

Scholarly Societies and the Newspaper Problem

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The Newspaper Problem

Here is the story that Clay Shirky tells about newspapers and why they had to reinvent their economic model with the advent of the Internet.

For a long time, longer than anyone in the newspaper business has been alive in fact, print journalism has been intertwined with these economics. The expense of printing created an environment where Wal-Mart was willing to subsidize the Baghdad bureau. This wasn't because of any deep link between advertising and reporting, nor was it about any real desire on the part of Wal-Mart to have their marketing budget go to international correspondents. It was just an accident. Advertisers had little choice other than to have their money used that way, since they didn't really have any other vehicle for display ads.

The competition-deflecting effects of printing cost got destroyed by the internet, where everyone pays for the infrastructure, and then everyone gets to use it. And when Wal-Mart, and the local Maytag dealer, and the law firm hiring a secretary, and that kid down the block selling his bike, were all able to use that infrastructure to get out of their old relationship with the publisher, they did. They'd never really signed up to fund the Baghdad bureau anyway.¹

The problem was that newspapers in the print era had been able to reliably cross subsidize. Newspapers could use advertising revenue, for which they controlled much of the market, to pay the costs of reporting the news. The Internet broke this

connection and the subsidy for reporting dried up. Reporting now had to stand on its own. This was traumatic, though now, a decade after Shirky wrote his assessment, many news organizations have survived and adjusted and others that take advantage the economics of the Internet have come into existence and thrived.

Scholarly Societies: Introduction

Scholarly Societies, like the newspapers of old, are heavily dependent on cross subsidies. As I will show below, they pay for a large part of their operations with surpluses generated off the sale of their publications. This practice is widely understood and accepted. The following quote from Robert Harington, the one-time associate director in charge of the American Mathematics Society's publications operations, from a piece in the *Scholarly Kitchen* says it nicely:

The AMS publishes a range of journals and a discovery database called MathSciNet® that is a fundamental part of a research mathematician's daily life. Indeed the AMS has its own printing and distribution facility in Rhode Island. The reality is that 70% of AMS revenues come from publishing activities, including subscription revenues from books, journals, and the database MathSciNet®. Surplus funds go directly back into our programs. If subscription revenues were to evaporate, the ability of the AMS to provide services and programs that fortify the mathematical sciences community would likely also evaporate.²

The publications of scholarly societies have mostly been sold to libraries, and because of the peculiar nature of the scholarly communications market, the Internet has not yet broken this economic model, at least not yet. But we can see that it is under stress and it is only a matter of time before, as was the case with newspapers, this economic model comes apart. The stress can be seen by the number of scholarly societies who have joined the Coalition for Responsible Sharing or when the American Chemical Society joins Elsevier in suing ResearchGate. These actions demonstrate the fear these societies have of losing the revenue streams produced by their publications, even though there is little indication that libraries have cancelled subscriptions in favor of getting content through ResearchGate. While the publications of scholarly societies are generally less expensive than for-profit publishers and their prices are raised at a somewhat slower rate, they are often bundled and the prices are now out of reach for some libraries.³ Authors, who mostly sign away all of their rights to their work, find their society's insistence on abiding by

the restrictions imposed by the societies on sharing surprising and annoying.⁴ But because these publications often have high impact factors authors mostly go along.

The economics of the Internet are clear to nearly everyone. It should be free and easy to share scholarship with everyone everywhere because the incremental cost of doing so is basically nothing. But large publishers, both commercial and those of scholarly societies have locked in the old print model where researchers sign away the rights to their work and do much of the editorial and all of the peer review work gratis. Libraries pay exorbitated prices for bundles of journals that their faculty tell them they cannot do without. This generates monopoly rents for the publishers, both commercial and society-based. These excess profits in the case of the commercial publishers go to stock holders. In the case of societies, as noted above, they go to subsidize other aspects of the societies work.

These other aspects of the societies' work may or may not be reasonable, but the manner in which they are funded is problematic. It is as if colleges and universities, through their libraries, are writing large checks to scholarly societies without recognizing that they are doing so, and without any say in how their money gets spent. Colleges and universities paying more than is necessary for journals and indexes in order to subsidize scholarly societies might appropriate, but the lack of transparency in this arrangement is concerning.

The better situation, I would argue, would be for libraries to pay societies what their publications cost and for the societies to justify their other programs either to their members or their members' institutions. As we will see below when we take a closer look at the money, my solution might serve libraries and scholarship in general well, but it is not in the interest of the members or the managers of the scholarly societies.

