Institutional Repositories and their place in the scholarly communication landscape

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CAUL Research Repositories Community Days 2015
My interests

• Executive Officer, Australasian Open Access Support Group
• Chair, Committee on Publication Ethics
• Involved in a number of publishing initiatives, including EQUATOR, AllTrials
• Previously Chief Editor *PLOS Medicine*, then Medicine and Biology Editorial Director, PLOS
Australasian Open Access Support Group – AOASG

- Information
- Resources
- Discussions
- Graphics
- Blogs, Twitter

@openaccess_oz
www.aoasg.org.au

Supported by 9 AU and 8 NZ institutions
We are in a phase of accelerated innovation

101 Innovations in Scholarly Communication

The Changing Research Workflow

Science is in transition. This poster gives an impression of the exploratory phase of a project aiming to chart innovation in scholarly information and communication flows from evolutionary and network perspectives.

We intend to address the questions of what drives innovation and how these innovations change research workflows and may contribute to more open, efficient and good science.

Most important developments in 6 research workflow phases

101 Innovative tools and sites in 6 research workflow phases (<2000 - 2015)

Typical workflow examples

Bianca Kramer & Jeroen Bosman
Geneva Workshop on Innovations in Scholarly Communication (OAI9), Geneva, June 18, 2015
Where once there were monoliths

https://www.flickr.com/photos/thefirebottle/
...now innovation is filling many niches
And this reflects the complex nature of scholarship

(preparation and analysis)

Rounds of grant writing and application

Peer review of other grants

Iterations of search and reading

Data generation

Rounds of experiments and measurements

Drafting, receiving comments, rewriting

(preparation)

Journal article

Submit, peer review, rejection, resubmitting

(outreach)

Assessment

Discovery

Analysis

Writing

Adapted from: Bianca Kramer & Jeroen Bosman
Geneva Workshop on Innovations in Scholarly Communication (OAI9), Geneva, June 18, 2015
Where is innovation happening in the ecosystem?
Repositories are a key part of the OA infrastructure

Funder requirements

- NHMRC
  Working to build a healthy Australia
- Australian Government
  Australian Research Council
- COAR
  Confederation of Open Access Repositories
- AOASG
  Australasian Open Access Support Group

DOAJ
DIRECTORY OF OPEN ACCESS JOURNALS
Repositories as part of the OA infrastructure
There’s other critical infrastructure needed to support the ecosystem

- OA definitions
- Machine and human readable licenses
- Tools for reproducibility
- Unique author ID
- Unique article & sub-article ID
- Accurate crosslinking
- Article versioning
- Good tools and standards for discoverability

Transparency and Openness Promotion (TOP) Guidelines
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## ‘open access’ vs ‘free access’

<table>
<thead>
<tr>
<th>Free to Read?</th>
<th>Immediate free access</th>
<th>Possibly after an embargo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>unrestricted free distribution and re-use</td>
<td>possibly no re-use</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>author retains rights to attribution</td>
<td>re-use rights must be obtained from publisher</td>
</tr>
<tr>
<td></td>
<td>materials immediately deposited in a public online archive</td>
<td>possible costs for copying or re-using</td>
</tr>
<tr>
<td></td>
<td></td>
<td>re-use rights may be withdrawn at any time</td>
</tr>
</tbody>
</table>
Licenses as infrastructure

http://creativecommons.org/licenses/
Creative Commons licenses means that copyright:

“can be used for what it is meant to in science, not to make the articles artificially scarce and in the process restrict their distribution, but instead, to ensure that their potential for maximum possible dissemination can be realized”

Jan Velterop
Rights in Green OA are not clear

<table>
<thead>
<tr>
<th>Copy right</th>
<th>License to publish</th>
<th>Cost to Access</th>
<th>Free access?</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AU</td>
<td>Free</td>
<td>Immed</td>
</tr>
<tr>
<td>?</td>
<td>?</td>
<td>Free</td>
<td>0-48 mo Not “Open”</td>
</tr>
<tr>
<td>PUB</td>
<td>All Rights Reserved</td>
<td>$$</td>
<td>6-48 mo +, Never “Open”</td>
</tr>
</tbody>
</table>

Submitted version “Preprint”

Accepted version “Post-print”

Published version “Version of record”

https://commons.wikimedia.org/wiki/File:Galileo_manuscript.png
There’s other critical infrastructure needed to support the ecosystem

