

Understanding the Audience
of the
Public Knowledge Project's
Open Source Software

Findings from the Planning Grant
from the Laura and John Arnold Foundation

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Nancy L. Maron
BlueSky to BluePrint



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EXECUTIVE SUMMARY

The Public Knowledge Project (PKP) has been a cornerstone of the open access world since John Willinsky and his colleagues created it in the late 1990s. Open Journal Systems, the open source software that PKP first launched in 2001, has permitted thousands of users in over one hundred countries to produce scholarly journals using the freely available software. Today, Open Journal Systems software, or OJS, is used to publish over 10,000 journals worldwide, the vast majority of them open access.

To support this work, PKP has successfully assembled a reliable combination of grants, donations, revenues from PKP Publishing Services, and in-kind support in addition to strong partnerships from both Stanford and Simon Fraser University, where the PKP is part of the SFU Libraries. And yet, the leadership team recognized that the landscape had started to change and that there are competitors emerging. While there are many ways PKP would like to expand their role in supporting open access, their team is very small and already working well beyond capacity. To grow as quickly as their users need them to, PKP's directors realized they would need to take more active steps to permit them to build PKP in a way that supports their ongoing operations, while continuing to invest in ways that help them evolve to support the changing needs of their users.

In 2017, the PKP team received generous support from the Laura and John Arnold Foundation, in the form of a planning grant to support research to develop a pathway to sustainability and greater support for open access. The directors engaged research and consulting firm BlueSky to Blueprint to work with them to examine the world in which PKP operates today, as well as the PKP team's internal structure, and to begin to map out a plan for the future. The planning grant took place over the course of 6 months, from October 2017 through March 2018, and featured at its core a "community consultation," designed to bring in a wide range of voices to inform PKP's next steps.

A Community Consultation

The community consultation offered a range of ways for the PKP team to hear from and interact with the communities it serves. This phase included:

- **Creation of an Expert Advisory Panel** representing those with deep knowledge in issues concerning open access publishing, open source development, and the competitive space in which PKP operates.
- **Interviews with 50 individuals**, both experts in the field and those who interact directly with PKP and its software: current OJS users from different institutional settings; current and former PKP Publishing Services clients; and some who had engaged in some way with OJS, but had ultimately chosen an alternative.
- **Conference presentations** offering background on PKP and progress reports on the grant, including at the Charleston Library conference in November 2017 and the CNI Fall Membership Meeting in December 2017.
- **Development and publication of a summary report** to be issued by PKP's directors, outlining future directions and seeking public input on these ideas.

In addition, the PKP Directors will be sharing the vision they have developed at a range of meetings taking place throughout Spring 2018, including OPERAS, CNI Spring Membership Meeting, the Library Publishing Forum, and ELPUB 2018: International Conference on Electronic Publishing.

Findings

The interviews with experts, current and former users of OJS and its competitors, and current and former clients of PKP Publishing Services offered a sense of current strengths and weaknesses of PKP and its offerings, and opportunities for future directions.

Among the strengths noted were:

- **A deep appreciation, respect, and support for PKP's leaders and mission.**
 - Many interviewees voiced appreciation for PKP's founders, directors, and staffers.
- **The value of PKP's open source software.**
 - There are many, both in technology and librarian roles, who feel strongly about supporting community-based efforts, when possible.
 - OJS, largely because it is open source, is economically feasible for many institutions that cannot afford commercial alternatives, but who have staff for a basic level of support.
 - There was praise for the flexibility of OJS to suit a range of needs, in general, and appreciation for some elements in particular: the peer review piece of OJS, for example, was often cited as being a real value, something difficult to do well.
- **A huge base of global users in over 100 countries around the world.**
 - Recognition of the opportunities that OJS and the PKP afford many researchers outside the US and Canada, and specifically in the Global South.

But the research also pointed out several challenges or areas the PKP team will need to address:

- **Frustration with OJS and its pace of innovation.**
 - A lingering perception that OJS is dated in appearance and not able to support certain types of media. Some of these perceptions may no longer reflect the offerings of OJS3, the perceptions alone are sufficient cause for concern.
 - Slow migration of users of earlier releases (OJS2) to the new OJS3 which could ultimately alleviate many of these critiques.
- **Low of awareness of PKP's full range of offerings.**
 - Several interviewees were not aware that PKP offers Publishing Services, and for a fee can customize, host, and otherwise support OJS.
 - Many were unaware of other open source offerings and services from PKP
 - Those who were aware of OJS were often unaware that it is fully compatible with a range of types of publishing, and can support fee-based, as well as open access models; multi-journal as well as single-journal publishers.
- **Perception of a fairly "closed" open source project.**
 - Some felt that PKP did not actively encourage code contributions from the community.
 - Some past and potential partners noted challenges in seeing collaborations come to fruition.

Recommendations/Next Steps

There are some key takeaways from the research that suggest some very specific directions, as the PKP team determines its best approach to ongoing financial support and growth.

- **Becoming user-focused.**
 - PKP as a team will need to take a more proactive approach to managing its relationships with users, clients, and stakeholders of all types. In the open source space, this may mean public outreach, to educate potential clients and users about what OJS can do for them,

and to incentivize code contributions. In the Publishing Services space, this quite literally means developing a robust sales and marketing strategy.

- **Embracing the community and key partners, even more.**
 - Open Source software development, at the heart of the PKP enterprise, needs to be “opened up” more than it currently is, to make better use of contributions of all sorts – whether feedback from users (authors, publishing managers, editors), from programmers, and from leaders of other organizations.
 - Strategic partnerships need to be strengthened. Whether they yield financial or in-kind support, they will require more focused attention than they have received in the past.
- **Rethinking the organizational structure to support growth in both the open source and services space.**
 - PKP will need to institute a new organizational structure, that understands three types of activities that are distinct, if closely related: software development; publishing services around that software; and community outreach, education, and research. Those three “pillars” – software, services, and outreach/education/research can and should be seen as mutually reinforcing: for example, the research undertaken ought to provide value to PKP’s software users, and ideally to inform the future development paths of PKP software; the client work of publishing services can be prioritized to support the development of the main OJS code base, so that all open source users can benefit, as well.

This report represents the findings from the landscape and audience research conducted, and will be used as the basis of extended discussion with the PKP team and its advisors, as a means to develop plans for its further growth. The full planning grant includes a financial analysis of the current PKP organization and PKP Publishing Services in particular; that is not part of this initial report. The recommendations here are intended as thought provoking, and represent the opinion of the report’s author. PKP’s Public Report, *Reflections and Directions After PKP’s First Two Decades*, represents the chosen path of the PKP team and is available online at <https://pkp.sfu.ca/reflections-and-directions-2018/>.

ACKNOWLEDGMENTS

The research conducted for this report was only possible thanks to the generosity of the several dozen people who willingly shared stories, history, opinion, insights, and suggestions with the researcher. This sort of engagement, to be at all useful, requires a high level of candor on the part of the interviewees and a high degree of open-mindedness and receptivity on the part of the client, and I can attest that both were present in abundance. I hope my role as interpreter, analyst, and “translator” has helped to make this a productive undertaking on all sides.

INTRODUCTION

When John Willinsky and his students first created the Public Knowledge Project in 1998, they wanted to reduce cost as a barrier to creating and consuming scholarship. One strategy was to create Open Journal Systems (OJS). This open source free software, which remains available to anyone with an internet connection and some server space, was launched in 2001. In the years since, OJS has been used to publish more than three million open access articles in over 100 countries. The number of journals using OJS has consistently grown every year. In 2017, nearly 10,000 journals around the world were reported to be published using OJS. By way of comparison, the commercial publishing giant Elsevier has a roster of 2,500.

Today, publishing activity flourishes in many places, and as the desire to publish has moved beyond the established publishing houses, so has the need for the education, support and technology to do that. In addition to publishing houses, university presses, and scholarly societies, university library programs, academic departments, and independent scholars undertake publishing activities in greater numbers.

As the environment has continued to evolve, if PKP is still a leader it is no longer alone in the field. As the ability to publish has expanded far beyond a small number of acknowledged scholarly presses to include a great diversity of types of publishing and types of publishers, solutions to meet their needs have begun to fill the landscape. Competitors now come in all flavors – commercial and non-profit, open source and proprietary. They may address just one aspect of publishing work, or offer support with the entire “publishing workflow,” from submission through editorial work and distribution. Understanding both the opportunities and the very real challenges (and challengers) that exist, is an important first step as the PKP team considers its future path.

In a sense, this competition only underscores the demand for publishing solutions and publishing services: with a more ecumenical definition of who a publisher is, being “use-case agnostic” is not enough. The absolute openness that is a trademark of open source projects will need to be supplemented with a deep understanding of who those users are and what they need. Just offering the code freely will not be enough in a landscape where providers are carefully targeting use cases and user segments.

Among the most important question the PKP team faces today is: who is this for? The research conducted as part of the planning grant from the Laura and John Arnold Foundation is intended to support the PKP team in defining its best position in this more crowded space, to provide feedback from key players, OJS users and potential users, so that they can determine where to best devote their energies to have the greatest impact.

Methodology

The project began in October 2017, with the creation of an Expert Advisory Panel, representing those with experience in issues concerning open access publishing, open source development, and with first-hand knowledge of the competitive space in which PKP operates. The group met via web conference on November 3, 2017 to review the project plan and will be reviewing the findings and the PKP final recommendations. A full list of advisory board members is included in Appendix A.

From late November 2017 through January 2018, interviews were conducted with 50 individuals, including:

- Experts in the field, who could offer insight and context for the various spaces the PKP operates in. This included leaders of not-for-profit and commercial publishing initiatives related in some

way to PKP's core business, thought leaders in open access, directors of programs operating in regions important to PKPs current user base, and current and past strategic partners.

