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Introduction

... the traditional system of scholarly communication is not working. Libraries and their institutions worldwide can no longer keep up with the increasing volume and cost of scholarly resources. Authors communicate with only those of their peers lucky enough to be at an institution that can afford to purchase or license access to their work. Readers only have access to a fraction of the relevant literature, potentially missing vital papers in their fields.

The promise of the digital revolution to shrink costs and expand access has been threatened by those publishers that have sought to maximize revenues by raising prices and restricting use. But efforts to counter this trend – employing new technologies and business models to provide wider access at lower societal cost – are underway and gaining momentum.

Association of Research Libraries,
Create Change Brochure

The International Consortium for the Advancement of Academic Publication (ICAAP) is a not-for-profit organization devoted to the inexpensive publication of scholarly journals via web-based Internet technology. ICAAP, which is owned and operated by Athabasca University, Canada, is an extension of Athabasca University's mandate to provide high-quality, open-access education at a distance.

ICAAP was originally founded by me, Michael Sosteric. I had become interested in scholarly publication when I entered a Ph.D. programme in sociology at the University of Alberta, Canada where I created, in my first year of study, the world's first fully electronic journal of sociology – aptly titled the *Electronic Journal of Sociology* (EJS). The journal, founded in 1994, is still published at the web address www.sociology.org.

The International Consortium for the Advancement of Academic Publication – an idea whose time has come (finally!)

Michael Sosteric
ICAAP

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ABSTRACT: *The scholarly communication process is undergoing change and evolution. New initiatives and new approaches have been emerging for some time. This article outlines one Canadian initiative. The International Consortium for the Advancement of Academic Publication (ICAAP) provides a unique and low-cost publication alternative for those seeking to move outside the commercial mainstream of scholarly journal publication. A brief history of ICAAP and an account of its theoretical and political rationale are provided*



Michael Sosteric

There was nothing particularly innovative or original about the creation of this journal or my fledgling interest in scholarly publication. The journal was more the result of a happy coincidence. As I entered the graduate programme and was taught the importance of publication, I also simultaneously participated in the emergence of the World Wide Web as an advanced Internet communication technology. The two seemed to me a natural match and so, with only a little bit of naïvety, I created the *EJS*.

As time passed and I progressed through the graduate system, I became more interested in scholarly publication as a research focus. Part of my research interest grew out of the resistance that I had experienced to the publication of the *EJS*. As it turns out, disciplinary gatekeepers generally frowned upon upstart graduate students playing with the crown jewels of the scholarly enterprise (i.e. scholarly publication). As I researched the history of scholarly journals and their function in the academy, I also became aware of the political economy of scholarly publication and eventually decided to combine my interest in journals with the requirements for a Ph.D., choosing to write a dissertation on the political economy of scholarly publication. It was the work on that dissertation that provided the motivation for the creation of ICAAP.

The crisis in scholarly publication

As I moved through the academic process of researching and writing a dissertation I found, much to my growing horror, that scholarly publication appeared to be in crisis. The contours of that crisis are now well known and many good overviews are available¹ so I do not need to go into great detail about them. In short, scholarly publication has become dominated by large commercial publishers who do not have the best interest of the scholar at heart but are rather more interested in a robust bottom line. It seemed that the scholarly system was being bled dry and the integrity of scholarly communication was threatened. The problem was the high cost of scholarly journals. Commercial publishers had raised the price of many of their journals to unreasonable

levels, and as a result the system was crashing. Monograph purchases were declining, journal prices were skyrocketing, and libraries were cancelling journals by the dozen.² It seemed like the end of the scholarly world as the very core of the scientific enterprise, knowledge transfer, was being threatened. The following quote from the University of Waterloo *Scholarly Societies Project* illustrates the point:

In the last couple of decades, the subscription costs of many scholarly journals (especially those published by certain powerful commercial publishers) have escalated at a rate far exceeding the cost-of-living rate of inflation. In addition, many new journals have been started.

These two factors have conspired to change the nature of journal collections in academic libraries. Although it once was possible for a large academic library to aim to have a comprehensive collection of journals for the subject departments that it served, this is no longer the case. Even large academic libraries must now be fairly selective in the subscriptions that they renew. Furthermore, most academic libraries have had to carry out extensive journal-cancellation projects in the last few years.

