

Aligning Open Access Publication with the Research and Teaching Missions of the Public University: The Case of the Lethbridge Journal Incubator (If 'if's and 'and's were pots and pans)

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Those of us who hope to shape what scholarly communication will become need to understand that scholarly communication, like the larger research enterprise, is a public good and that, as such, it requires subsidy to maximize its benefit. Subsidy exists in the established system, but we often do not see it because the channels the subsidy travels are long-standing and familiar. As we consider new mechanisms for scholarly communication, we need to look carefully at the established system. We need to follow the money and see where it goes, determine the value provided by those who take the subsidy, and decide whether there are cheaper or better means for providing that value. Changing how this subsidy is channe[l]led will be one of the most important moves we can make in creating new business models for the distribution of scholarly content. [\[1\] \[#N1\]](#)

Abstract

The Lethbridge Journal Incubator is a joint project of the University of Lethbridge Library, School of Graduate Studies, and Faculty of Arts and Science. Its goal is to address the issue of sustainability of gold open access journals by aligning the publication process with the educational and research missions of the public University. In this way, the open access publication, which is more commonly understood as a cost center that draws resources away from a host university's core missions, is transformed into a sustainable, high-impact resource that improves retention and recruitment. It does this by providing graduate students with earl experience with scholarly publishing (a proven contributor to in- and post-program student satisfaction and career success), highly-sought after research and technical skills, and project management experience. This article provides a background to the problem of financing gold open access publication and reports on the experience of the researchers responsible for

establishing the incubator as it leaves its experimental phase and becomes a center of the University.

Introduction

Open access publication involves the dissemination of research results to the public without cost to the user. [2] [#N2] In theory, this should not be hard to achieve. In contrast to other industries that have been transformed by the World Wide Web, [3] [#N3] such as the music or newspaper business, the scholarly communication business looks particularly well-structured to support free distribution of information as a public good. Its “product” (i.e. the article reporting on basic research) is produced, evaluated, and consumed almost entirely within the public and not-for-profit sectors. [4] [#N4] The research on which this product is based takes place for the most part in labs and libraries that are supported wholly or largely in part by the public purse. The people who do the research, write, evaluate, and select the articles are, for the vastly greater part, salaried employees of publicly-funded organizations. The customers who, under the traditional model, pay for the publication of this research through their subscription and membership fees are almost entirely from the same largely publicly-funded institutions whose researchers supplied the content in the first place. While the production costs of the publication process are not negligible, they nevertheless represent a small fraction of the total costs borne by the public to support the world which it reports. [5] [#N5] Nobody in this production and consumption cycle (except the employees of the publishers who are responsible for managing the review, production, and dissemination process) earns their living directly from revenue generated by these publications. While it is true that researchers tend to be evaluated on the basis of their publishing “productivity,” this productivity is never measured in terms of generated revenue or financial efficiency. Unlike, say, a pop song or a Hollywood movie, a scholarly article that is distributed for free is as valuable to its authors and their home institutions as one that is distributed for \$40. It may be more valuable, as some research suggests, free distribution results in wider use, citation, and evidence of impact. [6] [#N6] Moreover, the very means by which contemporary research communication is distributed was in part *designed* to facilitate its (free) dissemination. The web was first proposed by Tim Berners-Lee as a means of managing the storage and distribution of technical and scientific documentation at the (publicly funded) European Organization for Nuclear Research, CERN. [7] [#N7] In contrast to photographs, music and video files, and other forms of communication for which the disruptive potential of the web as a means of dissemination became apparent soon after its invention, [8] [#N8] scientific communication was included in the web's design right from the very beginning. Journals and articles are a node in Berners-Lee's initial diagram of the network of relationships the web was designed to encompass. [9] [#N9] The original “tarball” (i.e. compressed file) used to distribute the system contained individual research articles and a list of freely accessible “Electronic Journals” alongside the basic web software. [10] [#N10] Even the questions of how copyright and access restrictions to information might be enforced were considered as part of this initial proposal—before being dismissed as “non requirements” of the system on the ground that they are “of secondary importance at CERN, where information exchange is still more important than secrecy.” [11] [#N11] Given this alignment of structural and technological incentives

favor of the free distribution of research communication, the real surprise about open access publication is therefore not how quickly it has caught on but how slowly. While an ever increasing number of articles are being published to the web on an open access basis, the percentage remains relatively small in comparison to the overall production of scientific and scholarly communication. In 2011, only about 17% of articles indexed by Thompson's Web of Science and Elsevier's SCOPUS were published on any kind of open access license, [12] including those published on a hybrid (i.e. simultaneous subscription and open access publication). It also includes those published on an embargoed basis (i.e. open access after a period of closed access), which is a share that has been growing at a pace of about 1% per year for the last decade. [13] Only about 65% of these open access articles (or 11% of the total output of research communication) were published on a “direct Gold” basis—that is to say immediately by the journal itself and without cost to the user. In other words: two decades after Berners-Lee first proposed his disruptive new “document management system” for technical and scientific communication at CERN, and in contrast to the near complete disruption introduced by the web into other content-focused industries, nearly 90% of all research communication is still being published using essentially the same user-pay model that has been the norm since the first scientific journals were established three-and-a-half centuries ago. [14]

Following the money

There are many explanations for the slowness of this growth in open access publication. The (pre-web) scholarly communication industry became immensely profitable in the course of the second half of the twentieth century, [15] and the major commercial presses have been highly motivated to maintain profit margins that remain *on average* above 30%. [16] Scholarly societies, similarly, though far less profitable than commercial academic publishers, have traditionally seen subscriptions to “the journal” as their main membership benefit and, hence, a major source of income. [17] Researchers, finally, operate in a prestige economy that rewards evidence of good reputation (gained by publishing in “top” journals, regardless of their cost to the user) over financial or dissemination efficiency [18]: while they do not benefit directly from the revenue their publications generate, they also do not suffer directly from the costs their institutions must incur in paying for the journals in which they publish. This means that they have very little incentive to risk publishing in newer (and hence potentially less prestigious) open access journals over historically well-regarded, though potentially less easily accessed and more costly, subscription-based venues. Another problem, however, has been the sustainability of the “gold” open access model itself: while publication costs represent a relatively small portion of the total price of the research cycle, the money to cover these can be difficult to find in non-subscription-based models. In the traditional model, the cost of production is paid for through the fees publishers charge libraries (and to a lesser extent, individual researchers) to access their content. As such, they represent a *de facto* in-kind donation to research projects by these institutions or individuals. Researchers use the publications funded this way in their research, but they do not have to budget for them in their grant applications or institutional subventions because access is being supported by other (and other's) budget lines.