- PKP Publishing Services Clients
- OJS users, who could comment on experiences engaging with OJS in some way.
- OJS "non-users" – those who had considered, evaluated, but ultimately chose not to adopt OJS.

Many interviewees were able to speak from more than one vantage point. The list of those interviewed is included in Appendix B.

The interviews were conducted via phone or web, via Skype, Google Hangout or similar means. Each was approximately 60 minutes long, though some were shorter and a few were longer. Some included follow up exchanges where additional materials were referenced. The interviews were semi-structured, in order to permit the interviewer to pursue important directions that emerged during the course of the conversation. The interview guides are included in Appendix C.

This report represents the findings from the research conducted, and will be used as the basis of extended discussion with the PKP team and its advisors, as a means to develop plans for its further growth. The full planning grant includes a financial analysis of the current PKP organization and PKP Publishing Services in particular; that is an internal document and not part of this report. The recommendations here are intended as thought provoking, and represent the opinion of the report's author. The Public Report, to be issued in March 2018 for public comment, will represent the chosen path of the PKP team.

FINDINGS FROM RESEARCH PHASE: SOFTWARE IN SEARCH OF ITS AUDIENCE

THE LANDSCAPE

When PKP first created OJS, it was not only visionary, it was unique. Today, while it may still be visionary, it is no longer the only option for people who wish to publish outside of the established commercial channels. There are many more types of people engaging in publishing activity, and many more types of services and products intended to help them.

Several trends seem to suggest that the need for low-cost, high quality publishing solutions will only increase:

- **Increase in library publishing activity.** The Library Publishing Coalition released its 5th annual Directory in 2017, with entries provided by 125 library publishing programs, up from 118 the year before. Eighty-two percent of the reporting institutions reported that their publishing is partially or entirely open access; 49% publish only Open Access works.¹
- **Disappointment with commercial solutions.** The acquisition of bepress by Elsevier in August 2017 is the latest acquisition to have sparked vigorous discussion among those in the library publishing community concerning the value of community-owned publishing infrastructure.
- **Large, untapped market in many underserved parts of the world, including the Global South.** Open source software offers real benefits for impact, thought models of support are less obvious.
- **Appetite to explore support of “community-based” solutions.** David Lewis’ “2.5% Solution” and the recent SPARC-hosted meeting at CNI in December 2017 are part of ongoing discussions in the community intended to determine how to financially support critical elements of publishing infrastructure.

The discussion that follows is intended to explore the current and emerging landscape in which PKP and its core software offerings – OJS and Open Monograph Press (OMP) – are operating, to support the PKP management team in evaluating the opportunities and challenges that may lie ahead.

Key Players in the Field: Competitors or partners?

At the forefront of any discussion of the landscape needs to be an understanding the key players operating in this space, and specifically the competitive forces that could have an impact on PKP’s future success.

If one takes a narrow view, there may be no “direct competitors” to PKP itself, which is a unique collection of open source development, research, and publishing services. And there are just a few direct competitors to PKP’s cornerstone software product, Open Journal Systems (OJS), which offers journal publishing manuscript management from submission to peer review, to display of the final published article: Clarivate’s ScholarOne comes to mind, as does Aries. Neither is open source, so a very narrow view might suggest that if what we are examining is “open source manuscript management and peer review systems” then perhaps OJS is indeed without competition.

¹ Library Publishing Coalition, *Library Publishing Directory 2018*, page ix. https://librarypublishing.org/wp-content/uploads/2017/03/LPC_LPDDirectory2018.pdf

And yet, this narrow approach to understanding competition is not particularly helpful. PKP's sustainability model today relies on revenues from PKP Publishing Services (PKP/PS), the unit of PKP that supports publishers by setting up and hosting OJS instances, customizing the set up and front-end display, and assuring the security and preservation of the content in their journals. If this service-based business is to continue, understanding the other options that PKP/PS clients have available to them is critical.

Today, the world of publishing includes actors from commercial, not-for-profit, and academic settings; they may be taking on a piece of the publishing workflow, or attempting to take on all of it; they may see themselves as offering tools to publishers, platforms for publishers, or to being publishers themselves; they may or just a collective of scholars and programmers. Any entity can be a competitor, if potential customers are turning to use them. By that standard, depending on the use case, OJS has several types of competitors and potential competitors.

Below is one way to think about them that may be useful in considering next steps.

Open Journal Systems describes itself as a “journal management and publishing system” that supports “every stage of the refereed publishing process, from submissions through to online publication and indexing.” The system does not support online collaborative authoring or editing, but helps publishers to traffic the progress of a manuscript through the various stages of workflow that need to take place from the time a manuscript is acquired through the time it is presented as a finished document online. Some users of OJS make use of all the available elements of this workflow from submission to display. Others just need it for the display piece and upload finished articles. Still others appreciate its management of the peer review process, but prefer to send final articles elsewhere for publication, where other publishers/platforms upload their finished work.

Direct competitors to OJS

Although never released as OSS, bepress and its repository, Digital Commons are often seen as direct competitors to OJS for their ability to offer a journals publishing solution. Because of bepress' origins in the academic community, its focus on open access, and its OAI-PMH metadata standards allowing repository interoperability, it was seen by many as being “of the community.” This position was deeply shaken by its acquisition by Elsevier in August 2017, which has been interpreted by some in the library community as a betrayal. As of February 2018, there are still active discussions among those in academic libraries concerning strategies to move away from bepress.

Other offerings focus on a certain aspect of what OJS offers. For example, ScholarOne, Scholastica, and Aries Systems all offer workflow tools to help publishers with the submission, tracking, and peer review of manuscripts. Other offerings, such as VTeX, are more specialized, offering support for articles using LaTeX.

There are also a few emerging open source publishing options on the horizon that are poised to be directly competitive with OJS. Janeway, software developed initially to support the Open Library of the Humanities, has launched a module that permits journal publishing. As part of its PubSweet open source

software for publishing, the CoKo Foundation has launched Editoria, for book publishing, and is developing xpub, a journals platform. VEGA is focusing on supporting multi-media content. Right now, these are all framed as pure OSS projects. Though none has a service offering at this time, Janeway's founder is not ruling it out in the future.

Direct competitors to PKP/PS...or partners?

As an open source project, OJS is intended to be freely downloaded and used in any way people see fit. In addition to the many users who download the software and install it locally for their own personal use, there are people and organizations that have developed services based on OJS.

On one hand, this is entirely within the mission of OJS; on the other, as PKP Publishing Services has developed over the past few years, this effectively means that some users of OJS become inadvertent competitors for PKP Publishing Services.

Understanding the nature of this competition is important. Some players represent a threat to the success of PKP Publishing Services; others could and should be viewed as partners and should be an explicit element of PKP's sustainability strategy. Some illustrative examples are below:

Commercial service providers

- Ubiquity Press is a for-profit entity built using OJS and offering a service layer to support publishers. Operating on open source software is a key value Ubiquity expresses to its client community, and this is made possible by its use of OJS.

Academic service providers

- Universities, often library-based scholarly communications groups or library technology departments, also offer services for those who wish to publish journals but need help with set-up and hosting. There are several academic institutions that offer services on top of their own OJS installations. Some do this as a service for those on their own campus; others have created businesses and accept a range of clients. In all cases, the organizations that do this either (1) benefit substantially from the savings of using OJS in lieu of other fee-based services; or (2) benefit directly from fees they collect from clients, in much the way PKP Publishing Services does. Both these scenarios demonstrate the value that open source software is having for many academic communities. Some examples of campuses doing this quite successfully include Indiana University Bloomington, University of Pittsburgh, University of Alberta, and University of Technology Sydney.

In one sense, these actors literally compete with PKP Publishing Services: they take OJS and offer services around it to permit others to create journals. And yet, this sort of re-use is well within the mission of PKP, and precisely the behavior that PKP wants to encourage – having others build upon their work, with the aim of extending the ability to publishing throughout the academic community.

That said, given how valuable OJS is for these institutions, PKP has a very loose relationship with many of them. While some support PKP as partners, not all currently do. Several organizations are running substantial publishing programs and devoting staff time to creating their own service offerings. In some cases, the relationship involves contribution back to PKP, but these ties are often not binding and require labor-intensive management for renewals.

These are just a few examples, and there are doubtless many more that exist and where there are no direct lines of support flowing back to PKP. When considering sources of support, whether a financial contribution for membership, a donation to create an endowment, or the pledging of developer time, these benefiting institutions should be at the top of the list of places to approach. The benefit gained by the organization – which could be quantified by their savings in hosting fees, for example – should be a motivator to encourage contributions back to PKP, to support its ongoing development.

Publishing-platform-as-a-service (white label services)

In this category are commercial solutions considered “publishing platforms” with a focus on offering a consumer-facing interface that drives traffic and sales, such as Highwire and Atypon. They support multiple content types, including journals, books, reference works, databases, and other types of professional and scholarly content, including digital-only media such as audio and video. This is not a workflow tool for those who need to manage content as it is created, but a configurable display platform for displaying and monetizing content. Nor are they publishers themselves; they are B2B solutions, providing a platform to publishers of original content.

While these may seem very different from what OJS offers, in a few instances, these high-end fee-based alternatives have in practice been direct competitors to PKP/PS; one current PKP/PS client has recently migrated their journals from Highwire to OJS via PKP/PS. This is a reminder that for scholarly societies, an alternative to for-profit providers would be welcome, both for cost and mission-based reasons. But not at the expense of functionality.