Follow the Money #1: The American Chemical Society

Let's begin with the American Chemical Society (ACS). ACS is the worlds largest scholarly society by membership with over 158,000. It publishes 51 scholarly journals and operates the *Chemical Abstracts Service*, the primary index to the chemical literature. These publications are ACS's primary sources of income.⁵

If we look at ACS's budget, as taken from their 2017 annual report, total revenue was \$547,172,000, revenue from publications was \$485,879,000 or 88.8% of the total.⁶ By comparison, revenue from membership dues was \$11,573,000 or 2.1% of the total

and revenue from conferences (registration fees and booth sales) was \$12,713,000. Looking at expenses, total expenses were \$525,292,000, publications expenses were \$399,655,000 and administrative expenses were \$53,292,000. If we allocate the administrative expenses to publications on the basis of expenditures, the total publishing expenditures with administrative overhead is \$440,200,857. This means that ACS generates a surplus of \$45,678,143 from publications. These funds are available to support other aspects of ACS's programs and operations. If ACS publications were sold at cost, they would be 9.4% cheaper. If membership dues needed to cover the programs now subsidized by the publications program they would need to increase by nearly 500% from \$171 a year to \$846 per year. It is worth noting that one of the things the publications surplus funds is administration. As reported in *GuideStar* the top salary at ACS in 2017 was \$999,744 and the average of the top five salaries was \$730,493. Neither of these figures includes benefits.

Follow the Money #2: The Institute of Electrical and Electronics Engineers

The Institute of Electrical and Electronics Engineers, or the IEEE (Eye-triple-E) as it is usually called, was in 2018 the world's largest association of technical professionals with more than 423,000 members in over 160 countries. It produces over 30% of the world's literature in the electrical and electronics engineering and computer science fields, including over 100 journals, a large number of conference papers, and standards. The IEEE online digital library *IEEE Xplore* provides this content and indexing.⁷

If we look at IEEE's budget, as taken from their 2017 annual report, total revenue was \$496,628,800, revenue from publications, including standards, was \$250,357,400 or 50.4% of the total.⁸ By comparison, revenue from membership dues was \$63,258,500 or 12.7% of the total and revenue from conferences was \$182,181,700. Total expenses were \$511,897,700, publications expenses were \$198,478,900 and administrative expenses were \$8,630,600. If we allocate the administrative expenses to publications on the basis of expenditures, the total publishing expenditures with administrative overhead is \$201,825,256. This means that IEEE generates a surplus of \$48,532,144. These funds were available to support other aspects of IEEE's programs and operations. If IEEE publications were sold at cost, they would be 19.4% cheaper. This would mean the list price of the journals package would drop \$12,513 from \$64,500 to \$51,987. The list price of the full conference paper bundle would drop \$16,489 from \$84,995 to \$68,506. If membership dues needed to cover the programs now subsidized by the publications program they

would need to increase 177% from \$203 a year to \$359 per year. As reported in *GuideStar* the top salary at IEEE in 2017 was \$891,606 and the average of the top five salaries was \$516,546. Neither of these figures includes benefits.

Follow the Money #3: The American Psychological Association

The American Psychological Association (APA) is the largest scientific and professional organization of psychologists in the U.S. with a membership of about 117,500. There are 54 divisions of the APA covering different subspecialties of psychology topical areas. APA publishes over 70 journals and *PsycINFO* the most important bibliographic database in psychology.⁹

If we look at APA's budget, as taken from their 2016 annual report, total revenue was \$112,407,000, revenue from publications, including subscriptions, licensing, and sale was \$94,039,000 or 83.7% of the total.¹⁰ By comparison, revenue from membership dues was \$9,302,000 or 8.3% of the total. Total expenses were \$102,020,000, publications expenses were \$17,219,000 and administrative expenses were \$ 75,412. If we allocate the administrative expenses to publications on the basis of expenditures, the total publishing expenditures with administrative overhead is \$27,943,534. This means that APA generates a surplus of \$66,095,466 from publications. This appears to be out of line, specifically the publications expense number. It is likely that not all of the personnel costs directly associated to publications are included in the stated expense. Thus, the surplus as calculated above is probably overstated. If we allocate staff expenditures to publications based on revenue rather than expenses we get publication expenses of \$80,337,844 and a surplus of \$13,701,156. Based on the latter calculation, if APA publications were sold at cost, they would be 14.6% cheaper. If membership dues needed to cover the programs now subsidized by the publications program they would need to increase about 250% from \$247 a year to \$611 per year. As reported in *GuideStar* the top salary at APA in 2017 was \$614,424 and the average of the top five salaries was \$441,331. Neither of these figures includes benefits.