By removing subscription income from the publishing economy, gold open access publication

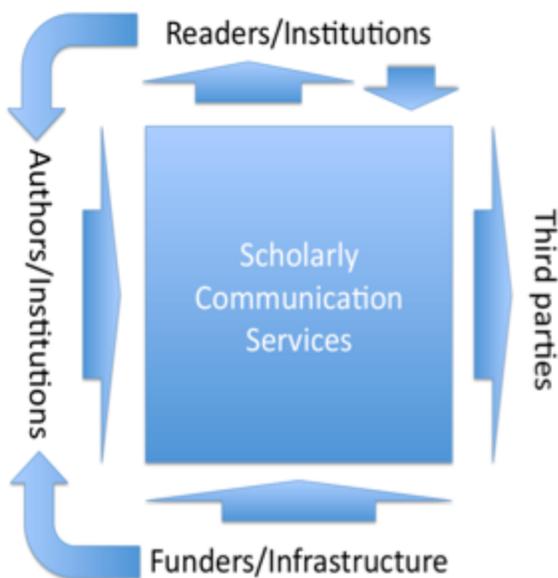
models make it more difficult to access this traditional (though largely unacknowledged) subsidy. Libraries that are able to free up funds formerly spent on journals subscriptions may have other priorities, especially in light of the cuts many were forced to make to other activities and budget lines during the “serials crisis”—a period of extremely high and rapidly increasing subscription costs over the last 25 years that greatly stressed research budgets. [19] [19] Granting agencies, for their part, are notoriously unwilling to support operating costs and overhead [20] [20]: it seems unlikely that many will embrace eagerly what is, in essence, a transfer of responsibility for the funding of publication infrastructure from the subscription budgets of libraries to the research budgets of grant applicants. While some funders have explicitly begun to add extra funds to the competitions to support author-side publication fees, [21] [21] others have done little more than allowed for such costs to be charged against existing budgets, without the addition of extra funds to cover this new (to the researcher's side of the budget) cost. [22] [22] Compounding this problem is the fact that author-side publication-payment schemes are a cost rather than an investment to the institution or individual that pays them. [23] [23] In the case of traditional subscription models it is possible to justify the money libraries spend (however reluctantly) on the basis that they improve the research capability of the institution: subscriptions provide access to content and libraries that pay more in subscription fees have more journals (and hence a stronger research infrastructure) than those that do not. Author-side publishing charges or institutional subsidies, on the other hand, use up scarce funds but do not obviously build capacity (other than, potentially at best indirectly, in terms of reputation and prestige). The more an institution spends on publication fees, the better the *rest* of us are (because we have greater access to its researchers' work), but the fewer resources the institution itself keeps for the direct support of its own teaching and research missions. A university or organization that pays a lot in author-side publication fees is, in essence, taking money away from its own researchers to help build the research capacity of society as a whole, rather than differentially investing in its own infrastructure.

This is a public good but a difficult sell. Open access publication will continue to struggle as long as its business model seems to harm (or at best take advantage of) the institutions that most actively participate in it.

The Lethbridge Journal Incubator

The Lethbridge Journal Incubator is a publishing, training, and research support program that attempts to address this problem of open access funding. The basic premise is that the process by which open access publications are edited, managed, and produced contain considerable hidden value that can be unlocked and used to increase the research and teaching capacity of the institution that subsidizes them. In this model, institutions subsidize the publication of open access journals, not only because doing so represents a public good, but also because open access journals increase institutional capacity by improving the ability of the University to conduct its research and teach its students.

A new understanding of the economics of open access publication



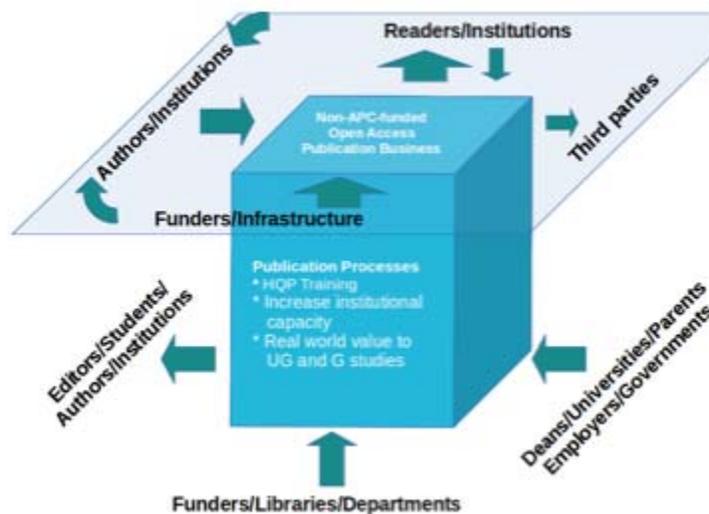
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Illustration 1: Traditional scholarly communication economy

The Incubator works by unlocking traditionally hidden value inherent to the research communication process. Traditionally, scholarly and scientific publication, whether open access: subscription-based, has been understood as a two dimensional economy in which the economic value of the scholarly communication lies entirely in the exchange of information for goods (and vice versa) among authors, publishers, funders, and institutions [24] [#N24]. This is true whether the economy is open or closed access. In the case of a subscription-based publication, authors are paid by institutions to produce research which is then provided to publishers (usually for free) who, in turn, sell the content back to universities at a price that covers their costs and profit. In the case of gold open access journals the same basic economy obtains, except that subscription income is replaced by some kind of author-side funding—Article Processing Charges (APC) paid by authors to have their work published or subsidies from funding agencies or institutions to fund the journal's operations. [25] [#N25] Regardless of whether the model used is user-pay or author-pay, however, the important thing for our purposes is the fact that the production process remains a cost rather than an investment: it is something that must be paid for from funds that are, at best, then not being used for other research or teaching purposes or, at worst, actually being diverted from such purposes. [26] [#N26] The Journal Incubator, in contrast, understands scholarly communication as a three dimensional economy, in which the process by which the communication is managed and published can be as much a part of the exchange as the content funding.