(<http://www.scholarly-societies.org/crisis.html>)

It is hard to overestimate the impact of the serials crisis. Many journals have disappeared and many more struggle to survive in the increasingly thin air of the scholarly communication marketplace.³ When we collectively began to realize the seriousness of the crises, the obvious question became 'How could this have happened?' The answer was relatively simple. According to Pritpal Tamber,⁴ the scholarly journal marketplace, if not an outright monopoly as some had argued,⁵ displayed critical *inelasticities* that prevented a competitive commercial marketplace from emerging. Tamber explains the inelastic scholarly marketplace by drawing on the example of biomedical journal and dividing scholarly communication into *broad based* and *niche based* journal titles. According to Tamber,

Biomedical information can be divided

the scholarly
journal
marketplace
displayed
critical
inelasticities
that prevented
a competitive
commercial
marketplace
from emerging

into broad based and niche based titles. Broad based titles are for the generalist reader and are used a lot. Their prices are usually low, giving them a low cost/use ratio. Because they are considered value for money, most libraries buy them. Niche based titles are, by comparison, only used a little. This gives them a high cost/use ratio and so they are found in either well funded or specialty libraries.

. . . Most libraries have to satisfy a variety of readers and so try to buy a portfolio of journals. To achieve this they omit the more expensive, niche based titles. However, specialty libraries have no choice but to buy the titles relevant to their field – a library at a stroke research centre would be incomplete without a leading journal on atherosclerosis . . . commercial publishers have a core of consumers with no choice but to pay the marked price . . . selling less for more makes more profit than selling more for less. If this is true, publishers are effectively restricting the dissemination of scientific information for commercial gain. How can they be getting away with it?⁴

Tamber's lament about the restriction of scholarly communication is not new. The likely consequences of these inelasticities had already become matters of serious concern to scholars at the time I wrote my dissertation and there was fear that the system would (sooner rather than later) collapse under the weight of the commercial presses. Even if the system did not collapse outright, then certainly the integrity of scholarly communication would be undermined. These disastrous outcomes seemed obvious and almost inevitable.

While the high-prestige scientific disciplines did not feel this pinch as dramatically as the social sciences and humanities (they tended to have more money and could stave off the crises longer), other areas of scholarship were clearly threatened. If cancellations continued unabated there would be, it was feared, a restriction and retrenchment of knowledge and research opportunities as less-prestigious titles or fringe areas of publication were eliminated from library subscriptions. Scholarship in the liberal arts

and fine arts was thought to be particularly threatened.⁵ There were even political implications. Those areas of knowledge defined as important by those who funded knowledge would remain healthy but other areas would be squeezed out. It would be a great opportunity for the state to influence research direction but it would not bode well for the independence of scholarly research.

I admit there was some paranoia in some of these earlier analyses (mine included) and the worst predictions appear to have been avoided. However, that is not because the crisis was not (or does not continue to be) real. It is real, and non-commercial and society publishers continue to struggle against the tide of library cancellation. What has happened is that new models of publication have emerged outside of the traditional, paper-based mainstream, and it is these new models that have saved scholarly publication from the Orwellian restriction of knowledge and the economic disaster predicted by many scholars a few years ago.

This is where ICAAP comes in. ICAAP was founded in 1999 at exactly the moment in history when people were beginning to act together to resist the impact on the integrity of scholarly publication that continued reliance on the profit-orientated commercial presses would lead to. ICAAP was created as a counterpoint or counterforce and provides an alternative model of scholarly publication outside the commercial mainstream.

Alternative models

. . . e-publication offers a way to bring a new equilibrium to the scholarly publication ecosystem. We must move beyond our use of past models and develop new ways of thinking about the scholarly communication system and, indeed, new systems unencumbered by the conservative weight of traditional mechanisms of publication.⁶

As noted above, ICAAP was created because of an awareness of the political economy of scholarly publication and in response to the emergent crisis in the system. As such, ICAAP provides an *alternative vision* of what is possible for scholarly communication. Of course, ICAAP was not,

scholarship in the liberal arts and fine arts was thought to be particularly threatened

and is not, the only model nor the only vision. There are several others that cater to different segments of the scholarly communication system and that address different problems within the system.

ICAAP, for example, is not the most revolutionary or radical vision possible. The most radical vision is contained in the HEP (High Energy Physics) preprint archive. The preprint archive (pioneered by Paul Ginsparg with arXiv) is a system of publication that eliminates journals altogether and replaces them with an author-submitted, database-based, publication of preprints. HEP (<http://cds.cern.ch/>) has been a huge success and at the time of this writing the database contained 320,000 full-text documents in the field of high-energy physics! All these articles are searchable and all are available for free on the Internet. Since the inception of the preprint archive model, several other disciplines have adopted similar preprint servers (<http://www.osti.gov/inforum99/papers/jordan.html>).