In addition, while the many of the features these solutions offer would probably be welcome – a focus on display and discovery certainly benefiting a push for “impact” for even the most fervent OA supporter – the language of sales and the realities of commercial pricing models have tended to keep these options out of reach for less well-funded publishers, and those without any clear revenue streams of their own.

It is worth noting that in addition to the existing major technology platforms in this space, a relatively recent trend seems to be having open access publishers offer “publishing platform as a service,” a way to leverage their own platforms to support other publishers who don’t want to build out their own or to piece together various components. In these cases, client publishers need only worry about creating the content; these solutions will display, handle discovery and commercial transactions for them. Some entrants into this space include open access publisher Hindawi, independent start-up Science Open, and Ubiquity.

Conclusions

- While there are many types of “competitors” to OJS, a first challenge is to find ways to create a **virtuous cycle of support**, so that those who are benefitting most can also help support future development of the software, in whatever way best suits them. In some cases, this could mean financial support or sponsorships or developer time; and in all cases, public acknowledgement that journals are run using PKP’s OJS.
- **Competitors are now offering elements of publishing process that extends before and after what OJS offers.** This can include elements of authoring, format types supported. It can include editorial services and customer service that goes beyond what PKP/PS typically does. And post-publication, platforms that facilitate discovery, encourage usage, and offer metrics, are appealing for authors, editors, and publishers, as OA metrics continue to evolve.

- Today, competitors to OJS have gotten quite good at not just delivering a piece of software, but at **addressing the needs of a certain type of user** – whether a publisher or a researcher. They define the scope of their offering in a way that signals their focus on serving the needs of a specific use case, or a few. Some users are in need of a way to traffic a manuscript from stage to stage; others just need a great place to display finished content. Competitors are building with very clear use cases (and specifically, customers) in mind, and often deeply involved in the building process. The language of “users-first” is deeply ingrained in all the communications they deliver.
- **The landscape is very fluid, with people making (purchase) decisions now in a landscape that is crowded with options.** This will get even trickier going forward, with several potential OSS competitors are scheduled to launch within the next 12 months. That said, this moment cries out for PKP, and PKP/PS in particular, take any and all steps possible to clarify their service offering- who it is for, what it can offer, how it stands out from other options, how it easily integrates with existing partners. Potential clients may not be fully aware of the offering, or have misconception about its limitations or capabilities.

COMMUNITY CONSULTATION

PKP is still very much in the process of defining its understanding of its users. With a widely distributed user base, and little obligation on the part of users to remain in contact with the organization, obtaining hard data on open source users can be difficult. The aim of this phase was to better understand who uses OJS and who might be potential customers for PKP’s software and services.

Our work involved:

1. Developing a profile of current PKP Publishing Services client base and OJS users
2. Qualitative study of key segments of OJS users, including PKP clients and OJS users from a range of publishing settings.

Sections below outline the profile of users of OJS and clients of PKP/PS then attempt to summarize some key themes that emerged throughout the interviews.

Open Source Software

Open source users, by definition, can be anyone, anywhere, doing anything (or nothing) once they download the software. This is part of the charm of this model but can make it difficult to accurately assess the issues at play with those communities.

Data gathered by the PKP Directors through annual online surveys suggests that in terms of sheer numbers, most OJS users are:

- Located outside of North America
- With high concentrations in Brazil, Indonesia, Spain and Columbia
- Publishers of a single journal

Most of what we know about OJS users in the field comes from OJS-run surveys, feedback through the support forum, and data the PKP team gathers concerning remote installations. Many of the current users are only known at arm’s length. Finding ways to bring this large, global community closer together could have real benefits, both for the users themselves and for the PKP.

Institutional users

One important use case for independent OJS installations is as a publishing platform for higher-education publishing. It is fairly common for universities, colleges, research centers and other academic units to install their own version of OJS and run it themselves. Some use OJS for just student-run journals (University College London is a case in point) while sending more formal publishing to other service providers. Others (Indiana University) run faculty-, student-, and scholarly society-led journals on OJS. Most people we spoke with used only or primarily OJS (and not OMP or OCS), but their publishing programs often include a wide range of outputs, including journals, monographs, Open Educational Resources (particularly open textbooks) and ETDs. And not everyone uses the entire OJS workflow; some use just the peer review piece while others create and traffic manuscripts using their own systems (or no system) and just uploading the finished files to display online.

Some do this without any contact with PKP. Others maintain closer ties, whether as financial supporters, recently known as “sponsors” and now as “sustainers.” Some are willing to support PKP’s work through contributed developer time. Today, there are approximately 25 sustaining partners, who pay some amount each year, and six development partners. This is the segment most likely to be a source of deep support for the PKP moving forward. It is important to deepen ties with them and to identify the types of institutions and publishing needs of this segment.

Unfortunately, drawing broad generalizations about which types of universities are most likely to use OJS is trickier than just assuming it is large or well-funded institutions. Rather, there seem to be some necessary conditions that must be in place. People we spoke with often noted support for open access and community-based projects and an appreciation of the benefits of getting “free” software.

They must also have staff on hand to take on a few important roles:

- Technical support: someone to set up and manage the installation; this need not be a full-time developer; but it does need to be someone willing to devote the time to learn the system, ask questions, and determine what degree of customization is possible or (wise).
- Editorial support: someone to serve as liaison to faculty- and student- editors.

These do not need to be highly technical people; at a major university running dozens of journals, just 1.5 staff were assigned to supporting OJS: the scholarly communications librarian, to do outreach and editorial support, and a part time developer and part time systems administrator. One former scholarly communications librarian, responsible for running the OJS installation at a major public research university, characterized it like this:

“bepress tended to be for organizations with money and less staff time, who really needed the customer service side of things. Organizations with more staff but less funding, with developers and a strong OSS commitment have always leaned towards using OJS for journal publishing.”

The economics of who runs OJS bears further examination: While “free” to download, OJS is not free to install, run, or manage, meaning that while one can download it at no cost, it might be necessary to pay those who continue to modify and work on it. And some institutions do not have the staff time to support the activities needed to keep an OJS installation – and its many users – running.

Those running their own installations in an institutional setting, where they are offering journal hosting to others in the community, also have to determine to what extent they plan to customize it. One example, University of Technology Sydney (Australia), was cited by one interviewee for having designed journals

with great visual appeal. She noted with surprise and approval that, “I didn’t know OJS could look like that.” For others, keeping it simple was key. One former publications manager who managed OJS, but was not herself a developer, noted that “people with high (design) standards will run in to problems quickly...” Her implication was that while customization was certainly possible, it was likely to be costly (time) and carried risks: changes to the front end could inadvertently alter functioning on the back end. Rather than attempt complex customizations, her guidance was to keep it simple.

The largest, tech-forward institutions can handle installations and some customizations with no problem; but there are other categories of “cash poor” institutions for whom OJS is not a reasonable alternative, because neither do they have funds to pay annual fees, nor do they have staff time/expertise to run and manage an installation. Institutions like that – smaller universities; liberal arts colleges, the “long tail” of higher education, may well prefer a simple cloud-based solution with a very light technical footprint, that requires neither significant staff time, nor significant cost. This is a need that places like University of Alberta serve, by hosting OJS and offering free journal set ups to other Canadian universities.

OJS Users: Not just Publishers, but editors, peer reviewers, and authors

The Community Consultation phase of work approached the question of users by looking at client types – the sorts of current, past and potential customers who would opt to use OJS, or pay PKP/PS for publishing services. Most of our work targeted those who make decisions about whether or not to use OJS in some form, but part of that decision – and an increasingly significant part – is likely to be determined not by what a publishing manager thinks, or what an IT group feels comfortable with, but how well OJS works for those people who use it every day, once it is set up: authors, reviewers, and editors. If these people enjoy it, find that it speeds their work and is easy to use, they will lobby to use it/keep it.

If, however, they are running into trouble, everyone feels the pain: In a university setting, they will call the scholarly communications person at the library to ask about passwords, figure out where a paper went, or why a layout looks a certain way.

- As one interviewee running a substantial publishing program at a US-based research university pointed out, “the editors, authors, readers who engage with it directly... need to be involved. “They accept a lot of stuff, because they have few options. But when people can vote with feet, they will go to things that make life easier.” He notes that editors can have strong opinions about the things they care about, albeit not the same things librarians would find important. “They may like Scholastica since it has a nicer interface, even though it might not have all the benefits of OJS (DOIs, preservation). We mostly do not hear from these people but they are in this every single day.”

The issues publishers, particularly newer publishers, library publishers, those who are new to some of the more traditional elements of peer review and manuscript editing, and those operating with very few staff, may also need support “beyond the technology.” This may include support for using OJS, but also could include support in conducting key publishing functions, like copyediting.

- An independent publisher in France who recently left OJS’s PKP/PS, pointed out how the Mersée Centre (France) thinks about this. “They do not just handle software and hosting, they provide ‘what you need after the software’ – that is, typesetting, and support needed to use the software – a Managing editor, someone who can be responsible for the tech aspects, and a contact for the editorial board. He feels that offering “software is not enough, you need someone who can help

make the connection between software and people. Someone to check that everything is alright right info in the right place; who can help authors, peer reviewers, to do little things that can sometimes be unclear (uploading report, for example) ... If you look at Elsevier and others – they are providing this service. If PKP cannot provide this with OJS, they cannot attract most clients/users.”

- **The range of types of support needed** beyond manuscript management is substantial. We heard a range of suggestions, some speaking to the need for editorial support, others more on the production and dissemination side. These included Managing Editor role, copyediting, metrics integration into the reader interface, layout and design templates in different formats that editors could use in xml, latex, or even simple .html or .doc; print on demand integration; easier ways to get journals from other platforms into OJS; integration with other systems, including ORCID.

