Scientific publication quality assurance and research excellence

by

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The varied and conflicting interests of the stakeholders

(1) Researchers

- Convenient and ready access to the relevant literature
- Freedom to submit their work to the journal of choice
- Fair and impartial treatment by Editors/referees
- VIP (Visibility, Impact, Prestige)
(2) Funders of Research

• Wide dissemination of work they have supported
• Quality assurance confirmation of their own assessments by an outside organisation (usually publishers)
• Access to published work to inform future funding patterns (topics and people)
(3) Librarians and Information Managers

- Continuity of information flow (implications for preservation)
- Maximise value of service provision within budgetary constraints
- Exploit fully new technologies for the benefit of researchers
- A consultative role (at least) in the organisation of institutional/subject repositories
(4) Publishers

- Provide a first class service to authors and referees
- Generate Profit for
  1. Meeting the needs of sustainability
  2. Future investment in Technology
  3. Exploring new markets and products
  4. Satisfying shareholders (commercial publishers)
  5. Funding activities for the benefit of the relevant discipline (learned society publishers)
(5) The General Public

- Engagement in the scientific endeavour
- Access to knowledge and information (a human right?)
- Assurance that fraud is prevented or detected before it can do harm
- Evidence that their contributions through the tax system are wisely spent
The Grand Challenge

To find a sustainable business model which meets the apparent conflicting interests of all the parties involved
The Traditional Subscriber Model

Consumption

Academics / researchers → Submit articles
Editorial boards of journals → Review & pass on approved papers
Peer review process

Subscriptions:
- Agents: usually for academic libraries
- Direct: usually for industrial/ professional libraries and individuals

Marketing & distribution:
- Catalogues
- Brochures
- Conferences
- Mail shots
- Advertising

Editing & production

Journal publication → Academic authentic
An alternative model based on “Open Access”
Breakdown of Costs

• Results of a benchmarking 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%
On pure “Author Pays” what charges need to be levied?

The cost is a strong function of the rejection rate. A significant component of the cost is expended on papers which are not published.

I have demonstrated that the charge to authors for sustainability is of the form:

\[ \text{Charge} = B(1+1/p) \]

where \( p \) is the probability of acceptance and \( B \) is a reference “base” cost.
Charge to Authors

Base Cost (B) = £500

Base Cost (B) = £750

50% acceptance

20-10% acceptance
Processes Supporting Quality

- Quality in S&T publications
- Handling submissions and identifying decisions requiring judgement
- Author/Referee support
- Audit
Quality

- Attract high quality papers which are likely to have a major influence....”changing the agenda”
- Fair and constructive refereeing
- Speed of publication and maintaining contact with authors during editorial processes
- Wide (cognate) readership
- Well produced and visually attractive product
Pre – Publication Screening

Paper Submitted

Suitable?

Yes

Agreement of journal choice?

Yes: on to refereeing

No

Reject

No
The Refereeing /Adjudication Process

A

Referees Chosen

Referees Agree?

NO

YES

Report Positive?

YES

Revisions Required?

NO

Accept

NO

Seek Adjudication?

NO

Accept or Accept & Revise?

NO

Reject

YES

C

C

YES

NO
Why Audit

- Published Papers often of higher quality than initial submission
- As a measure of time – dependent quality
- Encourages the active involvement of Editorial Board Members
- The Process of audit feeds into the perception of quality (…..authors, referees EB members, the wider community)
Fraud (1) Why?

• Personal Vanity
• Career Progression
• Peer Pressure to “succeed”
• Financial gain
• Misplaced loyalty
• Help to juniors
• Etc…..etc
Fraud (2) Does it matter?
No

- Rare in “harder” sciences because it is easy to detect
- Science is its own policeman and will put right any fraud/errors in due course
- It is a “victimless crime” – the only person to suffer, if found out, is the perpetrator
Fraud (3) Does it Matter?
Yes

- Public support for and acceptance of science relies on **trust**. Every example of fraud in one discipline can react negatively on other and even unrelated disciplines.
- Far from being a “victimless crime”, fraud can impact on close colleagues, institutions, journals and future funding priorities.
- Fraud can lead to diversion of effort from productive research.
Prevention: Who is responsible?

• The short answer is that we all are
• Journals and referees have a special duty of care
• Funders too must be involved

Example: Diabetes UK state… “"When an offer of funding is made we will expect the Institution to sign an agreement document and in doing so will be confirming that they have the appropriate mechanisms to deal with fraud”

• Research leaders: avoidance of guest authorship, monitoring, mentoring advising on the ethical dimensions in science
Summary and Challenges

Who should pay the costs of Publication?
- readers (librarians)/authors (funders)/charities/governments/others

Who should maintain the archive?

How can we maintain quality?

How do we prevent fraud?

Are we sensitive enough to the needs of developing countries?

Is there a danger that funder/government pressure could lead to monopolies to the detriment of science?