

Costs, Prices, and Revenues in Journals Publishing

(May 11, 2011)

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Abstract

There are surprising differences among the prices that university libraries must pay as subscriptions to academic journals, as well as among the fees that authors, or their institutions, should pay as Article Processing Charge (APC) in the author-pay model being increasingly used by the Full Open Access journals. In both “reader-pay” and “author-pay” publishing models, the differences in the subscription prices and in the authors’ fees are startling. We will try, in this article, to briefly describe these differences, by reviewing some of the most widely known studies on this issue, and to try to identify the real costs in scholarly publishing. Our purpose is to provide new publishers and editors, especially those planning to publish an Open Access Journal, with some general guidelines and basic references with regards to the processing costs, so they can take an adequate decision in regards to the Article Processing Charge (APC) of their planned journal. We will also try to present the different business models related to Open Access journal publishing.

Article Processing Charge (APC) in Open Access Journals

Publishing costs and revenues might be found in several studies. **Revenues** (which include subscriptions) per article vary from \$1,000 to \$20,000 (Ginsparg, 2001; 2003) depending on the publisher (profit or non-profit), on the kind of publishing media (electronic, printed or both) and on the business model (based on subscription, Full Open Access, Optional Open Access, hybrid, etc.) **Prices** per article, charged to authors, as Article Processing Charge (APC) in Open Access journals, vary from \$500 to \$ 3000 (Waltham, 2006; p. 128) depending on the level of extra funding, grants, and revenues that the respective publisher has. Springer Open Choice Program, for example, charges authors, or their respective institutions, \$3,000 to allow free access to it (Guedón, 2006; p.31; Terry and Kiley, 2006; p.107). BioMed Central’s article processing charge is, in average, £750 which is about \$1,480. This is one of the lowest article processing fees. Indeed, BioMed Central compares its fee to those of the most known publishers and journals, in its web page at <http://www.biomedcentral.com/info/authors/apccomparison/>. The low fee is basically related to the copy-editing policy of many of the BioMed Central Journals by forgoing copy-editing by the journal, “putting the onus on the authors to ensure their manuscripts are well written and suitable for publication when submitted in their final form... Despite this policy, these journals are receiving a growing respect and some are beginning to have very impressive impact factors.” (Salomon, 2008; p. 117)

Terry and Kiley (2006) presented the following typical costs (January 2006) per article of publishing in an open access journal (Terry and Kiley, 2006; p. 107):

BioMed Central: £750 (about \$1,480)
Blackwell: online open £1,250 (about \$2,470)
Oxford University Press: Oxford Open: £1,500 (about \$2,960)
Public Library of Science: PLoS: \$1,500
Springer: \$3,000

“Average cost per article (across these five publishers) £1,210”, about \$ 2,390 (Terry and Kiley, 2006; p. 107). Average of publishing cost per article, excluding BioMed Central, \$2,482.5.

BioMed Central, while comparing their Article Processing Charge (APC) with those of other publishers, provides the information we extracted in the table below.

Publishing Costs

Waltham (2005, 2006) made a large and detailed study with regards to the publishing costs of learned society publishers and the viability they have for adopting the Open Access Model. She notices that through her report “Open Access is used to refer only to the situation where the author pays the publisher a fee on acceptance of an article to cover the costs of publication. There is no subscriber access control of the journal article and on publication the article is available free of charge online to anyone.” (2005; p. 2).

Waltham (2005; 2006) based her detailed study on the publishing **costs** of 9 **learned society publishers** (13 journals). She concluded that these publishers could continue to deliver the average surplus to their societies by introducing an Article Processing Charge (APC) of £1,166 (about \$2,300) per article (2004 costs). As with regards to the costs, Waltham (2005) affirms that “cost figures based on pages published shows a range of from £65 [about \$128] per page for an online only journal to £359 [about \$710] per page for a print and online journal.” (p. 13).

One of Waltham’s most important conclusions was that “Although average numbers mask the quite profound differences in the journals analyzed, the average publishing cost per article in print and online was £1,447 (range £493-£2,232) and per page £144 (range £65 – £203) in 2004. The average revenue per article was £1,918 (range £389-£3,380) and per page was £194 (range £21-£538) in 2004.” (2005; p.49)

To calculate the on-line costs, Waltham (2005) removed the print costs (manufacturing and production; distribution and fulfillment). The results she obtained are shown in table 2.