The appeal of OJS

Among those interviewed – and as evidenced by the large number of users worldwide – it is clear that OJS has many supporters. Among the things people mentioned when asked about what they liked best about OJS, were the following:

- Those we spoke with immediately highlighted the appeal of OJS as being open source. Particularly in the library publishing community, there are people, both in technology and librarian roles who feel strongly about supporting community-based efforts, when possible.
- OJS, as OSS, is economically feasible for many institutions that cannot afford commercial alternatives, but who have staff on hand for a basic level of support.
- Flexibility is a major factor, as well, for those who want to configure OJS to support different types of publications.
- The peer review piece of OJS was cited several times as being a real value; something that is hard to get right.
- Modularity. This is not typically the way people talk about OJS, and newer open source competitors refer to offering “modular” options, so that people are not tied into one single full-workflow solution. The reality is that OJS user are already picking and choosing which elements of OJS they work with. Some need it for the peer review system; others work with editors who prefer to manage that themselves, and just turn over articles that have already been reviewed and edited, so that they can be posted online. For them, display and discovery are paramount. Some institutions have different journal editors using OJS in different ways.

Problem areas

“Everybody uses OJS, but everybody complains about it, too... But there is nothing else like it, where you can take it out of the box and spin up a journal easily.”

—Scholarly Communications manager at a large research university

Given the love-hate relationship we have heard many have with OJS, we listened for things that users (and non-users) highlighted as problem area for OJS. Below is a summary of the main messages that emerged.

Upgrade or not? While OJS3 is understood to be a real improvement over OJS2, many of the comments gathered related to OJS2. This is because it appears that many users have not yet migrated from earlier releases to OJS3. Some were apologetic about this, insisting it was not any fault of the software, but just a lack of their own developers’ time. This feels like an important problem to resolve; if OJS3 represents a

major improvement, it will not have the impact it needs to, if even its established users are unable to easily upgrade themselves. And this is not just an issue for OJS users running their own installations; more of a concern was that this appears also to be the case for hosted clients. One felt that they had taken so much time to customize their platform in OJS2, that making a change now would be too labor intensive.

That said, some findings below may be colored by the fact that users are on an earlier release. All the same, since many are still using OJS2 and may be for some time, these concerns need to be taken into account.

- **Visual appeal.** There were numerous criticisms concerning the visual appeal of OJS2. Many felt it looked outdated or was not appealing. More concerning is that the customizations many users have put in place to improve the look-and-feel of OJS2 may in fact hindering their move to OJS3.
- **Overly complex for what some need.** What some users love about its flexibility, others feel renders the range of options in configuring OJS “too complex” for their needs.
- **Code base.** While this report is not a technical review, people familiar with the OJS code had some thoughts to share. Some felt there were issues concerning the coding language used (PHP). Among the issues noted were:
 - Difficulty in hiring qualified programmers, whether at PKP or the institutions that are using OJS. One interviewee pointed out that since PHP is no longer in the top 5 most popular languages, younger programmers are less likely to know it; hires will need to be more senior, and therefore more expensive.
 - Lack of transparency of code base, to other potential developers. The code itself seemed to some not to have a level of documentation needed to encourage or facilitate the on-ramping of outside developers.
- **Developer community.** Some pointed out that despite being an Open Source project, it sometimes felt like “open source in name only.” The perception of many interviewees was that there was not a wide or active developer community in place, compared to what they observe in other initiatives like Fedora. If this is true, the PKP team can consider ways to improve this; if it is not true, considering further communications strategies will be important.
- **Development strategy and roadmap.** A few issues surfaced concerning addition of new features and the timings of this work. On one hand, some interviewees were impressed with the constant improvements being made. But this was somewhat outweighed by the expressed frustration about a few things relating to OJS development:
 - **Disappointment with the delay in launching OJS3.** Some felt this took much too long; in some cases, the delay may have led clients to choose alternatives. The major changes that OJS3 brings, while considered by many to be a major improvement, also cause a challenge for those who have already invested significantly in customizing OJS2.
 - **Lack of transparency in the long-range road map for development.** Several users and at least one potential client (who opted away from PKP/PS) pointed this out. They would like to see more clarity about the roadmap and the way priorities are determined.
 - **Lack of responsiveness to specific user or client requests.** Some of those who interact closely with the team reported having little idea if their recommendations are being taken on board, or acted upon. Several had very useful suggestions for ways to improve this process, including by integrating a project tracker, so people can see their ideas moving forward and also know when new features are likely to launch.

It is worth pointing out that while some of these issues are offered under the guise of “technology” issues, many are in fact issues concerning **community relationships and communications practices**. A more transparent, engaged, and responsive practice would involve a range of tactics, some involving in-person

engagement or even governance methods; and some using technology to improve processes. Taken together, these could go a long way to more effectively gathering and responding to feedback in a way that quickly surfaces emerging needs, and offers a range of ways to keep the PKP community involved and informed.

Recommendations

PKP's flagship software, Open Journal Systems, has been extremely successful by most measures. And yet, the frustrations some have felt have served as motivation to create competitive offerings. Should PKP plan to continue to support and develop OJS, which they do, the following steps would help to improve both the perception and the reality of the open source software that PKP develops.

- **Increase customer- and user-focus.**
There is a lot of activity out there and many newer initiatives are able to build from and improve upon the original idea (if not the original code) of OJS. To be most successful, PKP needs to similarly re-focus and decide which audience(s) they most want to serve. To support scholarly societies, they will need to offer professional-grade customizations and detailed metrics reporting; to support campus based publishing programs, expanding to offer publishing services alongside the technology could be an additional direction to consider.
- **Develop closer ties - in both directions - with key stakeholders.**
The PKP organization has done work that today benefits many thousands of people around the world. And yet, as an open source project, the ties back to the organization are quite loose. Closer relationships with academic institutions, consortia around the world, and for-profit and not-for-profit companies that make use of PKP's software would have many types of benefits. This could take the form of voluntary donations, explicit acknowledgment that the organization is "built on OJS." In the other direction, PKP could work more closely with major partners to understand the needs of the editors, author and publishers they support. Building in this critical source of feedback would offer further valuable input into the technology roadmap and could also help to identify new sources of support, when innovative ideas are needed.
- **Speed up the pace of innovation by expanding capacity internally and externally.**
The PKP team is small and productive, but that only goes so far when an OJS user is waiting for a new feature to launch. To accelerate the speed of innovation, the PKP team should consider ways to access more developer capacity, though hiring, but also through facilitating/incentivizing contributions from the community.

PKP Publishing Services (PKP/PS)

PKP Publishing Services, or PKP/PS, is the hosted solution intended for those who wish to publish but cannot take on the role of platform developer or host. This has been the revenue generating unit with the PKP organization; leadership's working hypothesis is that expanding this service will provide the funding needed to continue to develop and expand the FOSS offerings to the community.

While some users of OJS complain about the work they need to do to customize OJS, PKP/PS offers the expertise and developer time to set up the journals, and work with the publishers or publishing managers, in theory, removing all or some of the pain points people experience when attempting to run it on their own.

- Today, PKP/PS has contracts with over 250 clients who collectively publish nearly 500 journals.
- The number of clients, journals, and revenue have continued to increase each year.
- The greatest numbers of clients come from Canada, the US, and Australia

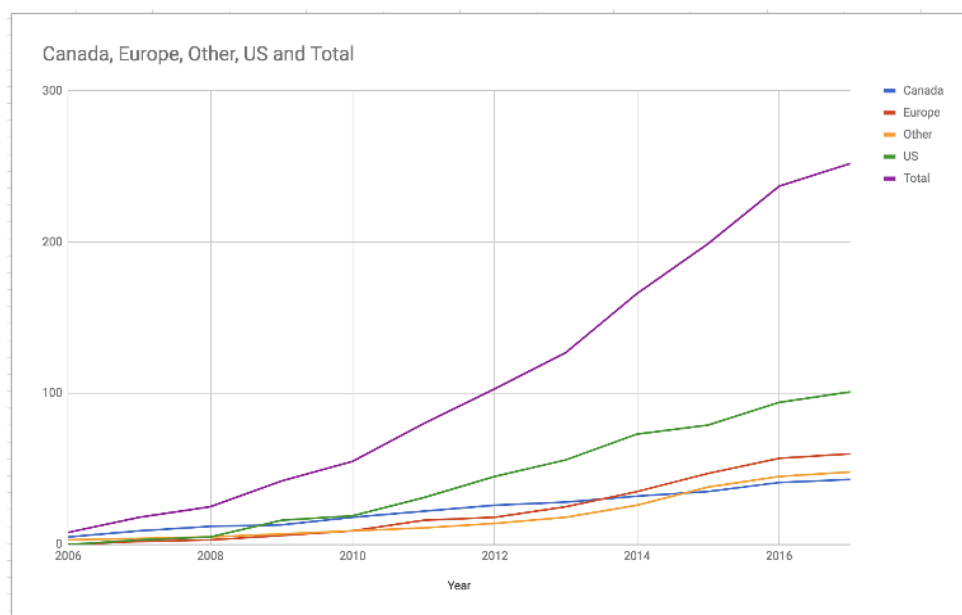


Figure 1. Growth in PKP/PS clients by region from 2006-2017, with total revenue of \$525,000. (image courtesy of PKP)

Whether publishing a single journal or many, there are a range of reasons clients have chosen to use PKP/PS:

- Academic institutions that have legacy content but do not have the staff to manage publications in-house; no IT support to set up and manage a local instance of OJS
- Organizations with a single or multiple high profile publications seeking a cost-effective alternative to commercial options.
- Independent publishers without recourse to library, publishing, or other institutional solutions

The appeal of PKP/PS

With the PKP/PS staff taking on the installation and customization work, the aim is for PKP/PS customers to have a very similar experience to other hosted solutions, like bepress or even Highwire. Overall, the clients we spoke with had very positive things to say about working with the PKP team, and even those who were not entirely satisfied, often made a point of downplaying their criticism, or of saying they were aware of how small the PKP team was.