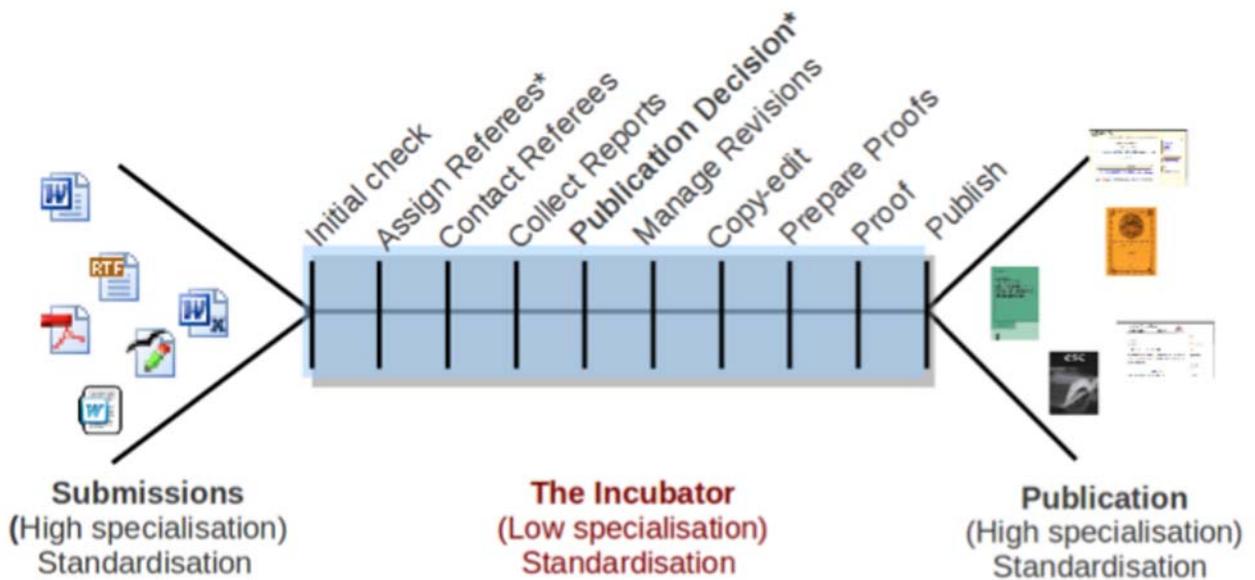
In other words, in this model, the production process is also used to create value: it provides training experience and opportunities for students to learn more about the publication process, which is an experience that has been shown to improve Graduate School outcomes [27] [#N27]. It also reduces the administrative work required from scholar-editors, making work in this area more

attractive to junior and mid-career scholars [28] [#N28]; and it helps University Librarians and research funding agencies that are interested in addressing the problem of lack of scalability (an opportunities for abuse) inherent in the APC open access financing model by providing an alternate mechanism for subsidizing open access publication. [29] [#N29] By aligning the scholarly publication process with the educational and research interests of institutions, funders, faculty, and students, the Incubator turns research dissemination into a research and teaching opportunity, rather than a cost center that draws resources away from these central concerns.



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Illustration 2: Incubator economic model



desirable but not
possiblepossible and
desirablepossible but not
desirable

* Step requires decision by academic editors

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Illustration 3: The incubator breaks down the publication process into high- and low-specialisation tasks

The publication process

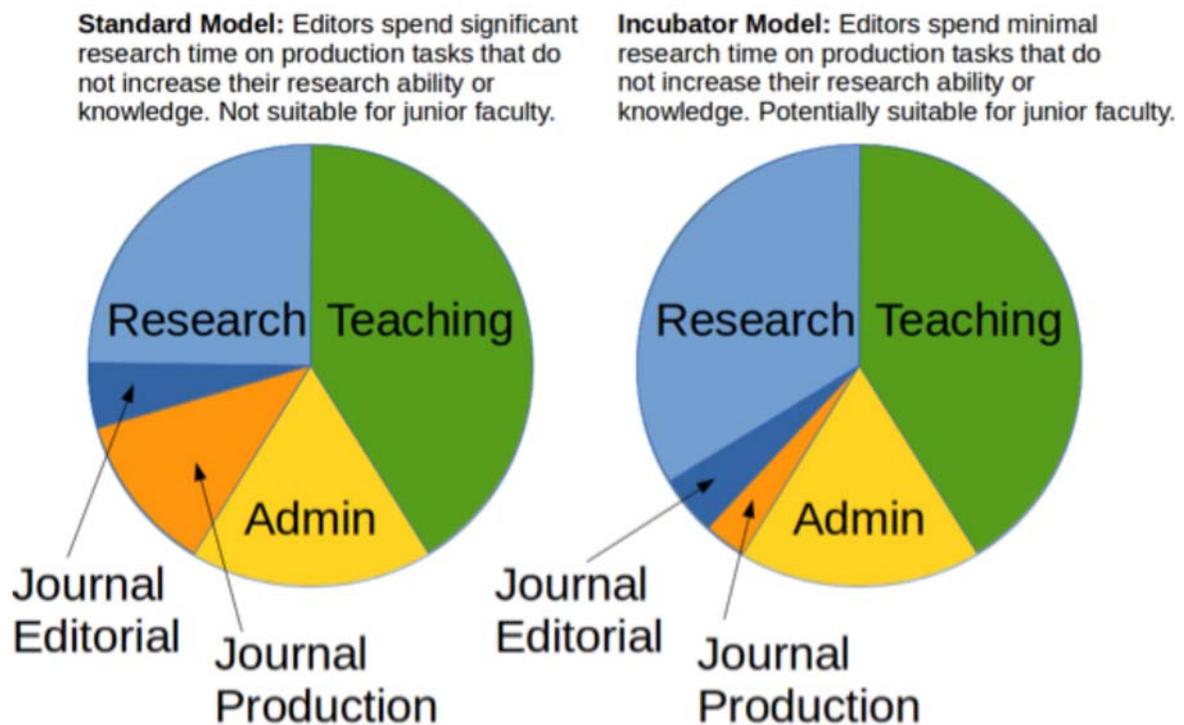
The Incubator works by training graduate students in technical and managerial aspects of journal production. On the one hand, academic journals are highly specialized publications that require high-level, research-domain specific skills and knowledge from their authors, editors, and readers. On the other, the actual process by which journals are produced is relatively standard and requires very little knowledge of a specific research-domain [30] [#N30]. Under the supervision of scholar-editors and professional librarians, the incubator introduces students to the core elements of the workflow that underlies the production of all academic journals and trains them in detail in one more technical aspects of journal production (copyediting, preparation of proofs, document encoding, or the use of standard journal-production software). It also, more broadly, provides training in the duties of an academic journal managing editor and in understanding the qualities that make a manuscript suitable for consideration for publication. Students gain experience supervising the progress of articles through the workflow from receipt to publication, corresponding with authors and referees, and keeping minutes of editorial meetings. Then they assume managerial responsibility for a title in their broad research domain while also working as production assistants; in doing so, they will specialize in one or more technical aspects of journal production across all titles, regardless of discipline, in the Incubator as a whole.