The HEP model works extremely well for some disciplines but it is not a solution that all scholars feel comfortable with. Many scholars like the traditional journal and, for various reasons, would not want to lose it. For example, scholars are attached to the journal for professional reasons. Journals adjudicate advancement, add professional credibility to author publications, archive information for future researchers, and communicate to specialized researchers in a field. Scholars also like journals for personal reasons. Sometimes it just feels good to see your name in lights. What scholar is above a little ego gratification?

If ICAAP is not the most revolutionary vision, neither is it the most conservative. Some models of alternative publication retain print-based publication and/or even the problematic presence of commercial publishers. The conservative visions see scholarly publication staying in the hands of commercial publishers with the only difference being in the way in which they interface with the main purchasers of scholarly material, the libraries. The idea behind this model is to put pressure on the commercial presses so that they will change their way of doing business and loosen their

financial stranglehold. This conservative model is a favourite among those libraries who have the commercial clout to bend commercial presses. However, it leaves in place several problem areas, not the least of which is that the crisis is not eliminated or necessarily even lessened. The potential for the reduction of scholarly literature and the crisis of integrity that I noted above persists within this conservative model.

Into this mix comes ICAAP. On the continuum between revolution and status quo the ICAAP model is the middle way. At ICAAP we seek neither to replace the scholarly journal with fancy technological solutions (though we do not eschew technology) nor do we wish to allow the commercial presses to retain the market clout that gives them the ability to bleed the scholarly system.

The ICAAP model is simple and the ICAAP mission easy to understand. ICAAP seeks to demonstrate to the world that scholarly publication can be undertaken in an efficient, effective and cost-effective manner *by the scholars themselves*.⁶ ICAAP is a no-frills publication house that rejects the notion that publication needs to be expensive, administratively top-heavy or difficult to undertake. In essence, ICAAP is a publication house for scholars who wish to serve their research community by collecting and publishing, in a cost-effective and efficient manner, the research output of their particular disciplines.

Does ICAAP achieve its vision? The answer is a resounding yes. ICAAP is able to publish scholarly journals cheaply and efficiently and with a technological suite that does not intimidate the individual scholar. Scholars wishing to publish a journal for their discipline or their department can approach ICAAP and with as little as US\$3,000 in hand have a fully fledged quarterly electronic journal up and running in less than four weeks. After that, using Scholarly Exchange editorial software and ICAAP publication expertise, scholars can collect papers and publish their articles with a minimum investment of time. All the details from document conversion through archiving and distribution are taken care of by the ICAAP publication team.

*the ICAAP
model is simple*

How does ICAAP accomplish this surprising economic efficiency? We use a combination strategy to achieve our vision of low-cost scholarly communication. For example, ICAAP uses advanced technology to create efficiencies in the production process that cannot exist in larger organizations. ICAAP uses SGML technologies and in-house conversion routines for document conversion that make short work of document production.⁵

ICAAP also relies on the largesse of the Open Source community and the expertise of its own in-house programmers. For example, we developed a suite of software tools that draw on Open Source development tools in order to automate the publication and document conversion processes. This suite of tools, which includes Scholarly Exchange editorial software (<http://www.scholarlyexchange.org>), allows authors to submit articles, and editors to quickly and efficiently assign reviewers, track the paper flow, make editorial decisions and even publish the journal, from their office desktop. This software, which is currently available for free through ICAAP (but comes with no technical support) is part of a commercial venture designed to create a process of publication that is almost 80% automated. You can see the system in action at the journal *Neurology and Clinical Neurophysiology* (<http://www.ncnpjournal.com>), which is a former MIT Press journal trying out the world of semi-automated self-publication. NCNP is handled through Scholarly Exchange.

At this point it should be evident why I call ICAAP the *middle way*. With ICAAP we retain the journal as the traditional form of scholarly publication (although it is true it is now only in electronic form). We also retain scholarly control over the process and, perhaps most importantly, we retain the traditional peer-review process that many scholars are reluctant to give up. With ICAAP, if I may be so bold as to say, we achieve the best of both worlds. We achieve the benefits of advanced communications technology and we retain the traditional strengths of the scholarly communication systems.

The potential

In one sense the work of ICAAP is a step backward. When learned journals first emerged in 1665 it was scholars and scholarly societies that handled the process. ICAAP offers a modest possibility for a return to this pre-commercial era. I suspect that most scholars reading this would see increased scholarly control over the output and dissemination of scientific research (though they may eschew the extra work and lack of recognition for editorial duties) as a good thing.

