

Learned Societies and the Subscription Model

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!! Health Warning !!

I am the Lead Officer for publications at the Royal Society (unpaid) *and* the Chief Science Advisor to the Institute of Physics Publishing (for which I am paid)

Both Organisations derive income from the subscription model

Why Publish?

- Publication is an integral part of the scientific endeavour
- Other scientists can read the work and apply the tests of consistency and reproducibility
- Possible applications to wealth creation etc can be identified
- The results of a single study can be synthesised with others to provide a coherent view of the natural world

Do we need Peer Review?

- Peer review is systemised accountability through expert judgement
- Experience supports the need for peer review as a check but not a guarantee of quality
- The majority of participants in the present debate support the role of peer review
- It forms *part* of the defence against fraud (e.g. the fabrication of data) or misconduct (e.g. plagiarism). Peer Review is *not* a fraud detection system

Points of Agreement

- Research not complete until it is published
- Quality costs money and time
- Peer Review remains the preferred option, at least for the time being
- Someone, somewhere has to pay for the costs of publication
- Any business model must be ***sustainable***

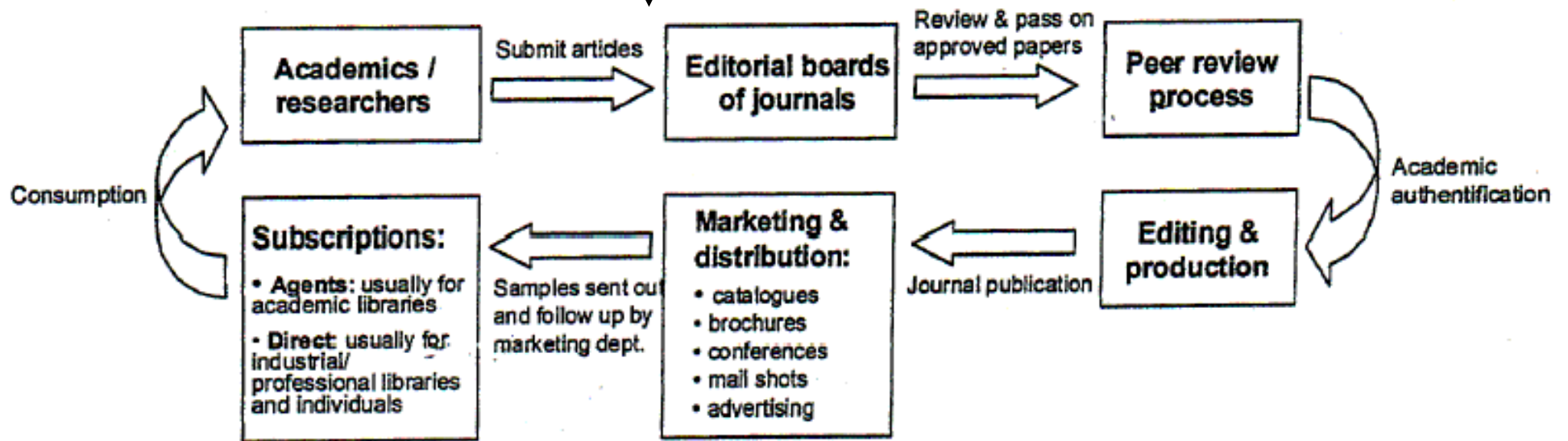
Open Access versus Subscription (A simplified version)

- ***Open Access*** makes publications freely available but passes on the cost to the producer of research provided a quality threshold is reached
- ***The Subscription*** model charges for access but considers all papers from whatever source free of charge and publishes those that meet a quality threshold