This mix of duties allows students to acquire firsthand experience with the norms and practices involved in the production and dissemination of contemporary research in their discipline. It also provides professional training in and supervised experience with cutting-edge digital technologies and processes that are both highly sought after and easily generalizable. [31] [#N31] By acting as managing editor for a journal, students meet and work closely with editors and research-active faculty in their domain; in addition to observing how research is produced and adjudicated in the discipline, students are also discovering important developing areas of inquiry and, through the correspondence with editors, authors, and referees, meeting research-active potential future supervisors and collaborators. On the other hand, by acting as a production assistant specializing in one or more areas of contemporary journal production across the journals in the Incubator, they acquire skills that are in high demand across the digital economy—both within academia and more broadly in government and private industry. This helps demonstrate the extent to which graduate training involves the acquisition of skills and experiences that are generalizable outside their research discipline and serves as a potential recruiting feature for the graduate school sponsorship

the project. [32] [#N32]

The Journal Incubator not only enriches the graduate student experience but also increases the research capacity of the University. The skills graduate students acquire in the course of working in the Incubator, for example, are identical to or closely aligned with those required for many new forms of digitally-assisted research in the Humanities and Social Sciences. Students who go through the Incubator program are well-equipped to take on significant, digitally assisted, research tasks as part of their thesis research or their work with faculty on faculty-directed research projects.

Just as importantly, the Incubator can materially assist faculty members who assume editorial responsibility for academic journals in their discipline. It can remove most of the administrative burden currently associated with editing an academic journal and provide new editors with training and support in running journals according to best practice.



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Illustration 4: Expected benefit for faculty

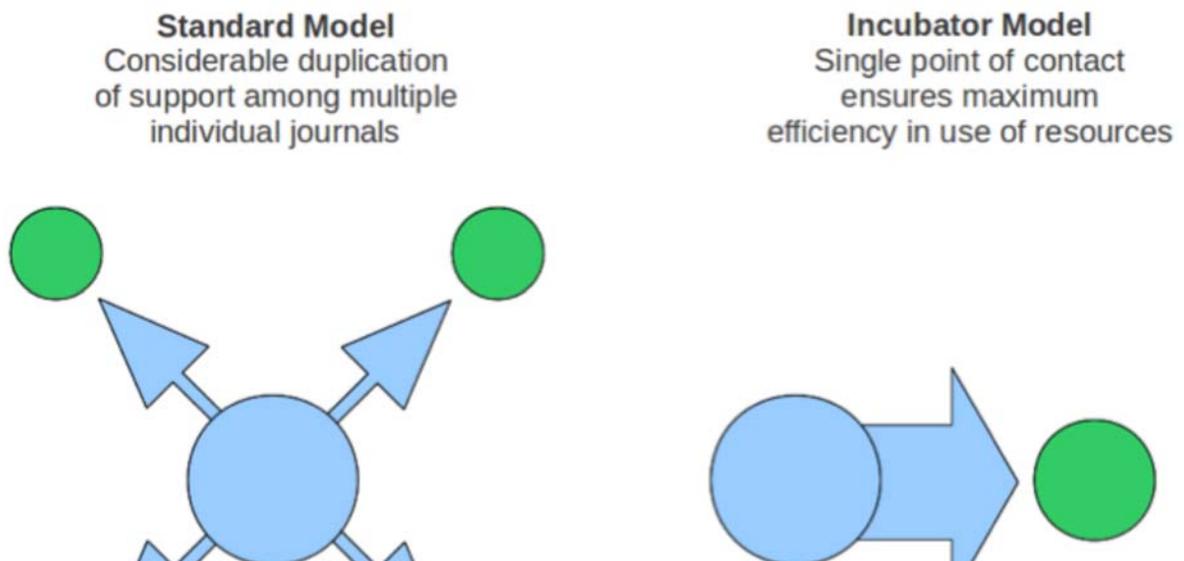
When properly implemented, this frees up faculty-editors to concentrate on the areas of their journals that require specialist domain knowledge: the selection of referees, adjudication of

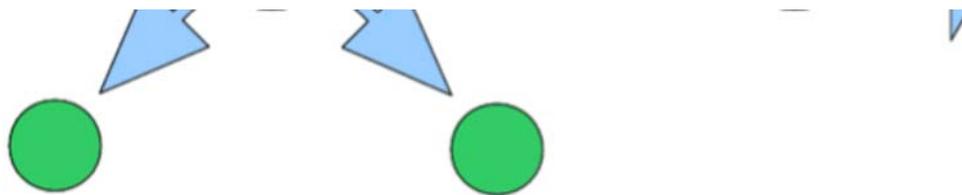
articles, and the recruitment and support of authors. It also can make assuming editorial responsibility for a journal much less of a career-gamble for beginning or mid-career academics meaning more faculty may consider assuming editorial duties at high profile existing journals or beginning new journals in response to developments in their research domains.

Finally, the Incubator improves the research capacity of the University by increasing the possibilities for acquiring outside funding. A core principle behind the Incubator is that the back office operations of most scholarly journals are (or can be made to be) very similar to each other regardless of subject domain; this is, after all, part of what makes commercial scientific publishing so profitable. By developing in-house expertise for each stage of the journal publication process from production to facilitating indexing and aggregation, the Incubator is able to ensure that all journals in its portfolio are able to maximize their chances in national funding competitions and improve the efficiency with which they use such funding once it is acquired. Since the Incubator already has the necessary technology, training protocols, and production staff in place, moreover, the marginal cost of adding a new title to the roster is relatively low. This means that, in contrast to APC-based funding, the Incubator model is inherently scalable. With the financial efficiencies gained by collecting the back-offices of existing journals together in a single location, the Incubator is able to support new journals as they establish themselves and prepare to seek external funding far below the cost otherwise associated with a start-up operation.

Aligning the costs of publication with the research and teaching missions of the university

The key innovation introduced by the Journal Incubator, therefore, is the way it aligns question sustainability in journal publication with the educational and research missions of the university. In financial terms, this means that a large part of the funding for journal production within the Incubator is derived from existing university budget lines: the Incubator, in this sense, does not much represent a new expense as much as it does a way of increasing the impact of funds already budgeted to accomplish similar ends.





