithaka.org/research-publications/2.

[viii] More on lost opportunities for coordinating scholarly publishing among multiple units on campuses can be found in Nancy L. Maron and Sarah Pickle's, Sustaining the Digital Humanities: Host Institution Support beyond the Start-Up Phase. New York: Ithaka S+R (June 2014), www.sr.ithaka.org/publications/sustaining-the-digital-humanities.

[ix] Eaton, Nancy. (2015). Email to Sarah Pickle, April 14, 2015.

[x] Ibid.

[xi] Dewey, Barbara. (2015). Interview with Sarah Pickle. Personal interview. State College, PA, April 13, 2015.

[xii] University of Pittsburgh, University Library System E-Journal Publishing, http://library.pitt.edu/e-journals.

[xiii] We are currently reviewing the agreements and creating a single agreement with checkboxes for provided services, both to simplify the legal documentation used by the program and also to increase flexibility.

[xiv] Beall, Jeffrey. (2013). "The Open-Access Movement is Not Really about Open Access." *Triple C* 11.2, http://triplec.at/index.php/tripleC/article/view/525/514.

[xv] Github http://github.com/pkp/ojs.

[xvi] Baron, Naomi S. (2015). *Words Onscreen: The Fate of Reading in a Digital World*. Oxford: Oxford University Press.

[xvii] Long, Christopher P. (2014). "Coffee, Smart Phones, and Open Access in the Humanities," Dec 14th, 2014. http://www.cplong.org/2014/12/coffee-smart-phones-and-open-access-in-the-humanities.

[xviii] Eve, Martin Paul. (2014). *Open Access and the Humanities*, Cambridge: Cambridge University Press. pp. 43.

[xix] Ibid. pp. 84.

[xx] Long, Christopher P. (2014). "Coffee, Smart Phones, and Open Access in the Humanities," Dec 14th, 2014. http://www.cplong.org/2014/12/coffee-smart-phones-and-open-access-in-the-humanities.

[xxi] http://digitalliterarystudies.org.

[xxii] Long, Christopher P. "Digital Dialogue". http://www.cplong.org/thedigitaldialogue.

[xxiii] Alexander, Patrick H. (2014). "Teaching an Old University Press Publisher New Tricks: Living in the Present and Preparing for the Future of Scholarly Communications", *The Journal of Electronic Publishing*, 17.2. http://quod.lib.umich.edu/j/jep/3336451.0017.202?view=text;rgn=main.

[xxiv] Long, Christopher P. "Digital Dialogue". http://www.cplong.org/thedigitaldialogue.

[xxv] Alexander, Patrick H. (2014) "Teaching an Old University Press Publisher New Tricks: Living in the Present and Preparing for the Future of Scholarly Communications", *The Journal of Electronic Publishing*, 17.2. http://quod.lib.umich.edu/j/jep/3336451.0017.202?view=text;rgn=main.

[xxvi] http://www.libraries.psu.edu/psul/digital/romancestudies.html.

[xxvii] http://www.aaupnet.org/news-a-publications/aaup-publications/the-exchange/the-exchange-archive/summer-2008/585-penn-state-press-and-libraries.