The changing nature of scholarly communication

Digital Humanities Australia 2012 – “Building Mapping Connecting”

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The cycle of scholarly communication

1. Read
2. Idea
3. Grant
4. Research
5. Publish

The cycle continues in a loop with arrows indicating the flow from one stage to the next.
Invisible colleges
Spectrum of scholarly communication

- Hard science
- ‘Urban’
- Many people working on one area
- Fast publishing

- Arts & Humanities
- ‘Rural’
- Few people on a topic
- Slow publishing

Conference papers ➔ Journal articles ➔ Monographs
Unit of scholarly communication – scholarly article

1665
Philosophical Transactions of the Royal Society est.

2012
Electronic–only journals

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Science
The world's leading journal of original scientific research

Founded in 1880 on seed money from the American inventor Thomas Edison, Science has grown to become the world's leading outlet for scientific news, commentary, and cutting-edge research, with the largest paid circulation of any peer-reviewed general-science journal.
Embedded in the reward system

- Idea
- Grant
- Research
- Read
- Publish

Citation counts
Impact factors

ERA
HERDC
Publication record

Promotion

ANU Office of Scholarly Communication
Traditional ways to assess value

– 1955 – Eugene Garfield founded Institute for Scientific Information & Science Citation Index
  • Based on a calculation of no of citations
– 1972 – Journal Impact Factor
  • Averages the number of citations per article in a journal
– early 2000’s – bought by Thompson Reuter’s Web of Science and Web of Knowledge
  • Still based on citations & JIF
Jumping on the assessment bandwagon 2004-2009

- Elsevier’s SciVerse Scopus
  - http://www.info.sciverse.com/scopus
- Google Scholar
- Microsoft’s Academic Search
  - http://academic.research.microsoft.com/

• Variations on a theme - still relying on citation data from bibliographic databases
• IFs rank journals, not articles
Scholarly publishing = failed economy

• The buyer and seller never meet
  – Publishers sell to Libraries
  – Libraries buy in behalf of authors

• Academics are often unaware of the role libraries play in giving them access to work
‘Academic authors write for honour’

• There is no direct payment for academic writing
• ‘Payment’ is in the form of esteem
  – Reputation
  – Prizes
  – Tenure
  – Membership of societies
• The ‘academic gift principle’
Cost of subscriptions

Figure 1: Average Price of Periodicals in Subject Fields
1980 to 2002

Source: The Bowker Annual Library and Book Trade Almanac (published annually by R.R. Bowker until 1996 and since by Information Today, Inc.)
Regular publishing

Institutional reader → Library → Publisher → Author

Non-institutional reader
Open access – publicly funded research should be freely available

• Two roads to open access:
  – ‘Gold road’ - publishing in an open access journal
  – ‘Green road’ – putting a version of work in a subject or institutional repository
Gold (open access) publishing

Article processing charges can range from $0 to US$3000
The model can work - PLoS One

Interactive open-access journal for the communication of all peer-reviewed scientific and medical research.

• Short peer review period
• Multi-disciplinary
• Estab 2007, by 2010 world’s largest journal (6749 articles)
• Lower article processing costs
Green open access publishing

Institutional reader → Library → Publisher → Author

Non-institutional reader → Repository

Free → Library → Publisher → Author

Free → Repository
It comes down to the version

Preprint
Submitted Version
Work sent to publishers for review

Postprint
Accepted Version/
Accepted Manuscript
Author’s peer reviewed and corrected final version

Published Version
Version of Record
For green OA the accepted version is gold!

- Preprint
- Submitted Version
- Work sent to publishers for review
- Postprint
- Accepted Version/
  Accepted Manuscript
- Author’s peer reviewed and corrected final version
- Published Version
- Version of Record
Barriers to engagement with OA

• Lack of infrastructure
  – No subject-based repository (eg: arXiv, PubMed Central, RePEc, SSRN)
  – No institutional repository

• Infrastructure difficult to use
  – Copyright checking complex (even for me!)
  – Technical issues, eg: converting files to pdf
  – Administration of payment of article processing fees complex

• Lack of incentive
  – No mandate or other policy support for open access
  – No institutional/funding support for article processing fees

• Fear
  – Of plagiarism
  – Of contravening publisher’s agreements (& therefore risking further publication)
Open access is also making work understandable

- Research articles are often impenetrable

- Attempts to address this:
  - *Science*: one-line summary of articles in the contents page.
  - *Science* and *Nature*: articles that discuss research papers published in their journals.
  - *British Medical Journal (BMJ)* includes in its articles “What is already known on this topic” and “What this study adds”.