While the clients we spoke with often mentioned having gravitated toward OJS for its cost, open source structure, and open access ethos, several made clear that they fully expected and required a top-rate, “best-in-class” publishing experience, in line with what they could have expected at a commercial alternative.

- One university-sponsored journal editor notes that he is competing with “peers published by Elsevier.”

- The editor of JAIR, “one of the first OA journals, and possibly the first in computer science, based on the web,” sought out OJS not just for cost, but its reputation for reliability.
- The manager of ALA’s ACRL journals noted, “We wanted to replicate as much as possible what we were doing with Highwire... We did not want any downgrade in service or functionality for our readers.”
- According to Geoff Harder, who runs an installation at University of Alberta that serves multiple Canadian higher education institutions, “We need to have OJS and services like this positioned to go nose to nose with the big commercial publishers... Tools need to be as easy to use, support the full submission process, with no clumsy steps for the editors who manage the journals.”

Several interviewees noted the extent to which it was possible to customize OJS to suit their needs and considered this a real benefit. Particularly for more substantial publishing operations – those with multiple journals, and journals requiring a high degree of professionalism – the range of options and the flexibility and expertise of the PKP team was welcome.

The team at PKP/PS was singled out for praise by some clients, for their expertise, in particular. One journals manager at a major research university publishing program noted, “The nice thing about PKP is that I can still send along a question, without feeling embarrassed, and I could also send along highly complicated tech questions, and because the people we are speaking to know what we are talking about, it has saved us a lot of time. We have tech savvy people here who work at the library; the act of translating to the sales rep to the tech person; that has been nice to cut out those middle people.”

Problem areas

A few common challenges emerged from the interviews, as well.

Migration. Even for clients, with PKP/PS staff to guide the process, migration can still pose challenges, whether moving from other systems to OJS (in the case of UMN, from bepress) or upgrading from OJS2 to OJS3. Some of the issues raised included:

- **Time/cost to migrate.** One client is unlikely to move to OJS3 anytime soon since they fear it would be “like switching from OJS2 to a total different company.”
- **Loss of data due to migration.** Said one client “You start at zero again... we downloaded old download statistics, and we have that info, but it is not in the new platform...” We made a list of things we knew we would not be able to replace... like: author dashboard including detailed level of stats, what articles have been downloaded, where the people came from, the affiliation of the reader. This author-level stats dash, we knew we would not have that. We prepared for that.”

Communication. Clients had uniformly high praise for the expertise of the PKP team and their willingness to take on even very difficult challenges. But speed of response was cited as an issue. Said one journal editor of a society journal, “With Highwire, they hire out, so have more of a team to do work... if we want enhancements, it is a longer process than with Highwire... I know it’s a small operation ...”

Complexity. While many appreciate the flexibility and range of options, even some clients found the range of options daunting.

- A former PKP/PS client, the manager of an independent journal, felt the “complexity” of OJS was more than was needed; he preferred fewer options (or fewer visible options).

- One major society publisher appreciated that the software made it possible to greatly customize, while noting that needing to customize so much could be an indication of being “an edge case” for PKP/PS.

Lack of Awareness of PKP/PS. Throughout the audience consultation it became clear that one of the biggest obstacles to the success of PKP/PS is that many people are unaware that this hosting service exists. This was true of members of our advisory board, users of OJS, and others considered quite knowledgeable about open source software for publishing. The longstanding reputation of OJS is such that many people know that OJS is open source publishing software, but many also assume it is only available as open source and that it is only intended for open access publications, and only useful for single-journal publishers.

- One research university has used OJS for years, and continues to use it for student journals. When the current press director could get no IT support on campus to do any customization work, she contracted with another service provider for hosting services. She did not know that PKP/PS offered this service.

There were several stories like this, where people were unaware (1) of the PKP/PS hosting service; (2) that OJS was not solely an OA platform; and (3) that OJS could be configured to support subscription-based journals and multi-journal publishers.

Recommendations

Improving PKP/PS is not just a matter of better “selling” the existing service. Certainly, there are deeply ingrained, and apparently widespread perceptions will need to be corrected if PKP/PS is going to grow. There is clearly real room for improvement in terms of branding, messaging, and outreach, so that potential clients are aware of the service, its scope, its benefits, and its value to their work. To gain more publishing clients, specifically those in a position to pay fees for hosting services, PKP will need to develop a clear strategy for client development.

But more fundamental changes will be needed as well. Today, PKP/PS competes not just with commercial providers, but with very customer-focused not-for-profits; clients expect the same level of polish and confidence they will be getting elsewhere. This translates into a few types of changes that will be needed:

- a review of OJS itself, to see what needs to be done to better support use cases involving multiple journals and/or multiple imprints
- a strategic approach to identifying and prioritizing categories of customers;
- an improved customer-service approach to identifying and pursuing customer leads;
- an improved method for negotiating with potential clients;
- a higher level of professionalization concerning the ways that the offer, pricing, and benefits are described.

That said, should many new clients appear, this would quickly strain the capacity of the current customer service team at PKP/PS. This capacity would need to be developed, through a combination of support forum and increased staffing before any push to expand the business takes place. Customer service, quick response times, and possibly the addition of further services will require additional staff, including staff with skills not native to the current team.

PKP as an innovator, educator, and community advocate

While Open Journal Systems is by far the most well-known offering of the Public Knowledge Project, over the years, the team has been involved in many other activities. First among them is identifying and building new software - including Open Monograph Systems and Open Conference Systems. The PKP School was first developed as a way to help guide those who had installed OJS, but has developed into a much broader series of modules aimed at educating those who engage publishing workflow, including editors to authors. And along the way, the team has continued to develop and create useful services for those who publish online and use OJS.

When appropriate, interviewees were read a list of the products and services that PKP offers. They were asked first to simply indicate whether or not they were aware of the service; those who were aware, were then asked to offer some feedback.

The overwhelming finding from this exercise was that while there was high recognition for certain offerings (including OJS, OMP, and the Support Forum) awareness of many other products and services was quite low. With the exception of OJS and OMP, the acronyms – which are how the products/services are described on the website—left the respondents cold; offering the full name of the service sometimes helped trigger their memory of it.

Further detail is presented below, but this top-level finding makes it clear that future efforts to promote these products and services need to be strategically planned and executed – from naming and branding, to awareness campaigns and messaging, to goal setting around their adoption.

- **Open Source Software**
 - **OJS (Open Journal Systems):** Due to the nature of these interviews, all respondents were aware of OJS; the majority of the interviews focused on this particular product.
 - **OMP (Open Monograph Systems):** Many were aware of OMP, though very few of those we spoke with are using it now.
 - **OCS (Open Conference Systems):** Some reported using it or having used in the past; there was some uncertainty about whether it is still being supported.
- **OTS (Open Typesetting Stack):** There was almost no awareness among interviewees of OTS, the standalone service for converting Microsoft Word and PDF documents to structured National Library of Medicine XML to create HTML, PDF, and ePub article views. Once a description was offered, several interviewees expressed interest.
- **PKP Index:** There was very low awareness of this database of articles, books, and conference proceedings that use OJS, OMP and OCS. Several interviewees made clear that their main need was not finding other OJS-based works, but insuring that their own articles were being indexed by the major search engines.
- **PKP PN:** Committed users, particularly managers of university-based installations, were well familiar with the PKP Preservation Network, offers preservation and access for journals that are not otherwise part of the Global LOCKSS Network. This was highlighted by one library publisher as a “game changer” for those many smaller institutions who struggle to manage preservation on their own; she suggested this would be an opportunity to exploit further.
- **PKP School:** Most knew something about PKP School, but got something wrong. Some thought it was just the “user’s guide” and were unaware of the basic “how to be a publisher” content now

on the site. Some thought it was a fee-based program. One apologized for not being able to attend in person. And so on and so forth.

- Those who were aware of the User's Guide were extremely positive, saying it was invaluable; some report sending links of the videos to their staff and recommend them to their editors. Kevin's videos were singled out several times for praise. Some lamented the lack of guidance online for OJS3 (which has since been made available): "If he doesn't do it, we will have to do something like that ourselves," said one eager manager.
- When the "publishing education" modules available on the PKP School site were pointed out to them, several interviewees expressed real interest, saying this is something they (often publishing managers in a library setting) need to educate editors. The scope of this offering, its branding, position on the website, and messaging around free (versus fee) needs to be sharpened and actively promoted as a key value of the PKP offering.
- **Support Forum:** Almost everyone was aware of the Support Forum; it is a common OS feature. However, there were mixed responses to how it is used, and what might improve it.
 - Many use it as resource to find threads of conversations they can use; some noted that "the information there is not generalizable" so is not always as helpful as it could be.
 - Some prefer to use the forum to research questions, rather than ask them. It was not clear why some seemed hesitant to participate, but it came up more than once in the interviews.
 - One pointed out that it was great, that response time was fast, to get help from all corners.
 - Some noted that it is treated as "one large space" and would benefit from separating out troubleshooting from suggestions for tech development. Some offered suggestions of ways to manage the space, including approaches that actively encourage public tracking of new developments and fixes, and permit members of the community to vote for those they feel are most desirable.