Article Processing Charges of Open Access Journals

Publisher	Journal or Program	Article Processing Charge (APC) in \$US equivalent
BioMed Central	Typical BioMed Central journal	~\$1700-\$1900
	Journal of Medical Case Reports	~\$500
American Chemical Society	ACS AuthorChoice	\$3,000
American Society for Clinical Investigation	Journal of Clinical Investigation	~\$2500 & \$75 SF
American Physiological Society	Author Choice program	\$2000+page+color
Biological Procedures Online	Biological Procedures Online	\$1250
Blackwell Publishing	Online Open	\$2600
BMJ Publishing Group	'Unlocked' program – Main journals	\$3145
	'Unlocked' program - Specialist journals	\$2220
Cambridge University Press	Cambridge Open Option	\$2700
Company of Biologists	Development, Journal of Cell Science, Journal of Experimental Biology	~\$3100
Elsevier	Sponsored Article program	\$3000+ color
	Cell Press titles	\$5000+ color
	<i>The Lancet</i>	~\$800 per page+ color
	All other titles	\$3000+ color
Hindawi	Typical open access journal	~\$600-\$1500
John Wiley	'Funded access' service	\$3000
Journal of Medical Internet Research	Journal of Medical Internet Research	\$1500+ optional \$350 fast track fee
Journal of Neuroscience	Journal of Neuroscience	\$850 publication fee + \$2500 open access fee +\$1000 per color figure
National Academy of Sciences	Proceedings of the National Academy of Sciences (USA)	\$1200 + page and color charges
Nature Publishing Group	Molecular Systems Biology	\$3000
	British Journal of Pharmacology	\$2500
	The EMBO Journal	\$2540
	EMBO Reports	\$2540
Oxford University Press	Nucleic Acids Research	\$2670 + page charges from tenth page
	Oxford Open journals	\$2800+ color charges for some journals
Public Library of Science	PLoS Biology, PLoS Medicine	\$2850
	PLoS Pathogens, PLoS Computational Biology, PLoS Genetics, PLoS Neglected Tropical Diseases	\$2200
	PLoS One	\$1300
	Proceedings A, Phil Trans A and Notes and Records (EXiS Open Choice)	~\$2500+ color charges
Royal Society	Proceedings B, Phil Trans B, Biology Letters and Interface(EXiS Open Choice)	~\$3000+ color charges
	Open Science: Communications	~\$1950
Royal Society of Chemistry	Open Science: Primary paper	~\$3100
	Open Science: Review	~\$4900
	Sage Open	\$3000
Springer	All journals (OpenChoice)	\$3000
Taylor & Francis	iOpenAccess	\$3250

~ means an average, because the charge depend on several factors: words and figure count, figures, etc.
SF refers to Submissions Fees, not just publishing fees.

The data of the table have been extracted from BioMed Central's web site at <http://www.biomedcentral.com/info/authors/apccomparison/>

Table 1

Costs per article and per page for 12 journals with all print costs removed: 2004

Publisher	A	A	B	C	D	E	F	A	G	H	F	A
Cost/article (£)	1121	663	970	940	1180	981	473	1323	764	1076	404	1580
Cost/page (£)	109	114	70	76	134	95	64	74	66	226	63	79

Data extracted from Waltham (2005, p. 47)

Table 2

Consequently, *the average cost of learned societies on-line publishing (i.e. after removing the print costs), in 2004, is £956.25 (about \$1,708) per article and £97.5 (about \$193) per page (9.8 pages article).*

Learned society publishers were concerned about the viability of the Open Access Model and considering actions that would make it financially viable for them. Some of the possible actions that one of these publishers was considering are the following:

- “a) Reducing the number of pages for a *typical length of article to 6 pages*, and charging fees of at least £195/page above that
- b) Increasing colour fees so that they do cover the costs of printing colour OR offer authors the option of free colour for online only colour reproduction and a colour fee for the printed version.
- c) Journal 4 could consider offering authors an Open Access option for their published article at the rate of £1,350 (\$2,500) and at the current cost base would still retain the surplus returned to the society in 2004 if 100% of authors chose OA and paid.” (Waltham, 2005; p. 32)

Reduction of the maximum number of pages per article (typical length of six pages per article) is one of the aspects being considered in order to decrease Article Processing Charges (to be covered by authors or their institutions) made; and to make financially viable the Open Access Model for the learned society publishers.

Another cost reduction that is being done by an increasing number of publishers is the forgoing a formal copy-editing and to ask the respective authors to take responsibility for the copy-editing related grammar rules, punctuation, etc. and proofreading. About 100 journals of BioMed Central are being published with no formal copy-editing on behalf of the publisher, but authors are asked to carry this responsibility. *This copy-editing policy allowed publishers like BioMed Central to lower their Article Processing Charges to about \$1700-\$1900 per article.*

Publishing Revenues

Ginsparg (2001, 2003) presented statistics with regards to publishers’ revenues and inferred from them what the publishing costs should be. The cost range inferred by Ginsparg is similar to the cost range found by Waltham (2005; 2006) for a learned

society publisher sample which, we think, was biased to ward UK and USA publishers, but mostly to UK's.

We have chosen Ginsparg's (2001, 2003) statistics because they are a good synthesis of other studies and because of the experience of Ginsparg creating the self-archiving, very well known arXiv, and the multiple reflections made by him regarding alternative means of academic publishing.