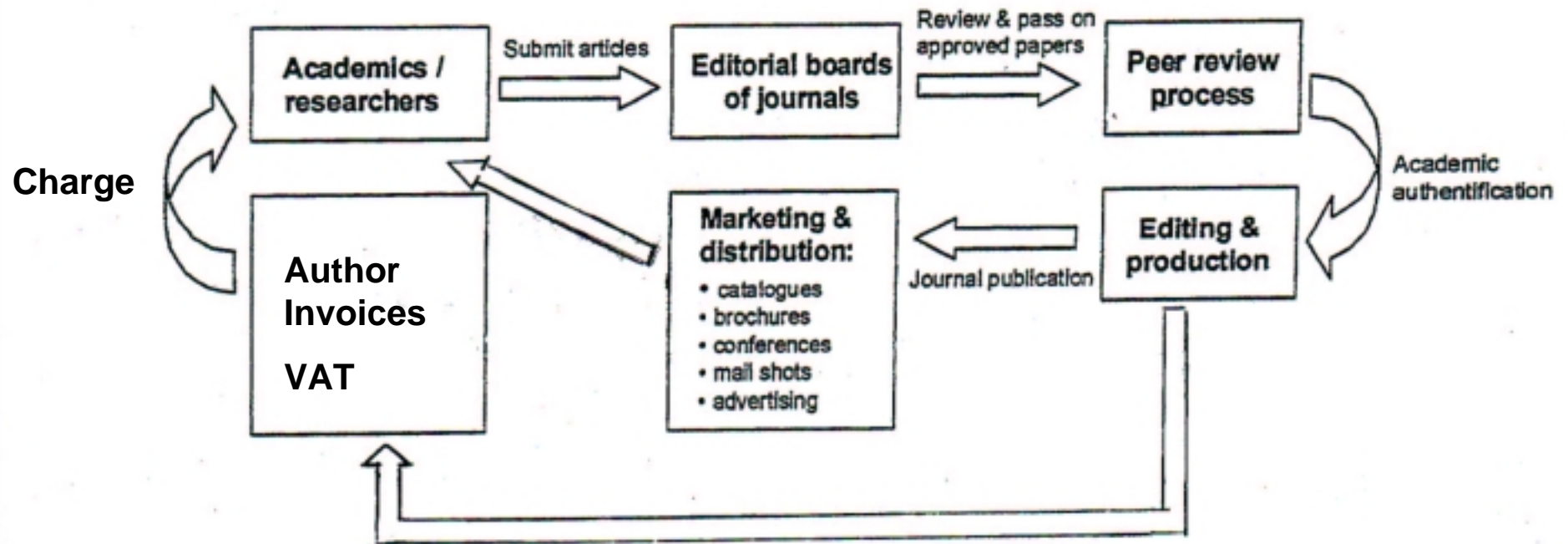
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Subscription Model



Open Access

Breakdown of Costs

- Results of a bench marking study for ALPSP
- Refereeing..... 25%
- Editorial and typesetting....33%
- Subscription Management...7%
- Physical production and distribution...23%
- Sales and Marketing....13%
- Promotion to Authors....2%