International Partnerships and Community-based platforms

This study only begins to scratch the surface of the international partners of PKP, but this is an area that merits further careful examination. PKP's OJS is currently being used in nearly 100 countries around the world. In most cases, this may be by individual users, who run single installations. It is quite remarkable that of the nearly 2000 responses to an OJS user survey run in 2016, the greatest percentage of respondents were from Brazil (17.4%); Indonesia (10.6%), Spain (10%), Colombia (5.8%), United States (4.2%), Italy (3.5%), and Canada (3.5%), Argentina (3.5%). Just as impressive, responses came in from 93 different countries.

In a study published in 2016, PKP leaders were able to identify 6,271 installations of OJS spread across 136 countries on 6 continents. These installations host 9,828 "journals that meet our arbitrary threshold of at least 18 articles published in the previous two years."²

While many OJS users are single-journal publishers, perhaps even individuals, there are many examples of organizations that have seen the need to provide a further layer of support to publishers, sometimes at the national level. These regional and national consortia are extremely important conduits to end users in

² Alperin, Stranack, Garnett, *On the Peripheries of Scholarly Infrastructure: A look at the Journals Using Open Journal Systems*, STI Conference, 2016.

the regions in which they operate. They offer a real opportunity for PKP to establish strong ties to institutions, publishers, and funders in these regions and stronger ties to them.

This is a critical space for PKP to explore. The expert interviews, even when critical about the OJS software, were extremely supportive of the good work done by PKP, by extending opportunities to publish to areas of the world where commercial alternatives are not viable options. Many interviewees, when asked what they saw as PKP’s strengths, noted the vast international audience, its devoted “community.”

PKP may have a very important role to play as an entity that can reach out and support scholarly publishing around the globe, by strengthening its ties to the local platforms, aggregators and service providers. We heard time and again, that while direct revenue funding might be challenging in some regions, there are often productive partnerships that can be established, so that PKP could host regional events, train-the-trainer workshops, and otherwise increase their global footprint in a way that would build capacity in the regions themselves.

On a larger scale, there may be ways for PKP to work more closely with major initiatives that are currently developing community-based publishing infrastructure. Some are discipline-based, such as Libraria in anthropology; others are national responses to the need for a shared infrastructure, such as Journal.fi (Finland). The OPERAS initiative (“open access in the European research area through scholarly communication”) is a multi-year initiative, with funding through the EU Horizon 2020 framework; an early report highlighted that many of its member countries are currently heavily dependent on PKP’s software for their own national solutions. The OPERAS working groups are currently exploring ways to develop a reliable scholarly communications infrastructure, where goal is publication of peer reviewed scholarship. Exploring how PKP can be part of these early discussions, whether to support individual countries, or this European-wide initiative.

Canada. As a Canadian-run, university-hosted project, the PKP has been involved in several partnerships that suggest that ongoing support may be possible as part of its own nationally supported infrastructure solution. PKP continues to develop Coalition Publi.ca in partnership with Érudit. This particular relationship has not been the focus of this report, but is extremely important to the future of PKP. The current multi-year CFI grant, which encourages the collaboration of PKP and Érudit, is still in early stages, but could provide a major source of ongoing support.

ADDITIONAL FINDINGS

Legal: IP protection, licensing

The PKP team is well aware that there are outstanding urgent issues concerning the IP and licensing status of PKP and OJS. Many of these were surfaced in the report produced in 2014 by Lynn Copeland. The current research phase did not undertake a comprehensive legal review; but many of the issues raised in the earlier study still appear to exist and require attention. Some are quite serious, involving the use of the OJS name, notably by a direct competitor who has developed a hosted solution for OJS, while continuing to speak poorly of PKP.

There are other instances, where more directed efforts to manage the reputation and brand of OJS and PKP would add considerably to its efforts to increase impact and encourage financial and non-financial support. Below are a few examples of areas for improvement:

- The name Open Journal Systems has been so well understood to mean “open source platform to facilitate open access publishing” that inventors of similarly open initiatives have taken to using it. One example is the newly launched Open Encyclopedia System (sic) <http://www.open-encyclopedia-system.org>. If PKP thinks there may be other applications for the platform structure it has built, it might be a good idea to preemptively trademark the name, secure domain names for any other related products you may want to launch.
- The terms of the current GNU GPL software license software license scheme should be reviewed, with an eye to ensuring that those who use OJS are abiding by the terms of the license, and that there are provisions included that require attribution back to OJS and PKP. As it stands, many of the most important partners using OJS as a core part of their offerings are neglecting to acknowledge that they are run on OJS. This may be due to a variety of factors, and in most cases is because users did not know better. But it is difficult to make a case for how widespread the influence of and value of OJS is, when many of its users mask its use. A simple set of guidelines, and some degree of compliance checking would go a long way to making sure that when people are visiting the thousands of journal sites powered with the use of OJS, that they are made aware that this is the case.

Marketing, Branding

Across many of the interviews conducted, it became clear – though not discussed explicitly – that there is a real need to examine the communications strategy of PKP and of its primary product lines. The following issues surfaced in conversations about different products/services and opportunities for growth, and partnerships:

- Low awareness of key messages PKP wants to share
- Lack of awareness about many PKP Services
- Persistence of out-of-date perceptions of what PKP offers, specifically about what OJS capabilities are
- Misunderstandings concerning key aspects of what OJS can offer

In addition, there are many latent opportunities to build support in the community by:

- Reinforcing PKP’s longstanding commitment to remain a community-based solution
- Underlining the reliability of an organization that dates back 20 years, is still being actively developed, and has a large installed user based.
- Inspiring the community of users and funders, by sharing stories about the scope, scale, and successes throughout the global PKP community.

Taking some steps to define and promote a core set of messages through various channels, in a way that is consistent and ongoing, would go a long way to begin to reverse this trend.

Becoming User-focused, Customer-focused, Community-focused

Another common theme across many of the interviews can be summed up in a shift of focus. At the time OJS was created, just having it available for people to download was already revolutionary. Today, with many competing sorts of solutions on the market, remaining “customer-agnostic” is just not possible. Balancing the ethos of a pure Open Source project – where no obligations are placed on users – with the need to understand more about them, what they need – is an important balance to define. More to the point, with PKP/PS, the need to deeply understand users – who are paying clients! – is just basic business good sense.

Every other competitive product on the market, whether open source, free, fee-based, has a finely tuned sense of what problem they are solving and for whom. PKP needs to get much closer to knowing who their target user is/are, if they want to build the services part of their business.

This user-focus need not be restricted to those in a sales role. Even those developing competitive FOSS know who it is for; Janeway is being created to support content on OLH. For them that use case is justification enough, and they may well attract other users, as well. CoKo's PubSweet/Editoria was developed in partnership with a university press, and is based on an understanding of book publishing processes, from the point of view of the editors and production people who use them. OJS is still at a point where it could be outfitted to appeal to society publishers, but is not yet loudly making that case; an argument could be made for making OJS the software of choice for all journals in Latin America (or pick another region). But without declaring that focus, it will be difficult to really dig in and deliver the direction, support, and type of innovations that those sectors need most.

RECOMMENDATIONS: THREE PILLARS

While this report documents plenty of competition, the deep history of PKP and its contributions, the genuine respect its users and others have for its work, and the current level of activity and enthusiasm for seeking alternatives to commercial publishing means that there is still a great deal of opportunity for PKP to grow. The PKP team has expressed interest in building its publishing services, improving its ability to innovate quickly by strategically building its partnerships and developer community, and by exploring a greater role as a leader on the global scholarly publishing stage.

This section offers some possible next directions for PKP, based on the evidence gathered over the past several weeks. While presented as three discreet ideas, we anticipate that PKP will want to take all three areas forward in some way.

Each model outlined below is based on a slightly different notion of what the value is that people are supporting, and how PKP might ask them to support it. A productive next step will involve determining what balance of these three might together produce a funding model to support the mission and work of the PKP. Each of these three areas roughly corresponds to one of the three main areas, or “pillars” that together sum up the main activities of PKP: Publishing Services, Open Source Software Development, and Research, Education & Innovation.

Strengthen PKP Publishing Services

Today, this is the primary revenue-generating model of the PKP team, representing approximately 50% of annual operating expense. The business is already bringing in substantial support, with estimated gross revenue of \$525,000 in FY 2017/2018; they have had successes, and there is evidence that lack of awareness among potential clients may be masking further demand. One approach calls for expanding efforts to strengthen this offering.

Opportunities

- Substantially expand the PKPPS offering, through targeted outreach
- Evidence suggests there is a good deal of untapped demand, including:
 - Low awareness of PKPPS offering among key constituencies (library publishing, scholarly societies)
 - A current hunger for non-commercial alternatives
 - Specifically, there are university-based “library publishers” seeking bepress alternatives

Challenges

However, there are signs that this model is not scalable in its current format.

- *Competition* is stiff and growing; competitors are positioning themselves by offering services they know PKP does not currently offer. New entrant software developers are creating open source competitors to OJS and OMP.
- *Structural challenges*. The customization customers rely upon has put PKP in a difficult spot; without a funding model to recoup costs, they face a backlog as they roll out the migration to OJS3. This is a structural problem that will not improve unless they modify the system they use to do upgrades, or they find a way to recoup costs, by adjusting the pricing model so that clients are paying costs for upgrading non-standard features.
- *Staffing*. Current staffing does not include a dedicated outreach team, or a well-defined sales strategy. This would need to be created before any new push to increase sales.