In his invited contribution to the conference held at UNESCO HQ, Paris, 19-23 Feb 2001, on Electronic Publishing in Science, Ginsparg provided the following numbers in regards to the publishing revenues and costs:

- \$10,000-\$20,000 per article, as revenue, of the “high-end” commercial publishers.
- \$4000 per article as an aggregate average of the revenue of different kinds of publishers (based on a study made by Odlyzco regarding Mathematical and Computer Science journals).
- \$1000-\$2000 per article as revenue of non-profit publishers.
- \$500-\$1000 per article as revenue of electronic start-up publishers
- \$100 per article for “web printer”, which is a print service from the web of previously published material.
- \$10 (Ginsparg 2003), or \$1-\$5 (Ginsparg, 2001) per article in the specific case of the arXiv, based on self archiving and pure distribution via open web access.

Ginsparg based his remark regarding the benefits being obtained by the commercial publishers on the fact that the revenue of the non-profit publishers is an indicator of the editorial, production and distribution costs involved in academic journals publication. “Note – he indicated – as an aside that insofar as revenues=costs for non profit operations, and if the level of services provided is the same as by the ‘high end’ commercial publishers, then it is possible to estimate the potential profit margin of the latter.” Ginsparg continued his estimation about the publishing cost per article suggesting that by “eliminating the print product, and by restructuring the workflow to take greater advantage of electronically facilitated efficiencies, it is likely that the costs of a relatively large existing publisher could be brought down closer to **\$1000/article**...We can also ask whether an idealistic electronic start-up venture, without the legacy problems of an existing publisher, might be even more efficient. At least one such in physics, currently publishing about 700 articles per year, operates in the **\$500/article** range...But private communication suggests that this number is likely to creep upward rather than downward, as some of the labor volunteered from initial enthusiasm is replaced by paid labor, and salaries for existing labor are adjusted to competitive levels for retention, so might also move closer to the **\$1000/article** published range.” *Ginsparg made the conclusion that “costs on the order of some irreducible \$1000 per peer-reviewed*

published article should be expected, using current methodology” for electronic publishing with no print product (emphasis added).

Consequently, electronic publishing costs (with no print product) were in the range of \$500-\$1000 per article (for year 2001), where the more volunteer work is done, the closer the costs are to the lower part of the range, and the less volunteer work is done, the closer the costs are to the upper limit of the range. In any case, the peer-reviewing is supposed to be based on volunteers.

Ginsparg (2003) indicates that “One proposal to continue funding the current peer-review editorial system is to move entirely from the subscription model to an ‘author-subsidy’ model, in which authors or their institutions pay for the material, either when submitted or when accepted for publication, and the material is then made freely available to readers. While such a system – Ginsparg adds – may prove workable in the long-run, it is difficult to impress upon authors the near-term advantages of moving in that direction... A system in which editorial costs are truly compensated equitably would also involve a charge for manuscripts that are rejected (sometimes these require even more editorial time than those accepted), but implementing that is also logistically problematic.” (Ginsparg, 2003; p. 313)

The author-subsidy, or the “scholarly subsidy model” as Harnad (1996) called it, or the Open Access’s “Publishing Processing Charge” model, takes into account that "unlike in trade publication, authors are willing to PAY to reach their colleagues' eye-balls" (Harnad, 1996, Harnad’s emphasis) and charges authors to publish their papers. This should consequently mean that the journal that follows this model is then free to anyone who wants it, because the costs are covered by the authors. Butler (1999) considers that bringing to the authors the costs of editing, producing, promoting and distributing the journal is a good idea because "scientists depend on publishing for career advancement, but they do not pay directly for journals, so have no incentive to stop submitting to high-priced journals”, where profit organizations are having a profit of about 70%-80%, as Ginsparg (2001; 2003) suggested.

A modification of the “Publishing Processing Charge” model might be to return to the author or to his/her organization the amount paid as “Publishing Processing Charge” (or substantial part of it) by means of providing him/her, or his/her organization with a complimentary subscription for a time period in which the subscription fee would be equivalent to the “Publishing Processing Charge”.

(Bergstrom and Bergstrom (2002; 2006) made an economical study regarding the economics of scholarly journal publishing and identified the following prices per page that synthesizes the subscription rates of different kinds of journals:

Subscription prices per page

	\$ per page
Non-Profit	\$0.46
Joint	\$0.94
For-Profit	\$1.42

Hence, if a Journal has an average of 100 pages per issue and 6 issues per year, it will contain about 600 pages per year, meaning the subscription rates would be:

- \$276 for the average of non-profit journals.
- \$564 for the average of joint journals.
- \$852 for the for-profit average.

Consequently, a publishing processing charge of \$500 per article will be paid back, in value, to the author or his subsidizing organization, by means of a complimentary subscription of one year, and also publishing the article in an open access electronic journal, which would make it more accessible for a larger number of potential readers.

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