Follow the Money #4: The American Mathematics Society

The American Mathematics Society (AMS) has a membership of about 30,000 and publishes several dozen journals and *Mathematical Reviews*, the major bibliographic tool in the field.

If we look at AMS's budget, as taken from their 2016 annual report, total revenue was \$31,815,649, revenue from publications was \$21,773,325 or 68.4% of the total.¹¹ By comparison, revenue from membership dues was \$3,378,939 or 10.6% of the total. Total expenses were \$30,230,239, publications expenses were \$13,495,115 and administrative expenses were \$4,418,657. If we allocate the administrative expenses to publications on the basis of expenditures, the total publishing expenditures with administrative overhead is \$15,467,653. This means that AMS generates a surplus of \$6,305,672. If AMS publications were sold at cost, they would be 29.0% cheaper. If membership dues needed to cover the programs now subsidized by the publications program they would need to increase by 285% from \$200 a year, for those with a salary of over \$100,000, to \$573 per year. As reported in *GuideStar* the top salary at AMS in 2017 was \$260,439 and the average of the top five salaries was \$212,329. Neither of these figures includes benefits.

Follow the Money #5: The Modern Language Association

The Modern Language Association (MLA) is the principal professional association in the United States for scholars of language and literature. The MLA aims to "strengthen the study and teaching of language and literature." The organization includes over 25,000 members in 100 countries. MLA publishes a number of journals and the *MLA International Bibliography*, the primary indexing tool in the field.¹²

If we look at MLA's budget, as taken from their 2016 annual report, total revenue was \$15,749,254, revenue from publications was \$10,331,850 or 65.6% of the total.¹³ By comparison, revenue from membership dues was \$2,239,277 or 14.2% of the total. Total expenses were \$16,858,871, publications expenses were \$7,471,194 and administrative expenses were \$3,556,176. If we allocate the administrative expenses to publications on the basis of expenditures, the total publishing expenditures with administrative overhead is \$9,047,152. This means that MLA generates a surplus of \$1,284,698. If MLA publications were sold at cost, they would be 12.4% cheaper. If membership dues needed to cover the programs now subsidized by the publications program they would need to increase by 157% from \$164 a year, for those with a salary between \$70,000 and \$100,000, to \$258 per year. As reported in *GuideStar* the top salary at AMS in 2017 was \$351,177 and the average of the top five salaries was \$227,888. Neither of these figures includes benefits.

Scholarly Societies: Summary of Five Cases

These five case studies show scholarly societies that range in size, by budget, from a half billion dollars to a more modest \$15.7 million. It is likely that the ways in which revenue and expenses are accounted for in the different societies differs to some degree, but it is clear that each of societies generates a sizeable surplus from their publishing operations that is used to support the other programs of the societies. These surpluses range from a low end of 9.4% to a high of 29.0%. The dollar amounts range from \$45.7 million at ACS and \$48.5 million at IEEE to \$1.3 million for MLA. A summary is shown in the chart below.

	Total Revenue	Publishing Revenue	Publishing Cost with Administrative Overhead	Publishing Surplus	Surplus %
American Chemical Society	\$547,172,000	\$485,879,000	\$440,200,857	\$45,678,143	9.4%
IEEE	\$496,628,800	\$250,357,400	\$201,825,256	\$48,532,144	19.4%
American Psychological Association	\$112,407,000	\$94,039,000	\$80,337,844	\$13,701,156	17.1%
American Mathematical Society	\$31,815,649	\$21,773,325	\$15,467,653	\$6,305,672	29.0%
Modern Lanuage Association	\$15,749,254	\$10,331,850	\$9,047,152	\$1,284,698	12.4%

Again, one way to think of this is that colleges and universities, through their libraries, are providing a significant level of support to scholarly societies. This is support, I suspect, few Provosts or VPs for Finance are aware they are providing.

While most large scholarly societies generate a surplus from their publications programs smaller societies do not necessarily do so. The American Historical Association and the American Library Association both appear to have publications operations that operate in the red.