For this to succeed, PKP will need to:

- Develop and implement a strategic marketing plan and invest in customer development.
- Increase speed and responsiveness of customer support, through a combination of activities, including improving ways for the Support Forum to address more generic questions; and bringing in additional staff (and/or members of the community) to tackle less-technical support issues.
- increase staffing devoted to PKP/PS, to include:
 - Marketing / outreach coordinator
 - Sales director
 - Customer service support roles

Deepen Community Engagement for Open Source Software Development

The interview phase highlighted a broad range of institutions and individuals who attested to the critical role that PKP has played in their work, some offering thoughts along the lines of “without PKP’s OJS, I would not be able to publish.” There is genuine and very deep admiration among many supporters for the good work PKP has done, even among those who do not currently use OJS or other PKP software and services.

At the same time, there are many “partners” who actively use OJS -- some for running major publishing operations at universities, some for running for-profit businesses -- who do not currently contribute anything back to the PKP organization. Several OJS beneficiaries noted in interviews that they would willingly support the organization; some suggested that they had never formally been asked.

For these reasons, it is important for PKP to develop, promote and actively seek financial and/ or other support from the many entities around the globe that are successful as a direct result of using the software that PKP develops. This would be a way to acknowledge the importance of PKP to their own well-being; would promote the value of OJS to all users of the partner-led initiatives; and would help to fund the PKP in continuing to develop open source software.

Opportunities

- With additional support, PKP could speed up the rate of new development, through increased community support, including financial contribution, code support, and brand awareness.
- Evidence suggests that
 - Many partners would contribute something, if asked.
 - Many OJS users are grateful for the savings that OJS represents for them.
 - Developers and partners have wanted to contribute code in the past, but have sometimes been discouraged.
 - There should be relatively easy ways to encourage users to promote the global reach of OJS as its ability to make publication possible in parts of the world where there may still not be viable alternatives

Challenges

- Gaining financial contributions will require a carefully framed “ask” and a clear expression of benefits for prospective members.
- When library budgets tighten, these voluntary donations are often at risk.

For this to succeed, PKP will need to...

Develop a campaign to actively encourage contribution from **major beneficiaries**. This would include

- A schedule of levels of contribution
- An agreement to openly signal that the partner is using OJS (or other PKP software); this could take the form of a badge or logo, and a requirement that it appear on the home page; in any descriptive information, and so forth
- Where possible, further discussion of possible development partnerships
- Agreement to share back code development

Create a model to encourage **membership from individual OJS users...**

- A voluntary donation to OJS, in exchange for which members receive some well-defined benefits, including, for example:
 - Reduced registration fee for the Annual Meeting (and other ad hoc events)
 - A monthly member's newsletter
 - Priority ranking of issues on the issue-tracker or similar
 - Acknowledgement on the PKP website

Explore a range of ways to make **code contribution** easier and more appealing

- Proactive outreach and clear documentation
- More ways to publicly acknowledge contributions
- Working with the community to gather new ideas and prioritize roadmap

Develop Role on a Global Scale: Research, Community, Education

Many of those interviewed cited the immense and global user base as a key competitive benefit of OJS, one that is unrivaled at this point. Data on global usage is humbling in terms of the vast diversity of countries with people participating in PKP in some way. In many cases, there are important regional or local hubs managing this activity, and those hubs could be much more powerful as partners.

But right now, there are only very weak ties or obligations between PKP and these partners; even some of the most powerful partners express some disappointment at the challenges they have had working with PKP. This will have to change quickly, with a concerted effort, in order to reverse the perception of PKP in these regions.

There is a very exciting potential role for PKP on the global stage, should they choose to pursue it. The same sort of needs of publishers, editors, and authors that we see in North America, are present on the global stage, and are perhaps even more pronounced. Right now, OJS itself – in the way the software prompts people to take certain steps, determine whether or not and how to conduct peer review, for example, has a performative value that people have noted is itself educational.

Opportunities

The opportunities in this space could yield resources for the PKP team in terms of contributed time, opening up new sources of research funding, and vastly expanding the reach and loyalty of its global user community. This is also likely to result, downstream, in some increase in publishing services, though it is not the primary reason for undertaking this work. Below are some ideas surfaced throughout the interview phase, showing how PKP could take on a deeper role on the global stage:

- **Holding regional conferences**, sponsored, or co-sponsored with the regional organization (SciELO, for example). These would draw together publishers and scholars throughout the area.

Some of the function of such an event would be to “train the trainer” – an explicit effort to expand the reach of OJS support, without having to hire many more staffers in Vancouver. The event could also bring in some thought-leadership on key issues facing publishing, in general, and specifically in the region. This is very good positioning for PKP; while PKP would organize the event with a local committee, the sessions would include scholars from that area, as well as some from Canada and the US. In other words, this is not just a user forum, but a space to think big about the future of publishing, specifically open source publishing.

The benefits of this approach are many. The immediate function would be to expand capacity for supporting OJS users, but the value to creating brand and establishing goodwill should not be underestimated. Many devoted OJS users have little direct contact with the home office, and are not always able to participate as deeply as they would like, due to language and geographic barriers. Bringing OJS to them, in a very concrete way, could help in securing more users, supporters, and further strengthen the logic for having the regional consortia, or even local universities, support PKP’s work.

- **Research agenda**, developed with key players in the selected regions, to explore key topics in publishing and open access. Formal research projects could be funded and executed in partnership with academic institutions around the globe; the knowledge gained would have the extra benefit of helping PKP to better understand the global world in which they operate. The organization could end up being a very important partner in bringing diverse groups of researchers together on key topics.
- **Trustworthiness**. The issue of credentialing, and trustworthy sources is still of vital interest, in and beyond the Western Hemisphere. How can PKP take a leadership role in improving trustworthiness of scholarly research outputs? This is just one example of a topic that could be developed through research in partnership with regional organizations, that could then lead to practical next steps for PKP to implement for its own platform and publishers (perhaps with a role of “credentialing” those journals who publish regularly, and with an approved peer review process), through its work in education (through coursework PKP School can offer), and so forth.

For this to succeed, PKP will need to...

Develop a strategic approach to strengthening ties in key regions, through targeted outreach and partnerships.

- PKP’s real advantage is in the thousands of people worldwide who have used and continue to use the software it creates. Until now, the PKP team has carried the weight of this operation in a quite small team. Going forward, finding ways for PKP to grow, by actively encouraging the development of its community, will be a key element of its success. From code developers, to support networks, to global teams of researchers, PKP today is poised to play an even larger role in scholarly communications worldwide, if it can find ways to put its community front and center in everything it does.

PKP has developed a deep and loyal global following over its nearly twenty years of operation. It is poised today to squarely addresses its challenges and leverage its strengths into a dynamic plan for the future. The next steps will almost certainly involve a good deal of change, and this may not be easy. But publishers of all types in countries around the globe, continue to seek ways to create, consume, publish and share information, and the Public Knowledge Project, through its mission, its software, and the support of its community, is in a position to help them as needs continue to evolve.

APPENDICES

Appendix A: Advisory Board

Dominique Babini, Open Access Advisor, CLACSO

Geoffrey Bilder, Director of Strategic Initiatives, Crossref

Gwen Bird, University Librarian and Dean of Libraries, Simon Fraser University

Leslie Chan, University of Toronto

Seth Denbo, Director Scholarly Communications and Digital Initiatives, American Historical Association

Martin Paul Eve, Founder, Open Library of the Humanities

Heather Joseph, Executive Director, SPARC

Robert H. MacDonald, Associate Dean for Research and Technology Strategies, Indiana University Libraries

Susan Murray, Executive Director, African Journals OnLine (AJOL)

Tanja Niemann, Executive Director, Erudit

Kristen Ratan, Co-Founder, Collaborative Knowledge Foundation

Jennifer Vinopal, Associate Director for Information Technology, The Ohio State University Libraries

Appendix B: List of Interviewees

Note: While “landscape” interviewees were asked to speak to the broader landscape in which the PKP operates, and “audience” interviewees were intended to capture the experiences of those who have worked directly with PKP and its software products and services, many interviewees were, in fact, able to speak to both. In some cases, interviewees were joined by additional colleagues on the call.

LANDSCAPE INTERVIEWS

Dominique Babini, Open Access Advisor, CLACSO
 Geoffrey Bilder, Director of Strategic Initiatives, Crossref
 Gwen Bird, University Librarian and Dean of Libraries, Simon Fraser University
 Leslie Chan, University of Toronto
 Seth Denbo, Director Scholarly Communications and Digital Initiatives, American Historical Association
 Martin Paul Eve, Founder, Open Library of Humanities
 Kathleen Fitzpatrick, Director of Digital Humanities, Michigan State University
 Sven Fund, CEO, Knowledge Unlatched
 Heather Joseph, Executive Director, SPARC
 Brian Hole, CEO, Ubiquity Press
 Rebecca Kennison, Principal, KN Consultants
 Catherine Mitchell, Director of the Access & Publishing Group, California Digital Library
 Susan Murray, Executive Director, African Journals OnLine (AJOL)
 Pierre Mounier, Associate Director, Open Edition; Coordinator of OPERAS
 Tanja Niemann, Executive Director, Erudit
 Abel Packer, Program Director, SciELO
 Mark Paterson, Executive Director, eLife
 Kristen Ratan, Founder, Collaborative Knowledge Foundation
 Mike Roy, Dean of the Library, Middlebury College
 John Sack, Founding Director, HighWire
 Kathleen Shearer, Executive Director, COAR
 Anthony Watkinson, Principal Consultant, CIBER
 Charles Watkinson, AUL for Publishing, University of Michigan Libraries and Director, University of Michigan Press