- OA definitions
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- **Tools for reproducibility**
  - Unique author ID
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Transparency and Openness Promotion (TOP) Guidelines
# Transparency and Openness Promotion (TOP) Guidelines

<table>
<thead>
<tr>
<th>Section</th>
<th>Level 0</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citation Standards</td>
<td>Journal encourages citation of data, code, and materials, or says nothing</td>
<td>Journal describes citation of data in guidelines to authors with clear rules and examples.</td>
<td>Article provides appropriate citation for data and materials used consistent with journal's author guidelines.</td>
<td>Article is not published until providing appropriate citation for data and materials following journal's author guidelines.</td>
</tr>
<tr>
<td>Data Transparency</td>
<td>Journal encourages data sharing, or says nothing</td>
<td>Article states whether data are available, and, if so, where to access them.</td>
<td>Data must be posted to a trusted repository. Exceptions must be identified at article submission.</td>
<td>Data must be posted to a trusted repository, and reported analyses will be reproduced independently prior to publication.</td>
</tr>
<tr>
<td>Analytic Methods (Code)</td>
<td>Journal encourages code sharing, or says nothing</td>
<td>Article states whether code is available, and, if so, where to access them.</td>
<td>Code must be posted to a trusted repository. Exceptions must be identified at article submission.</td>
<td>Code must be posted to a trusted repository, and reported analyses will be reproduced independently prior to publication.</td>
</tr>
<tr>
<td>Transparency</td>
<td>Journal encourages materials sharing, or says nothing</td>
<td>Article states whether materials are available, and, if so, where to access them.</td>
<td>Materials must be posted to a trusted repository. Exceptions must be identified at article submission.</td>
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</tr>
<tr>
<td>Research Materials Transparency</td>
<td>Journal encourages design and analysis transparency, or says nothing</td>
<td>Journal articulates design transparency standards</td>
<td>Journal requires adherence to design transparency standards for review and publication</td>
<td>Journal requires and enforces adherence to design transparency standards for review and publication</td>
</tr>
<tr>
<td>Design and Analysis Transparency</td>
<td>Journal encourages design and analysis transparency, or says nothing</td>
<td>Journal articulates design transparency standards</td>
<td>Journal requires adherence to design transparency standards for review and publication</td>
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</tr>
<tr>
<td>Preregistration of studies</td>
<td>Journal says nothing</td>
<td>Journal encourages preregistration of studies and provides link in article to preregistration if it exists</td>
<td>Journal encourages preregistration of studies and provides link in article and certification of meeting preregistration badge requirements</td>
<td>Journal requires preregistration of studies and provides link and badge in article to meeting requirements.</td>
</tr>
<tr>
<td>Preregistration of analysis plans</td>
<td>Journal says nothing</td>
<td>Journal encourages preanalysis plans and provides link in article to registered analysis plan if it exists</td>
<td>Journal encourages preanalysis plans and provides link in article and certification of meeting registered analysis plan badge requirements</td>
<td>Journal requires preregistration of studies with analysis plans and provides link and badge in article to meeting requirements.</td>
</tr>
<tr>
<td>Replication</td>
<td>Journal discourages submission of replication studies, or says nothing</td>
<td>Journal encourages submission of replication studies</td>
<td>Journal encourages submission of replication studies and conducts results blind review</td>
<td>Journal uses Registered Reports as a submission option for replication studies with peer review prior to observing the study outcomes.</td>
</tr>
</tbody>
</table>
Who needs to be involved in development, adoption and innovation in publishing?

- Academics
- Institutions
- Publishers
• Academics
  – OA: “The policy should be adopted by the faculty, not the administration...Campus entrepreneurs leading the campaign for a policy should be faculty.”
  – New technologies “figshare was originally created by Mark Hahnel as a solution to keep research outputs in one tidy place whilst allowing it to be discovered by like minded individuals, the academic community.”

http://cyber.law.harvard.edu/hoap/
• Academics

• Institutions
  – Publishing: “ANU E Press, as it was originally known, was established in 2003 to explore and enable new modes of scholarly publishing. Taking advantage of new information and communication technologies to make available the intellectual output of the ANU academic community, ANU E Press was Australia’s first primarily electronic academic publisher.”
Academics
Institutions
Publishers

Fig 3. Percentage of papers published by the five major publishers, by discipline in the Natural and Medical Sciences, 1973–2013.

http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0127502
We are in a stage of accelerated innovation in all stages of publishing: what happens next determines who contributes.