Open Access and Plan S

Open Access (OA) is a means of distributing content in a manner that makes the content free to read, and in many cases free to use in other ways. There are a variety of ways that this can be done. Green OA provides access through the deposit of

versions of papers, usually the accepted manuscript, in institutional or subject repositories. In most cases these papers are then published in subscription journals. Hybrid OA provides authors an opportunity to pay a fee (usually referred to as an Article Processing Charge or APC) to have their article made openly available at the time it is published in a subscription journal. In most cases the presence of some OA content in a subscription journal does not impact the price or sales of subscriptions. Neither Green OA or Hybrid OA have much impact on subscription sales and thus the revenue streams of publishers. For this reason, most subscription journal publishers have no significant objections to these forms of OA. Gold OA is based on journals that fund their operating and first copy costs in some way and then the articles are given away at no cost. The operating and first copy costs are usually funded through APCs, institutional subsidies, or philanthropy. While some commercial and society publications have adopted Gold OA models, they have not been substitutes for the established top tier titles that generate the highest profits or surpluses. To date, the ability of publishers of the most respected journals to raise the prices on their APCs has not been particularly constrained, and so, as the publishing revenue figures cited above show, OA has not yet impacted the revenue streams of the large scholarly societies. Hybrid OA in fact generates additional income.

This is about to change and Plan S is why.

Plan S is an initiative for OA science publishing that was launched by Science Europe on September 4, 2018. It is an initiative of a consortium consisting, as of November 2018, of the European Research Council and the major national research agencies and funders from twelve European countries as well as the Wellcome Trust and the Gates Foundation. Plan S aims to change how scholarly and scientific research is communicated. As stated on the Plan S website:

Plan S aims for full and immediate Open Access to publications from publicly funded research. The coalition of research funders that have committed to implement Plan S, known as cOAlition S, therefore calls for a definitive shift towards new models of academic publishing. cOAlition S aims to accelerate the transition to a scholarly publishing system that is characterised by immediate, free online access to, and largely unrestricted use and re-use of scholarly publications... cOAlition S is committed to fulfil the specific target set out in Plan S – immediate Open Access to all scholarly publications from research funded by coalition members from 2020 onwards.¹⁴

Plan S is based on 10 principles, the most important ones for this discussion are principle 5 that will standardize and cap APCs, and principle 9 that states that hybrid OA is not compliant with the plan.

Plan S is, it seems to me, an inevitable development that indicates that research funders have lost patience with publishers delaying the implementation of open access and thus preserving their traditional publishing models and their excessive income streams. Everyone knows that the large scholarly publishers have been extracting excessive monopoly rents and the funders are the only ones able to do anything about it. They have finally decided that they have had enough.

Plan S was lauded by OA advocates, but unsurprisingly, not everyone was pleased. The American Association for the Advancement of Science (AAAS) publisher of *Science*, as quoted in a *Nature* article entitled, "Radical Open-Access Plan Could Spell End to Journal Subscriptions," said that the model outlined in Plan S "will not support high-quality peer-review, research publication and dissemination," that it would "be a disservice to researchers" and "would also be unsustainable for the *Science* family of journals."¹⁵ An open letter concerning Plan S signed by nearly 1,500 researchers as on the end of November 2018 began, "We support open access (OA) and Plan S is probably written with good intentions. However, Plan S, as currently presented by the EU (and several national funding agencies) goes too far, is unfair for the scientists involved and is too risky for science in general."¹⁶ The first issue addressed by the letter is, "The complete ban on hybrid (society) journals of high quality is a big problem, especially for chemistry." The letter makes several other criticisms of Plan S before declaring it a "serious violation of academic freedom." The *Times Higher Education* article on Plan S was entitled "Plan S 'Could Prove Fatal' for Learned Societies," and indicated that professional organizations dependent on the subscription journal income faces an "existential" threat.¹⁷

Leonid Schneider on his blog *For Better Science* says:

The Plan S, developed by EU Commission's special envoy Robert-Jan Smit and his partners of Science Europe, a lobby organisation of European funders, might become the biggest scholarly publishing revolution in history, or it might fail spectacularly. It all depends on who joins the cOAlitionS and how exactly it will be implemented. I obtained a near-verbatim transcript of a video-conference Smits and Science Europe president Marc Schilz had on October 19th with Lynn Kamerin and other authors of the Appeal against Plan S, originally published on

my site. It appears that Smits and Schiltz see the scientists and their scholarly societies as the reactionary elements blocking the road to the universal Open Access (OA).¹⁸

In a second post Schneider suggests that Plan S was designed to help Frontiers, a commercial OA megajournal publisher, and said that, "Scholarly societies whose academic activities depend on the income from their subscription journals were told by Smits 'to bite the bullet', face the OA competition and try to survive in the free market." He goes on to say that Plan S is, "basically declaring a war on scholarly societies."¹⁹

Scholarly Societies and the Newspaper Problem

Schneider is incorrect in asserting that Robert-Jan Smit and the other proponents of Plan S decided to go to war with scholarly societies and their members, though they might well see them as reactionary elements. Rather, the funding agencies supporting Plan S are like Wal-Mart in Clay Shirky's story about newspapers. Wal-Mart never signed up to support the Baghdad bureau, and found that they no longer had to. The research funding agencies supporting Plan S didn't sign up to support scholarly society programming and highly compensated society executives. They signed up to fund research and they have decided that is what they are going to do, and no more.