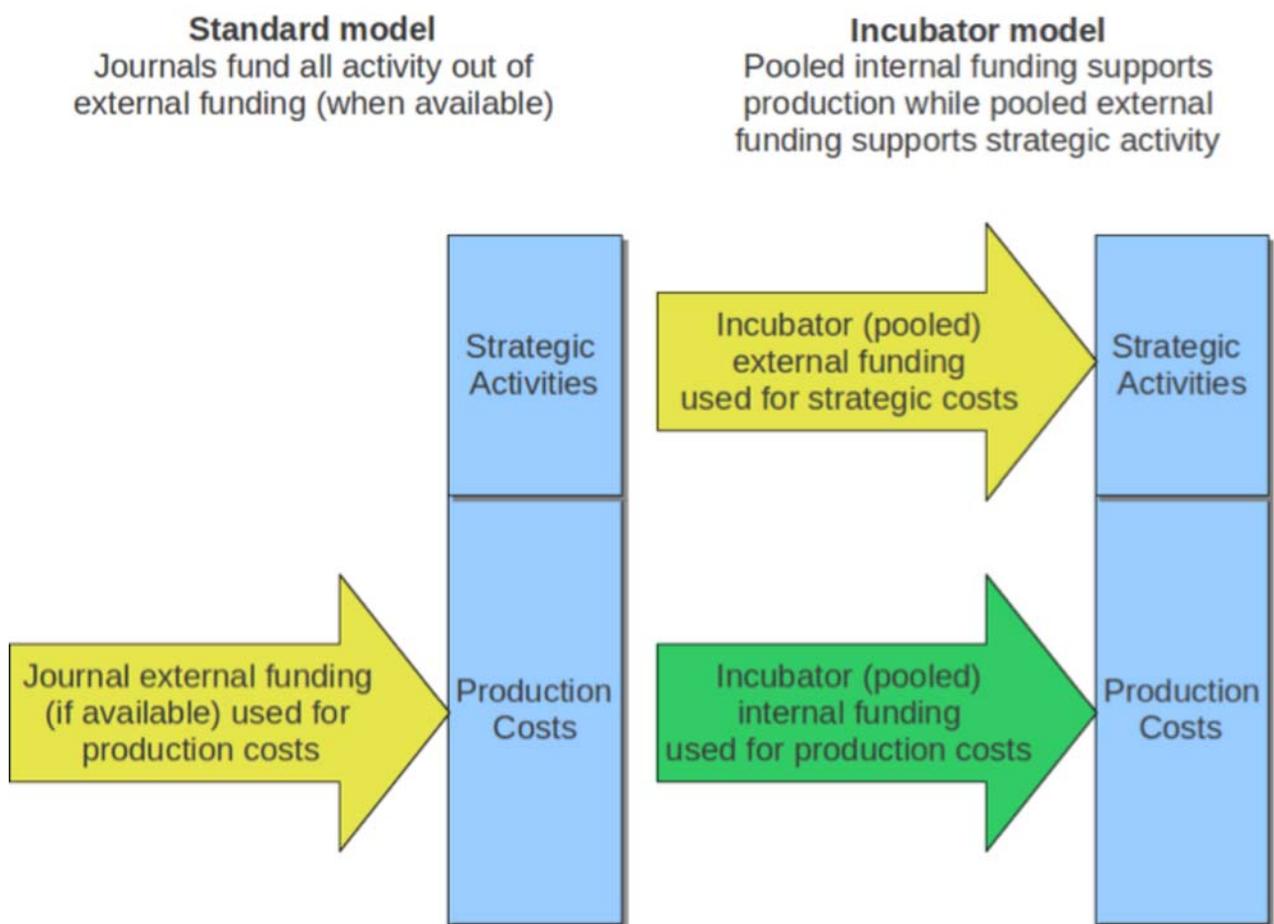
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Illustration 5: Incubator allows support units to maximise efficiency of resource allocation

The most obvious example of this alignment involves the cost of the Incubator's graduate student staff. The University of Lethbridge provides its best students with stipends tied to educationally valuable research and teaching experience. As a provider of high-quality graduate-level research training and experience, the Incubator, in essence, becomes a contractor to the school for the provision of part of that training. The Incubator provides a form of training that is uniquely transferable and helps the school address contemporary concerns about the purpose and place of graduate study in an age in which the traditional graduate-school-to-faculty-position model is under severe pressure. [33] [#N33] Similar alignments exist with other units on campus. Currently, many journals on campus receive small amounts of financial support for their back office operations from individual editors' faculties. [34] [#N34] Because these offices are almost entirely independent of each other, this means that there is considerable duplication in how these funds spent: each journal uses its funding to support parallel back offices, production and technology expenses, and staff. Similarly, support units on campus, such as the office of research services, library, and information technology are asked to provide in-kind support to each journal in a piecemeal and uncoordinated fashion. Advice and assistance on topics, ranging from applying for grants to technical support, is provided to editors without any real requirement that they coordinate their requests or build a knowledge-base for common questions and tasks. By centralizing and professionalizing the back offices of journals on campus and providing a trained staff to assist editors in the operation of their journals, the Incubator improves the efficiency and effectiveness with which this already-assigned financial and in-kind support is used. Through its training materials and focus on standardization of workflow and technology, the Incubator itself becomes a *de facto* knowledge-base. Requests for advice and assistance come from a single location and the answers provided can be applied across all journals on campus through the use of standard protocols and systems. Likewise, funding from the faculties is not used to pay for duplicate services: by supporting journals through a combined back office, faculties are able to reduce their expenditure on training, technology, and services, while considerably increasing the impact this support provides. This approach can involve an absolute increase in training costs, but there is more turnover in the incubator than can be the case with non-student labor in tradition

offices and publishers and each new student must be trained from scratch. But from the perspective of the University, these training costs are easier to bear as they are defined as, in essence, tuition costs rather than journal-support expenses.

The Incubator model also allows journals to significantly increase the impact of their external funding. Many journals in the humanities and social sciences are funded in whole or in part by subscription revenues or subvention from scholarly societies. In Canada, such journals are also often funded to a certain extent by funding from the federal government through the Social Sciences and Humanities Research Council (SSHRC). Currently, journals that receive such funding tend to end up using it for their day-to-day production expenses including paying for secretarial and technical support, dissemination and capital costs, training expenses, and the like.



