

Academic Journals: The Most Profitable Obsolete Technology in History

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Academic publisher Elsevier, which owns a majority of the prestigious academic journals, has higher operating profits than Apple. In 2013, Elsevier posted [39 percent](#) profits, according to Heather Morrison, assistant professor at the University of Ottawa's School of Information Studies in contrast to the [37 percent](#) profit that Apple displayed.

This lucrative nature of academic publishing comes at a price--and that weight falls on the shoulders of the full higher education community

which is already bearing the burden of significantly decreasing academic budgets. "A large research university will pay between \$3-3.5 million a year in academic subscription fees --the majority of which goes to for-profit academic publishers," says Sam Gershman, a postdoctoral fellow at MIT who assumes his post as an assistant professor at Harvard next year. In contrast to the exorbitant prices for access, the majority of academic journals are produced, reviewed, and edited on a volunteer basis by academics who take part in the tasks for tenure and promotion.

"Even the Harvard University Library, which is the richest university library in the world, sent out a letter to the faculty saying that they can no longer afford to pay for all the journal subscriptions," says Gershman. While this current publishing environment is hard on large research institutions, it is wreaking havoc on small colleges and universities because these institutions cannot afford access to current academic information. This is clearly creating a problematic situation.

Paul Millette, director of the Griswold Library at Green Mountain College, a small 650 student environmental liberal arts college in Vermont, talks of the enormous pressures access to academic journals have placed on his library budgets. "The cost-of-living has increased at 1.5 percent per year yet the journals we subscribe to have consistent increases of 6 to 8 percent every year." Millette says he cannot afford to keep up with the continual increases and the only way his library can afford access to journal content now is through bulk databases. Millette points out that database subscription seldom includes the most recent, current material and publishers purposefully have an embargo of one or two years to withhold the most current information so libraries still have a need to subscribe directly with the journals. "At a small college, that is what we just don't have the money to do. All of our journal content is coming from the aggregated database packages--like a clearing house so to speak of journal titles," says Millette.

"For Elsevier it is very hard to purchase specific journals--either you buy everything or you buy nothing," says Vincent Lariviere, a professor at Université de Montréal. Lariviere finds that his university uses 20 percent of the journals they subscribe to and 80 percent are never downloaded. "The pricing scheme is such that if you subscribe to only 20 percent of the journals individually, it will cost you more money than taking everything. So people are stuck."

"Money should be taken out of academic publishing as much as possible. The money that is effectively being spent by universities and funding agencies on journal access could otherwise be spent on reducing tuition, supporting research, and all things that are more important than paying corporate publishers," says Gershman. John Bohannon, a biologist and *Science* contributing correspondent, is in agreement and says, "Certainly a huge portion of today's journals could and should be just free. There is no value added in going with the traditional model that was built on paper journals, with having people whose full time job was to deal with the journal, promote the journal and print the journal, and deal with librarians. All that can now be done essentially for free on the internet."

Although the prior clearly sounds like the path toward the future, Bohannon says from his vantage point the prior is not one-size-fits-all: "The most important journals will always look pretty much like they do today because it is actually a really hard job." Bohannon finds that the more broad journals such as *Science*, *Nature*, and *Proceeding of the National Academy of Science* (PNAS) will always need privatized funding to complete the broad publication tasks.

"A better approach to academic publishing is to cut out the whole notion of publishing. We don't really need journals as traditionally conceived. The primary role of traditional journals is to provide peer review and for that you don't need a physical journal--you just need an editorial board and an editorial process," says Gershman.

Gershman lays out his vision for the future of academic publishing and says that a very different sort of publishing system would be that everybody could post papers to a pre-print server similar to the currently existing arXiv.org. After posting research, then the creator selects to submit it to a journal, which is essentially sending them the links to your paper on the pre-print server. The journal editorial board do the same editorial process that exists now--if your paper is accepted to their journal they can put their imprimatur on your paper saying it was accepted to this journal--but there is no actual journal--it is just a stamp of approval.

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What Gershman's concept does is remove most of the costs from the equation. The cost for running this pre-print server would be a shared cost for all universities and funding agencies and could clearly infuse millions upwards of billions back into the broad higher education system should an overarching system be implemented and respected. Bohannon is not convinced the prior is an easy sell. "We would need a real revolution. By revolution I mean a cultural revolution among academics. They would have to totally change the way they do business and, despite having the reputation of being revolutionary, academics are pretty conservative. As a culture, academia moves pretty slow." Nathan Hall, professor at McGill University, follows Bohannon's reasoning and says, "I think there is a sense of security in maintaining a set of agreements with known publishers with reputations like Wiley or Elsevier. I think

universities aren't quite aware of the benefits and logistics of a new system and they are comfortable maintaining existing relationships despite some questionability for what the publishers are providing."

Open Access for the Future?

"The phrase 'open access' can mean several things," says Lariviere. Open access on a broad scale refers to unrestricted online access for peer-reviewed research. Lariviere details how publishers have co-opted this terminology and in doing so perhaps increased profit further. "Elsevier says you can publish in open access, but in reality it means paying twice for the papers. They will ask me 'do you want to publish your paper open access' which means paying between \$500 and \$5,000 additional for that specific paper to be freely available to everyone. At the same time, they will not reduce the subscription cost to the overall journal, which means they are making twice the money on that specific paper. If you ask me if this type of open access is the way to go, the answer is no."

Luckily large granting bodies have begun using their clout to push toward true open access. The National Institute of Health (NIH) has been a longstanding champion for creating open access. Since 2008, the NIH has had a mandate for all research funded by that body to be published open access. Recently, the Bill and Melinda Gates Foundation brought their clout into the open access conversation. Starting in January 2015 all work funded through the Gates Foundation will be open access and the foundation says: "We have adopted an Open Access policy that enables the unrestricted access and reuse of all peer-reviewed published research funded, in whole or in part, by the foundation, including any underlying data sets."

As higher education is redefined to meet the needs and affordability required of the 21st century certainly the most basic functions of sharing academic research need to be retooled. There is no reason an academic publisher should have such a significantly different economic picture

from standard publishers. The stark contrast is troubling as it tells just how far from reality our higher education system has traversed. Correspondingly, there is no reason universities should pay \$3.5 million to have access to peer-reviewed data. This academic conversation is society's conversation--and it is time that the digital revolution level one last playing field: because we, the people, deserve access.