AUDIENCE INTERVIEWS

Scott Abbott, Manager, eResearch, eScholarship, University of Technology, Sydney
 Carol Ann Davis, Director of Digital Scholarship Services, University of South Florida Libraries. Joined by Jason Boczar, Digital Scholarship Services
 Robert Cartolano, Associate Vice President of Digital Programs and Technology Services, Columbia University Libraries
 Djalil Chafaï, Electronic Journal of Probability / Electronic Communications in Probability
 Tim Clifford, Senior Production Editor, ALA/Association of College & Research Libraries
 Gustavo Fischman, Mary Lou Fulton Teachers College, Arizona State University
 David Free, Editor-in-Chief of *College and Research Libraries News*/Senior Communications Strategist
 Vanessa Gabler, Electronic Publications Manager, University of Pittsburgh
 Jimmy Ghaphery, AUL for Scholarly Communications and Publishing, Virginia Commonwealth University Libraries

Geoff Harder, AUL for Digital Initiatives at University of Alberta Libraries
James Kerr, Electronic Journals Coordinator, Centre for Digital Scholarship, UNB Libraries
Paolo Mangiafico Coordinator of Scholarly Communications Technology, Duke University Libraries
Kristen Marchetti, Associate Director, Peer Review, Sage Publications
Monica McCormick, AUL for Scholarly Publishing and Research, University of Delaware Library
Alex Mendonça, SciELO
Steven Minton, Managing Editor, Journal of Artificial Intelligence Research
Emma Molls, Publishing Services Librarian, University of Minnesota
Ted Polley, Social Sciences & Digital Publishing Librarian, IUPUI
Marianne Reed, Digital Initiatives Coordinator, University of Kansas Libraries
Melanie Schlosser, Scholarly Communications Program Leader, Educopia
Samantha Searle, Manager, Griffith University ePress
Lara Speicher, Publishing Manager, UCL Press
Reggie Raju, Deputy Director: Research and Learning Services, University of Cape Town. Joined on the call by Jill Claassen, Manager, Scholarly Communications and Research.
Cecilia Rozemblum, Universidad de La Plata, Argentina
Judith Russell, Dean of University Libraries, University of Florida

Appendix C: Interview Guides

These are intended as general guidelines for semi-structured interviews; they will be customized as needed for different segments and even for some individuals, in order to be certain to make best use of interviewees' experience and perspective

Expert Perspectives on the Publishing Environment

("Landscape" phase)

Goal of the interviews:

These interviews permit us to speak with people uniquely positioned to help us think about the best future path of the PKP. In particular, we want to speak with:

- *those are in a good position to help us better understand the rapidly shifting landscape; and secondarily,*
- *those who are in a position of influence, so that the interview may also serve to inform them of PKP's undertakings, and to begin to gain a sense of their eventual support.*

Things we want to know:

- How is PKP perceived among those knowledgeable about publishing initiatives?
- How is OJS perceived among those knowledgeable about publishing initiatives?
- How are PKP/OJS perceived, *relative to other offerings* in this space?
- What are the major "problems to solve" concerning scholarly publishing today?
- What seem to be the most likely ways to address those concerns today?
- Are there examples of models that PKP should be exploring (re: organization model; range of publishing workflow; or funding model)?

Background

- Tell me about the role you currently play in terms of publishing (journals, monographs, etc..)
 - o Specifically, concerning Open Access Journals
 - o Specifically, concerning OSS.

The External Environment

- What, in your opinion, are the biggest challenges for scholarly publishing today?
- What do you see as the leading (best) options for those publishing OA journals today?
- What makes them successful?
- Are you aware of new projects in development that may support this, as well?

The Position of OJS (and OMP) in this environment

- How well do you know OJS? (Ask: What version?)
 - Have you used it? (As editor, author, etc..?) For how long, etc...
- How does OJS compare to other options (features, benefits, perception, price)?
- What does OJS do better than the others? Where do others surpass its offerings?
- What new threats or competition do we see emerging in the short- to mid-term?
- Might new partnerships be possible with some others in this space?

Position/perception of PKP

- Given what you know about it, how would you describe PKP to a friend?
- What elements of its work do you think are most important (why)?

Sustainability Directions for PKP

PKP is exploring new strategies for ongoing support.

- What do you see as the greatest ongoing needs for new publishers today?
- When you consider what platform to choose, what is your main consideration?
- What opportunities might be most likely for (PKP)... platform solutions? services?
- What do you see as most likely opportunities for revenue generation? Willingness to pay/history of paying for APC model; membership fee; sponsorship)
- There are 3 areas PKP is considering; what are your thoughts on its potential to:
 - Expand publishing services
 - Run a membership organization, with enhanced benefits for members
 - Play a role in education, research for the larger global community in publishing

Audience Interview Guide

PKP Users (“in the wild”)

*“Users” here will include those who are **currently using OJS or OMP** in their work, or supervise those who do; those who are **“non-users”** – whether because they once used OJS and no longer do, or evaluated OJS and chose another solution instead; and those who are potential future users.*

Background

- Tell me about the role you currently play in terms of journal (and/or monograph) publishing.
- How many journals do you publish? (What type, discipline; Peer reviewed or not? OA (what sort) or subscription?)
- How many monographs do you publish? (What type, discipline; Peer reviewed or not? OA (what sort) or subscription?)
- Do you publish other sorts of outputs? (OERs, DH projects, primary source materials? Data sets?)
- What role does publishing play in your organization? (A service? Teaching tool? etc..)

Goals of your Publishing Program

- How long has your unit (have you) been involved in publishing?
- Which other units on your campus (in your institution) do you collaborate with in this work?
- What determines what journals/articles/books/etc.. you choose to publish?
- What staffing do you currently have for this activity? What is the role of your staff in supporting the publishing process?
- What do you/your staff see as most important goal of your publishing work?
 - o How do you measure success?
 - o What are greatest obstacles to achieving your goals?

Publishing Systems & Software

- What publishing platform and tools do you use today?
 - o What do you like about using (product x..)?
 - o What do you wish were different about (product x)?
 - o Is there anything you wish your current system did better?

Purchase/acquisitions process

- Who at your journal, publishing service or institution chooses the publishing software you use?
- What is the process for selecting new software or systems?
- What are the most important factors when making this decision?
 - Example of a decision your team recently made?

Experience with OJS/OMP

- Do you currently use OJS/OMP?
 - Which version of OJS are you currently using?
 - If not OJS 3, ask: Are you aware of the recent OJS 3 release?
- How did you learn of it?
- Do you have plans to upgrade?
- If not, why not? (obstacles)
 - For how long have you used it?
 - How did you become aware of it?
 - Tell me what your experience has been
- Things you think are working well.

- Things that have been a challenge
- If you could change one thing, it would be...
Have you used/considered other publishing systems?
If YES: Which ones; how do they compare; how did you make the choice to use OJS/OMP?

Experience with PKP

- Which of the following products/services are you familiar with?

<ul style="list-style-type: none"> ○ OJS ○ OMP ○ OCS ○ OTS 	<ul style="list-style-type: none"> ○ PKP School ○ PKP PN ○ PKP Index ○ Support Forum
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PKP Sustainability

Potential to support (financially or otherwise)

- Does your institution currently pay for a publishing platform or other software?
Which platforms? for which products?
- Does your institution currently pay to participate in community-wide OA initiatives?
 - Which ones?
 - In what ways do you participate?
 - What works well with those programs? What does not?

Interview Guide – PKP/PS Clients

[In addition to the background questions above, include the following questions, specifically concerning their experience as a client of PKP/PS]

Experience with PKP/Publishing Services

- For how long have you been a client of PKP/PS?
- Describe your experience with set-up and customization.
- Describe your experience with support, when needed?
- Perception of PKP/OJS
- Awareness of alternatives

PKP sustainability

Potential to support

- Does your institution currently pay to participate in (other) community-wide OA initiatives?
 - Which ones?
 - In what ways do you participate?
 - What works well with those programs? What does not?
- PKP is considering the range of ways it can have the greatest impact in supporting scholarly publishing. Which of the following would be most useful to you in your work (discuss each):
 - Developing new tools for publishing (such as?)
 - Staying at forefront of changes in publishing, and offering business intelligence to the community (research, consulting)
 - Organizing and supporting the community of those who use PKP's software, through increased outreach, education, advocacy, and engagement with the community.

Additional Questions for Stakeholders and Partners

[In addition to relevant questions above, include the following questions for key stakeholders/partners, including development partners and sponsors, as well as those benefiting from using OJS for separate businesses and organizations]

Background

- Tell me about the role you currently play in terms of PKP
 - Since when have you been involved?
 - Describe how you work with PKP.
 - What type of partnership
 - How does your organization engage (what functions, how much/often)
 - What governs the relationship? Has this role changed over time? If so, how?
- What do you see as the strongest attributes of PKP today?
 - Prompt: ojs, omp, etc..
- Are there things you wish it could do better?
 - What do you see as its weaknesses?
 - Prompt specifically about individual services...
- What are the chief concerns your (faculty, students, authors, other stakeholders) have concerning publishing solutions today?

COMMUNITY PARTICIPATION

- In what ways have you so far participated or engaged with PKP?
 - Do you participate on the Support Forum (<https://forum.pkp.sfu.ca>)?
 - Do you participate in open source software development e.g. using Github?
 - Have you participated in translation contributions to PKP software?
 - Have you communicated with the PKP development team?
 - Do you have staff that works in a technical capacity?

FOR DEVELOPMENT PARTNERS:

- In what ways have you contributed to OJS? How often?
- Have you contributed to other PKP software? (which ones? in what way?)
- How did you decide to focus on this?
 - How did the process go?
 - What went well? What could have gone better?
- In what way are you participating today?

FOR SPONSORS

- For how long have you supported PKP in this way?
- What was the reason you started?
- How do you engage with PKP today? (Ask for a specific example of the most recent time)
- What other community-based OS or OA initiatives does your institution support currently?