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Illustration 6: Incubator pools and leverages external funding to cover strategic costs

Because managerial and production activities at the Journal Incubator are paid for largely through stipends provided to students by the graduate school, the Incubator can use any external funding it receives to develop top-quality training materials. It also allows the Incubator to invest in top-quality production equipment and pay for ancillary expertise, such as professional office

management and student supervision, that will help further improve the quality and impact of its publications. [35] [#N35] The broad expertise acquired by running a collective back office of this nature, moreover, helps maximize the amount of external funding available to all journals on campus; this is accomplished by ensuring that all potential sources are explored and that journal production and dissemination is optimized to meet the demands of potential sources of external funding. Because training in the Incubator is funded primarily by the in-kind and cash contributions of its partners, success in external funding competitions is not required of journals for participation; however, it is desirable and provides evidence that a journal is successful. Every journal in the Incubator provides training opportunities for students; those that have funding help improve the quality and cost-effectiveness of that training by bringing in supplemental funding. But all journals, funded or not, contribute to the success of the training mission. While the availability of external funding to support journal publication varies from jurisdiction to jurisdiction (and even from discipline to discipline), such support supplements but is not required for the incubator model to succeed. Incubator past and present

The Incubator is now in its fourth year of operation. For the last three, it has been operated on an experimental/prototype basis with the cooperation of the Library and School of Graduate Studies. In this time, it has supported the publication of more than 60 refereed articles in three journals: *Digital Studies/Le champ numérique*, *The Canadian Journal of Netherlandic Studies*, and *Dig Medievalist*. Nine graduate students have worked as managing editors in the Incubator: Mohammad Akbar (Management), Gillian Ayers (Sociology), Titi Babalola (English), Jessica Ba (English), Kelaine Devine (New Media), Heather Hobma (English), Madoka Mizumoto (Linguistics), Jessica Ruzek (English), and Kayla Ueland (Sociology). Researchers associated with the project have presented several lectures (including one invited keynote and several other talks by graduate students associated with the project), one poster, and have published one chapter on aspects of the Incubator's business model and practice. [36] [#N36] Members of the Incubator research team have also been asked to advise university libraries and commercial presses on the implications of its model for open access publication. [37] [#N37]

The Incubator is now on track to become an official research center of the University. This involves longer-term commitments to the project from the School of Graduate Studies, University Library and academic faculties and an expansion in both the number of journals supported and the number of students involved in its training program. Recent success in external funding applications on the part of one of the journals has allowed the Incubator to begin improving and regularizing the librarianship and training services and advice it offers. It has received additional funding to pay for the development of improved training manuals and to hire a Library and Information Studies Intern to develop improved strategies for measuring and increasing journal impact and visibility. Although the initial journals in the Incubator joined on an informal basis, are now in the process of developing more formal contract terms with the assistance of the University's lawyers and Research Office. The incubator is also investigating commercializing its model as a publishing service for other universities.

Conclusion

The real surprise about open access publication is how slow its growth has been over the last 20 years, especially when one considers all the structural and historical factors that would seem to favor its adoption. This is especially true when the relative stability of the research communication industry is compared to the far more thorough-going disruption caused by the web in other industries.

One important cause of this slow growth has to do with the question of who pays for the production and dissemination parts of the research cycle. Although, as Lewis points out, the traditional subscription-based publication system was run almost entirely on the basis of subsidies, these subsidies were spread across several actors; they were funded primarily by the institutions that paid for the researchers and their labs, the funding agencies that paid for the research-activity being reported on, and the libraries that paid for the subscriptions that allowed those researchers to access the latest literature. The removal of subscription income through gold open access publication models eliminates one major source of income from the equation—income that must be made up from other sources. The trouble, however, is that while subscriptions represent an investment in an individual university's research infrastructure, open access subsidies are, at best, donations to the greater good that take money away from core teaching and research activities without directly improving the capacity of the institution that makes them.

The Lethbridge Journal Incubator addresses this problem by unlocking the training and administrative support potential of the production process. By offering to train graduate students in the extensible and transferable digital skills associated with contemporary journal production, providing scholar-editors with relief from the administrative burden associated with running a journal, and streamlining the paths by which administrative, technical, and financial support is delivered to individual journals on campus, the Incubator creates an open access publishing model that improves the research and teaching capacity of the university, turning what is usually understood by administrators as a cost center into an investment opportunity. Now in its fourth year, the incubator represents a viable method of funding gold open access publications in a way that avoids taking resources away from core activities.

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Heather Hobma is a recent M.A. from the Department of English at the University of Lethbridge in English (specialising in Digital Humanities and Cultural Heritage). She was the managing editor of Digital Studies/Le champ numérique for three years and is now an instructor in English at Mount Royal University.

Sandra Cowan is a Professional Librarian at the University of Lethbridge whose interests include Scholarly Communication and the Digital Humanities. She is a founding member of the Incubator.

governing committee.

Gillian Ayers is a former M.A. student in the Department of Sociology at the University of Lethbridge and a Managing Editor of both *Digital Studies/Le champ numérique* and the *Canadian Journal of Netherlandic Studies*. She was the first graduate student employee of the Incubator.

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Emma Dering is an undergraduate English major at the University of Lethbridge. She is a former employee of the Incubator.

Inge Genee is Associate Professor of Linguistics and Chair of the Department of Modern Languages at the University of Lethbridge. She is Editor in Chief of the *Canadian Journal of Netherlandic Studies*.

Notes

1. David W. Lewis, "The Role of Subsidy in Scholarly Communication," *EDUCAUSE Review* June 3, 2013, <http://www.educause.edu/ero/article/role-subsidy-scholarly-communication> [<http://www.educause.edu/ero/article/role-subsidy-scholarly-communication>]. [#N1-ptr1]
2. For three useful surveys of the concept, see Peter Suber, "Open Access Overview (definition, Introduction)," *Peter Suber*, December 16, 2013, <http://legacy.earlham.edu/~peters/fos/overview.htm> [<http://legacy.earlham.edu/~peters/fos/overview.htm>]; John Willinsky, *The Access Principle: The Case for Open Access to Research and Scholarship* (Cambridge, Mass.: MIT Press, 2006); Martin Paul Eve, *Open Access and the Humanities: Contexts, Controversies and the Future* (Cambridge: Cambridge Univ. Press, 2014). Eve's book came to our attention while this article was in production. ♦ [#N2-ptr1]
3. Although "Web" and "Internet" are commonly used interchangeably, they are technically different things (see Vangie Beal, "The Difference Between the Internet and the World Wide Web," *Webopedia*, June 24, 2010, http://www.webopedia.com/DidYouKnow/Internet/Web_vs_Internet.asp [http://www.webopedia.com/DidYouKnow/Internet/Web_vs_Internet.asp]). In this paper, the "Internet" refers to the network that allows

computers to communicate with each other based on protocols and techniques developed initially by DARPA and others in the late 1960s and early 1970s. “The Web,” on the other hand, refers to a specific approach to information access and navigation over the Internet (using the HTTP protocol) developed at CERN by Tim Berners-Lee in 1989-1990. As mentioned below, the Web was originally designed for improving the dissemination of technical and scientific documentation. Other services that use the Internet but are distinct from the Web in this understanding include email and ftp (file transfer protocol). ♣