However, ICAAP does not only offer a step back to an earlier era of scholarly communication. ICAAP also offers a way forward. The economics of the ICAAP model are potentially revolutionary. Using the ICAAP process and ICAAP technology, it is conceivable that every academic institution of any calibre and status could have their own research press. Even a small university with a technological infrastructure and technological service departments (i.e. computing services) could publish, for about US\$50,000, an entire collection of scholarly journals showcasing the top research in their fields of excellence. (The US\$50,000 figure is a bare bones number and assumes a faculty representative knowledgeable in technology with one or two assistants doing the technological management required to operate servers, host journals and do article conversions. Basic editorial tasks are handled by scholars publishing the journals. However, even editorial labour is reduced with the use of Scholarly Exchange editorial management software.)

The potential is obvious. If enough universities adopted the ICAAP model, the minimal costs of publishing institutional journals would be immediately offset by the incredible savings to those institutions from the free distribution of scholarly material through university initiatives. If only a modest fraction of the world's universities learned and adopted the ICAAP model, commercial scholarly publication would blink out of existence almost overnight and be replaced by a system of communication so low cost that journal articles could be offered to the world for free. If enough

every academic institution of any calibre and status could have their own research press

universities adopted the ICAAP model, the face of scholarly publication would be fundamentally altered, for the better, forever.

This is the potential.

The reality

Unfortunately, potential is just potential unless realized. Visioning a new model of scholarly publication is one thing. Planning and implementing that model another thing altogether. Having the model adopted on a wide scale, a whole different ball game again.

It would be disingenuous to say that ICAAP has not faced challenges. Many of the challenges and difficulties have been enumerated elsewhere,⁷ but two in particular stand out as difficult and peculiar to ICAAP. The first challenge has to do with ICAAP's target market. ICAAP targets low-circulation and niche journals that cannot survive in an environment where first-tier journals suck all the finances from general library subscriptions. Because of its low cost and high efficiencies, the ICAAP model shines in its service to these low-volume journals. It is a good idea, I believe, and it is echoed by Michael Keller of High-Wire Press who notes that '... the solution to the journals crisis lies in creating a situation where the journals of very low circulation are entirely supplanted by electronic editions, and where the journals have got to be produced by the practitioners themselves' (quoted in Lawal¹).

The problem is that journals of very low circulation also have very low cash flow and often struggle for institutional support in environments where funding cutbacks and retrenchment are the norm rather than the exception. This, and the fact that scholars do not garner a lot of professional advancement points from editing scholarly journals (as always it is *publish or perish*), makes even the modest funding requirements of ICAAP a challenge for many of the journals who would benefit the most from adopting this model.

Of course, the solution to this problem is simple enough. More departmental, institutional and government funding for niche journals and individualized scholarly com-

munication. The problem? Departments, institutions and governments that are either cash strapped or reluctant to change funding models to support the alternative technological and economic models represented by ICAAP.

These comments on government financing are a perfect segue into the next challenge that ICAAP has faced, namely drawing cash from journal funding programmes that fail to see that alternative and/or electronic scholarly communication requires creative funding arrangements. This is a particular problem in Canada (where ICAAP is located) and for social science and humanities journals (ICAAP's target market) that depend on a regular three-year cycle of funding from the Social Science and Humanities Research Council. Under the SSHRC program, journals apply every three years and receive up to C\$90,000 over the three-year window of the grant.

It does not take a rocket scientist to see that ICAAP, with its high efficiencies and no-frills production system could support between five and ten journals for that price (depending on volume and additional factors). Unfortunately, the money does not flow to *electronic journals* (which are often offered for free) because of a line requirement in the funding applications that stipulates that each journal applying for the grant must have a minimum of 200 paid subscribers. Now, even if ICAAP were to encourage electronic subscriptions (which we do not) and even though it might be true that the majority of Canadian journals could migrate to electronic-only form and eventually acquire enough subscriptions to the electronic-only version of their journals to make the critical 200 subscription cut-off mark, editors of print journals are reluctant even to try for fear of falling below the critical funding marker. The problem is simple. In a scholarly market as small as the Canadian one, even a 5% drop in subscription numbers would, for some journals, spell financial and scholarly death.

In this small market and restrictive funding environment, what journal editor would risk trying out new publication models? It is simply organized to be too much of a risk.

*first-tier
journals suck
all the finances
from general
library
subscriptions*

Conclusion

So what is the future for ICAAP and for this alternative, scholar-led, low-cost model? Time will tell whether or not sufficient numbers of print journal editors will risk the move to electronic-only versions of their journals. If enough journals begin the long-overdue move, then ICAAP's future is bright and the model developed at Athabasca University will transplant to other institutions. However, if journals continue to fear the move to electronic, if scholars continue to shun the editorial and technological duties of scholar-led production, and if government agencies continue to lack vision and continue to fund outdated communication models, then there is a danger that the ICAAP model will disintegrate, along with many of the small-circulation niche journals that have already, or will in the near future, disappear from the scholarly landscape.

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