$B = \text{Cost up to Acceptance/Rejection} + \text{“Fixed Costs”}$

$A = \text{Cost subsequent to Acceptance}$

As a first approximation assume $A=B$

$x = \text{number of papers submitted}$

$y = \text{number of papers accepted}$

$\text{Income} = y * \text{Charge to Authors (C)}$

$\text{Expenditure} = B(x-y) + 2B$

$C = B(1 + 1/p)$ where p is the probability of acceptance

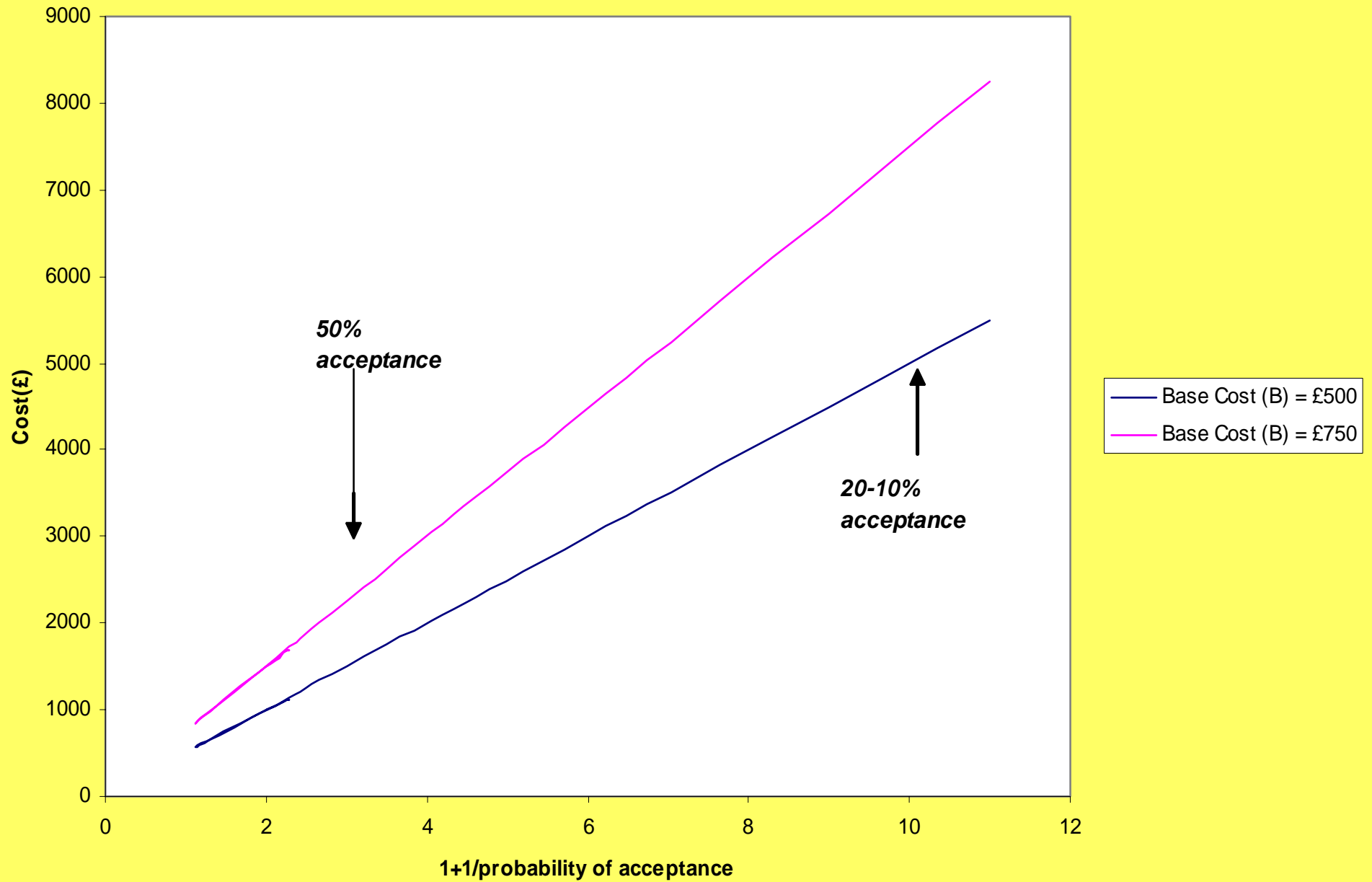
Formula

The charge to authors is a strong function of the rejection rate if the business model is to be sustainable. A significant component of the cost is expended on papers which are not published.

Charge to Authors= $B(1+1/p)$ where p is the probability of acceptance

B will be called the “Base Cost”

Charge to Authors



Estimates of the Base Cost (B)

- Varies hugely depending to whom one talks
- The IOPP from its experience with the Open Access “New Journal of Physics” suggests a figure of £750
- This appears to be consistent with other estimates for journals with a high rejection rate
- PLoS at \$1500+ \$1500 interest charge on initial grant assuming 300 papers published a year with a rejection rate of 70% yields £650

Case Study: University of Bristol

- Journals Expenditure = £1.7 million
- Papers published / year = 2300
- Total Cost assuming an average of £1100/paper = £ 2.5million

Compare with Duke University

- 4500 papers @\$1500 = \$6.75million, total library budget for journals = \$6.6 million

The UK as a whole

- We publish 70,000 articles /year
- Direct Costs of Journals to Libraries is £70million (approx, probably an upper bound)
- $70,000 \times £1100 = £77\text{million}$
- Typically UK based journals attract ~60% or greater **subscriptions** from non-UK sources
- Conversely, UK scientists submit a substantial fraction of their work to US based publications
- Cambridge alone publishes 7000 papers a year, high citation score implying a cost of at least £8 million

Open Access and the UK

- Little or no financial advantage to the UK as a major producer of scientific research
- Likely UK learned societies would lose income from overseas
- The popularity of US journals as vehicles for publication of European work might lead to transfer of resources from Europe to the US

The UK situation

- The “dual support” system in the UK would mean that a transfer of resource from the Funding Councils to the Research Councils is necessary.
- There might be variation in publishing rates and therefore costs as a function of time and across the Research Councils could be unpredictable
- There is an EU VAT complication on electronic only

Other Potential Problems (none of which is insoluble)

- Book Publishing..... presumably no suggestion of open access...some publishers subsidise their book programme through Journals
- Review Articles...an immensely important resource. At present Authors usually receive a fee.
- Hybrid Journals that contain both original research and Review articles “news and views”...which model?
- Exploitation by authors/publishers of “free” review service

Problems (continued)

- Possible exclusion of poorer authors in the West....retired academics, those without grants
- Exclusion of authors from developing countries from journals of high profile with rejection rates in the >80% range on the grounds that the work could be published elsewhere.
- Continuity of “local” archives

The Middle Way

- Retain the subscription model for its advantages of stability in library commitment and access to all researchers independent of their support
- Publishers to take a liberal view on Copyright, e.g. by allowing the posting of work accepted for publication on personal or institutional websites
- Make material freely available at some stage (All current IOPP material is available for one month. All RS material is free after one year)

The Middle Way (contd)

- Price increases and margins to be monitored and controlled in- house
- Clarity and transparency on the support given to science by learned societies through income derived from publishing activities
- Free or heavily discounted subscriptions to the less developed countries through the good offices of INASP or similar organisations
- Keep an open mind on alternative business models provided they have in-built sustainability
- Explore other sources of funding

Conclusions

- The proposers of Open Access have performed an invaluable service in raising the issue of the most effective way that the results of scientific research can be made widely available
- The existing businesses models will change over the next few years and learned societies have the unique opportunity to experiment (e.g. the IOPP's NJOP)
- The PNAS “mixed” model is to be welcomed as an experiment and a test of sustainability
- On any model, our colleagues in the developing countries will need special consideration

Conclusions (contd)

- There are issues associated with Open Access e.g. sustainability and the need for investment in new technology
- Many Scientists do not have, nor indeed need, access to research funds.
- There may be a downward pressures on quality if publishers adopt open access
- On the other hand, the discipline of paying for publication might discourage marginal papers!