The unfortunate truth for scholarly societies and their members is that cross subsidies in the digital age are hard, maybe impossible to maintain. And, as Smit is purported to have said, they will have to bite the bullet and find new business models to support the non-publishing activities of the society. This is likely to be just as difficult and traumatic for scholarly societies as it was for newspapers. In the end some will survive and some probably will not. We can also expect that new services will arise to fill the void left by failed societies just as new news services developed as newspapers folded. These services will stand on their own and funding will match the service provided. I can imagine colleges and universities paying for some of these services, but it will not be done by blindly overpaying for journals and indexes as part of the library budget. The institutions will understand clearly what they are getting and what it costs.

The next decade will likely be hard for scholarly societies, they can blame Plan S, but the real cause is a dated business model based on the economics of a passed time that, like the newspaper, will have to fall and be rebuilt.

Notes

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- ³ Jennifer Howard, "As Chemistry Journals' Prices Rise, a Librarian Just Says No," *Chronicle of Higher Education*, September 26, 2012, <https://www.chronicle.com/article/As-Chemistry-Journals-Prices/134650>
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- ⁵ "American Chemical Society," *Wikipedia* (accessed October 28, 2018), https://en.wikipedia.org/wiki/American_Chemical_Society#cite_note-125
- ⁶ American Chemical Society, *2017 Management's Statement of Responsibility and Audited Financial Statements*, March 2018, <https://www.acs.org/content/dam/acsorg/about/aboutacs/financial/2017-audited-financial-statements.pdf>
- ⁷ "Institute of Electrical and Electronics Engineers," *Wikipedia* (accessed November 13, 2018), https://en.wikipedia.org/wiki/Institute_of_Electrical_and_Electronics_Engineers#cite_note-10
- ⁸ Institute of Electrical and Electronics Engineers, *Inspiring Change. Empowering People: Annual Report 2017*, <https://www.ieee.org/content/dam/ieee-org/ieee/web/org/corporate-communications/annual-report/2017/2017-ieee-annual-report-final.pdf>
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- ¹³ Modern Language Association, "Report of the Executive Director," *PMLA* 132(3):708-739, February 24, 2017,

<https://www.mla.org/content/download/81440/2185986/Report-Executive-Director-2016.pdf>

- ¹⁴ cOAlition S, "Making Full and Immediate Open Access a Reality," (accessed November 27, 2018) https://www.coalition-s.org/wp-content/uploads/271118_cOAlitionS_Guidance.pdf
- ¹⁵ Holly Else Holly, "Radical Open-Access Plan Could Spell End to Journal Subscriptions," *Nature* 561 (7721):17-18 September 4, 2018, doi:[10.1038/d41586-018-06178-7](https://doi.org/10.1038/d41586-018-06178-7)
- ¹⁶ "Plan S Open Letter: Reaction of Researchers to Plan S; Too Far, Too Risky," (accessed November 27, 2018), <https://sites.google.com/view/plansopenletter/open-letter>
- ¹⁷ "Plan S 'could prove fatal' for learned societies," *Times Higher Education*, (accessed November 27, 2018), <https://www.timeshighereducation.com/news/plan-s-could-prove-fatal-learned-societies> Full article behind a paywall.
- ¹⁸ Leonid Schneider, "Robert-Jan Smits: Scholarly Societies 'Will have to bite the bullet and go Open Access'," *For Better Science* [blog], October 22, 2018, <https://forbetterscience.com/2018/10/22/robert-jan-smits-scholarly-societies-will-have-to-bite-the-bullet-and-go-open-access/>
- ¹⁹ Leonid Schneider, "Did Frontiers Help Robert-Jan Smits Design Plan S?" *For Better Science* [blog], November 13, 2018, <https://forbetterscience.com/2018/11/13/did-frontiers-help-robert-jan-smits-design-plan-s/>