Changing scholarly presses

ANU E Press

http://epress.anu.edu.au/

– Fully open access - pdf/ePub/mobi/view online
– Print on Demand (mostly $25-$50)
– Downloads in 2011 = 4,280,168
– Self sustaining (except staff)
– 60 books per year
– 390 in catalogue
Changing scholarly article

- **RNA Biology**
  - Submit with article for peer review: a wiki article, readable by an undergraduate student.
  - [http://www.landesbioscience.com/journals/rnabiology/](http://www.landesbioscience.com/journals/rnabiology/)

- **PLoS**
  - How many times an article has been: cited, commented on, rated, blogged about, hyperlinked and bookmarked online

- **Realtime.Springer**
  - Visualisations of how literature is being used
Novel Biochemical Markers of Psychosocial Stress in Women

Total Article Views: 4,301

Citations
- CrossRef (6)
- PubMed Central (1)
- Scopus (4)
- Web of Science (7)

Social Networks
- CiteULike (2)
- Mendeley (11)

Related Articles on the Web
- Google Scholar
- PubMed

Share this Article
- Email this article

*Although we update our data on a daily basis, there may be a 48-hour delay before the most recent numbers are available. PMC data is posted on a monthly basis and will be made available once received.
Changing ways to assess ‘usage’

– MESUR
  • [http://mesur.informatics.indiana.edu/](http://mesur.informatics.indiana.edu/)
  • (Metrics for Scholarly Usage of Resources) 2006 Andrew W Mellon Foundation grant

– Eigenfactor
  • Uni of Washington

– altmetrics.org
  • ‘community is striving to understand and measure the products and practices of scholarly communication on the web
Free & simple - Google citations

Danny Kingsley
Manager, Scholarly Communication @ ANU
Open access - scholarly communication - research assessment
Verified email at angstromgroup.com.au
My profile is private

Citation Indices

<table>
<thead>
<tr>
<th>All</th>
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<tr>
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Citations to my articles

<table>
<thead>
<tr>
<th>Year</th>
<th>Title / Author</th>
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<tbody>
<tr>
<td>2006</td>
<td>The publishing imperative: the pervasive influence of publication metrics</td>
</tr>
<tr>
<td>2007</td>
<td>The journal is dead, long live the journal</td>
</tr>
<tr>
<td>2009</td>
<td>The state of the nation: A snapshot of Australian institutional repositories</td>
</tr>
<tr>
<td>2008</td>
<td>Those who don't look don't find: disciplinary considerations in repository advocacy</td>
</tr>
<tr>
<td>2008</td>
<td>e-Publishing's impacts on journals and journal articles</td>
</tr>
</tbody>
</table>
Changing ways to share

• Online sharing:
  – Zotero  http://www.zotero.org
  – Mendeley  http://www.mendeley.com

• Social bookmarking
  – CiteUlike  http://www.citeulike.org
  – Connotea  http://www.connotea.org

• Data
  – DataCite  http://datacite.org
Changing ways to communicate findings

• **News**
  – Faculty of 1000

• **Publisher hosted comment spaces**
  – BMJ, PLoS, BioMed Central, Bioinformatics

• **User-edited reference**
  – *Encyclopedia of Life*, Scholarpedia, Citizendium

• **Blogs**
  – Researchblogging.org, [www.blogger.com](http://www.blogger.com)

• **Social networks**
  – Nature Networks, VIVOweb

• **Data repositories**
  – GenBank

• **Social Video**
  – SciVee
Summary

• Methods of scholarly communication change between and within disciplines
• Unit of ’currency’ still article/book chapter
• Reward system is beholden to the article
• Scholarly publishing is at crisis point
• Open access offers alternative to traditional publishing
• New types of communication are emerging
• New types of measuring ‘impact’ and relevance are emerging
• Until the reward system catches up we are stuck with the old paradigm
Questions?

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