[#N3-ptr1]

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- [#N6-ptr1]
7. Tim Berners-Lee, “The Original Proposal of the WWW, HTMLized,” 1990, <http://www.w3.org/History/1989/proposal.html> [<http://www.w3.org/History/1989/proposal.html>]. ♣ [#N7-ptr1]
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[/news/newspaper_next.asp](#)]. ♦ [#N8-ptr1]

9. Berners-Lee, “The Original Proposal of the WWW, HTMLized,” 1990. ♦ [#N9-ptr1]
10. CERN, “Index of /History/19921103-Hypertext/hypertext,” November 3, 1992, <http://info.cern.ch/hypertext/> [<http://info.cern.ch/hypertext/>]. ♦ [#N10-ptr1]
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12. Mikael Laakso and Bo-Christer Björk, “Anatomy of Open Access Publishing: A Study of Longitudinal Development and Internal Structure,” *BMC Medicine* 10, no. 1 (October 22, 2012): 9, doi:10.1186/1741-7015-10-124. Similar ratios (accounting for growth) are found Chawki Hajjem, Stevan Harnad, and Yves Gingras, “Ten-Year Cross-Disciplinary Comparison of the Growth of Open Access and How It Increases Research Citation Impact,” *IEEE Data Engineering Bulletin* 28, no. 4 (December 2005): 39–47. The Economist predicts faster growth in the production and generated revenue due to new government initiatives requiring Open Access publication (The Economist staff, “Free-for-All,” *The Economist*, May 4, 2013, <http://www.economist.com/news/science-and-technology/21577035-open-access-scientific-publishing-gaining-ground-free-all> [<http://www.economist.com/news/science-and-technology/21577035-open-access-scientific-publishing-gaining-ground-free-all>]). ♦ [#N12-ptr1]
13. Open access is commonly divided into two main types: “Green” open access, which involves the self-archiving of research papers by authors, and “Gold” open access, in which papers are published on an open access basis by the journals in which they appear (see Suber, “Open Access Overview (definition, Introduction)”). There are also several subtypes of each. In the case of “Green” open access, researchers can archive their papers in institutional repositories, personal web-space, disciplinary archives like arXiv, or commercial social networks like Academia.edu, LinkedIn, or Slideshare. In the case of “Gold” open access, some common distinctions are between direct open access (in which publisher releases a paper on an open access basis immediately upon publication) and Delayed or Embargoed open access (in which articles are released on an Open basis after period in which they are made available exclusively to subscribers). Finally, there are different financing models in gold open access, including Article Processing Charges (APC) in which authors are charged a fee to publish in a journal; Hybrid, in which a normally subscription-only or delayed open access journal allows authors to publish their work on an immediate open access basis in exchange for a payment; and subsidized open access, in which the open access publisher is funded directly by a government, institution, or funding agency without direct charge to authors or users (for an early survey of different types of open access business models, see Willinsky, *The Access Principle*; other important studies of business models include Chen Chi Chang, “Business Models for Open Access Journals Publishing,” *Online Information Review* 30, no. 6 [2006]: 699–713, doi:<http://0-dx.doi.org.darius.uleth.ca/10.1108/14684520610716171> [<http://0-dx.doi.org.darius.uleth.ca/10.1108/14684520610716171>]; Matthew Cockerill, “Business Models in Open Access Publishing,” 2006, <http://demo.openrepository.com/demo/handle/2384/2367>

[<http://demo.openrepository.com/demo/handle/2384/2367>]; Open Access Directory, “OA Journal Business Models,” Wiki, [September 12, 2013], http://oad.simmons.edu/oadwiki/index.php?title=OA_journal_business_models&oldid=18279 [http://oad.simmons.edu/oadwiki/index.php?title=OA_journal_business_models&oldid=18279]; Wellcome Trust, *Cost and Business Models in Scientific Research Publishing: A Report* [Histon, Cambridgeshire: SQW Ltd., 2004]; Sara Schroter and Leanne Tite, “Open Access Publishing and Author-Pays Business Models: A Survey of Authors’ Knowledge and Perceptions,” *Journal of the Royal Society of Medicine* 99, no. 3 [March 1, 2006]: 141–4; Laakso and Björk, “Anatomy of Open Access Publishing”; Bo-Christer Björk, “The Hybrid Model for Open Access Publication of Scholarly Articles: A Failed Experiment?,” *Journal of the American Society for Information Science & Technology* 63, no. 8 [August 2012]: 1496–1504, doi:10.1002/asi.22709; *ibid.*; David J. Solomon and Bo-Christer Björk, “A Study of Open Access Journals Using Article Processing Charges,” *Journal of the American Society for Information Science and Technology* 63, no. 8 [2012]: 1485–95, doi:10.1002/asi.22673). ♣ [#N13-ptr1]

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26. This was a widely leveled criticism of the "Finch Report," which established the basis for the upcoming Research Council UK (RCUK) Open Access mandate (Working Group on Expanding Access to Published Research Findings, *Accessibility, Sustainability, Excellence: How to Expand Access to Research Publications*, June 18, 2012). The Finch Report strongly recommended the adoption of a Gold Open Access mandate with the use

APC as the preferred funding mechanism, a recommendation it estimated would require least £60 million per year in fees during a transition period. Critics argued that in the absence of new funding this cost would come out of existing research budgets—a prediction that has largely come true (see Thorley, “[Comment On:] RCUK Open Access Policy – Our Preference for Gold”).[♣] [#N26-ptr1]

27. William Christopher Brown, “Developing Professionally through Graduate Student Publications,” *In Progress* [2] (2012), <http://inprogressjournal.net/archives/current-issue/developing-professionally-through-graduate-student-publications/> [<http://inprogressjournal.net/archives/current-issue/developing-professionally-through-graduate-student-publications/>]; Denise Cuthbert and Ceridwen Spark, “Getting a GRIP: Examining the Outcomes of a Pilot Program to Support Graduate Research Students in Writing for Publication,” *Studies in Higher Education* 33, no. 1 (2008): 77–88; Jennifer E. Knieval, “Instruction to Faculty and Graduate Students: A Tutorial to Teach Publication Strategies,” *Portal: Libraries and the Academy* 8, no. 2 (2008): 175–86; Simon A. Lei and Ning-Kua Chuang, “Research Collaboration and Publication During Graduate Studies: Evaluating Benefits and Costs from Students’ Perspectives,” *College Student Journal* 43, no. 4 (2009): 1163–68; Carol A. Mullen, “‘What I Needed to Know to Get Published’: Teaching (Frightened) Graduate Students to Write for Publication,” *Journal on Excellence in College Teaching* 10, no. 2 (1999): 27–52; Ronald G. Ehrenberg et al., *Educating Scholars: Doctoral Education in the Humanities* (Princeton University Press, 2009).[♣] [#N27-ptr1]
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30. For a discussion of the different roles and how this division of labor is being impacted by digital publication, see Cass T. Miller and Julianna C. Harris, “Scholarly Journal Publication: Conflicting Agendas for Scholars, Publishers, and Institutions,” *Journal of Scholarly Publishing* 35, no. 2 (2004): 73–91, doi:10.1353/scp.2004.0008.[♣] [#N30-ptr1]

31. Specific skills required of entrants to contemporary academic publishing can be found in Katherine; Lippincott Skinner, "Library-as-Publisher: Capacity Building for the Library Publishing Subfield," *Journal of Electronic Publishing* 17, no. 2 (Spring 2014), doi:<http://dx.doi.org/10.3998/3336451.0017.207> [<http://dx.doi.org/10.3998/3336451.0017.207>]. See also, more generally, the articles found in "Education and Training for 21st Century Publishers," *Journal of Electronic Publishing* 17, no. 2 (Spring 2014), <http://quod.lib.umich.edu/jjep/3336451.0017.207?rgn=full+text> [<http://quod.lib.umich.edu/jjep/3336451.0017.207?rgn=full+text>]. ♣ [#N31-ptr1]
32. This focus on providing an educational and training opportunity as a companion to *gene* graduate studies distinguishes the approach outlined here from both the traditional "Research Assistant" approach used at many journals and the apprenticeship programs associated with various post-graduate publishing programs. Unlike the traditional approach, the Incubator is not an apprenticeship in a discipline, but a training program that provides technical and managerial skills to complement the disciplinary instruction students receive from their academic programs: the students do not learn how to publish their discipline from an editor-scholar, they learn how scholarly communication works from a team of editor-scholars, librarians, and publishing professionals. Unlike the apprenticeship programs offer by graduate programs in publishing, however, the Incubator model is also not primarily focussed on producing publishing professionals. Its goal, rather, is to train students from a variety of different disciplines about the publishing process. While some students do acquire an interest in pursuing careers in publishing, most benefit from this program by extension: it improves their understanding of the publishing process and teaches them skills they can use in other contexts. We are aware of only one other program with a similar emphasis: the (now closed) Office of Scholarly Journals formerly hosted at Arizona State University (see J. Kent Calder, "Taking the Accident Out of the Accidental Profession: ASU's Model for Supporting and Training (Journal) Editors," *Journal of Scholarly Publishing* 40, no. 2 [January 1, 2009]: 154–60, doi:10.3138/jsp.40.2.144). This program, however, was not directed primarily at supporting Open Access and did give preference to students enrolled in a graduate publication program. ♣ [#N32-ptr1]
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Professional Development: Teaching Graduate Students Transferable Skills Beyond the Discipline,” *Journal of Research Administration* 43, no. 1 (Spring 2012): 60–84, 6–7; Er Yeatman et al., *Transferable Skills for Master’s Students: A Paper from the Working Party for Master’s Degrees*, Report from the Transferable skills review committee (London: Imperial College, 2011).♣ [#N33-ptr1]

34. Willinsky, *The Access Principle*, Appendix B.♣ [#N34-ptr1]

35. An important question involves how journals can be encouraged to seek external funding when their operating costs are covered, in essence, by donations from the School of Graduate Studies. The Incubator accomplishes this by allowing editors to leverage any external funding they receive. While it asks editors of journals that have external funding help pay for the assistance they receive, it charges for this assistance at a rate of 70¢ on the dollar. This means that for every dollar of external funding an editor brings in, they receive an additional 60% in direct support: a 30% subsidy for production costs from the Incubator and a 30% cash bonus which they can use for non-production costs such as travel and workshops. Since the Incubator puts the extra money it receives from this clawback back into training, development, and support, they also benefit alongside every other journal from an improved back office.♣ [#N35-ptr1]

36. Sandra Cowan, “Open Access Journal Incubator at University of Lethbridge Library,” in *Library Publishing Toolkit*, ed. Allison P Brown (Geneseo, NY: IDS Project Press, Milne Library, SUNY Geneseo, 2013), 179–86, <http://idspress.idsproject.org/omp/index.php/IDSProject/catalog/book/25> [<http://idspress.idsproject.org/omp/index.php/IDSProject/catalog/book/25>]; Heather Hobma, “The Lethbridge Journal Incubator” (presented at the Congress of the Humanities and Social Sciences, Canadian Association of Learned Journals, Victoria June 3, 2013); Daniel Paul O’Donnell et al., “The Lethbridge Journal Incubator [Poster]” (Poster presented at the Digital Humanities 2013, Lincoln NE, July 2013), <http://people.uleth.ca/~daniel.odonnell/Research/journal-incubator-poster-digital-humanities-2013> [<http://people.uleth.ca/~daniel.odonnell/Research/journal-incubator-poster-digital-humanities-2013>]; Daniel Paul O’Donnell, “New Business Models for Open Access Publication in the Humanities: The Lethbridge Journal Incubator” (presented at the Beyond the PDF2, Amsterdam, March 19, 2013), http://www.force11.org/Business_Case [http://www.force11.org/Business_Case]; Daniel Paul O’Donnell, “The Lethbridge Journal Incubator: Aligning Scholarly Publishing with the Teaching and Research Missions of a Public University” (presented at the Congress of the Humanities and Social Sciences, Canadian Association of Learned Journals, Waterloo, Ont., May 27, 2012). Kayla Ueland, Force 2015. January 12, 2015.♣ [#N36-ptr1]

37. See especially Daniel Paul O’Donnell, “The Lethbridge Journal Incubator. Leveraging Open Access Publication to Increase the Training and Research Capacity of the University” (presented at the Western Humanities Association, San Diego, November 1, 2013); Daniel Paul O’Donnell, “The Lethbridge Journal Incubator: A New Business Model for Open Access Journal Publication.” Elsevier Labs. February 18, 2014, <http://www.slideshare.net>

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