International trends in open access and repositories

Kathleen Shearer
Executive Director, COAR
Confederation of Open Access Repositories
COAR?

- An international association founded in 2009
- Office is based in Göttingen, Germany
- Members & Partners: over 120 institutions from 35 countries in Australia, Africa, Asia, Europe, North and South America
- Institutional membership fees: EUR 500
- CARL was a founding member
- Growing North American membership
Vision

A global knowledge commons based on a network of open access repositories
Who is COAR?
- Over 100 members and partners from 35 countries in 5 continents
- Universities, libraries, government agencies, open access organizations, not-for-profit organizations, and platform developers
- Diverse perspectives that share a common vision

Major Activities
- International voice
  Raising the visibility of repository networks as key infrastructure for open science
- Alignment and interoperability
  Building a global knowledge commons through harmonization of standards and practices
- Cultivating relationships
  Supporting an international community of practice for repositories and open access
- Building capacity
  Advancing skills and competencies for repository and research data management
- Adopting value-added services
  Promoting the use of web-friendly technologies and new functionalities for repositories

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How to participate?
- Organizations can join COAR for €500 Euros per year (about $600 US)
- Join as a single, consortial, or special member or partner
- Download the membership application (https://www.coar-repositories.org/about/join/become-a-member)
The international publishing system is broken!
The access problem

### TABLE 1: AVERAGE 2017 PRICE FOR SCIENTIFIC DISCIPLINES

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>AVERAGE PRICE PER TITLE</th>
<th>DISCIPLINE</th>
<th>AVERAGE PRICE PER TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>$4,773</td>
<td>Botany</td>
<td>$2,053</td>
</tr>
<tr>
<td>Physics</td>
<td>4,369</td>
<td>Zoology</td>
<td>1,988</td>
</tr>
<tr>
<td>Engineering</td>
<td>3,408</td>
<td>Math &amp; Computer Science</td>
<td>1,971</td>
</tr>
<tr>
<td>Biology</td>
<td>2,917</td>
<td>Geography</td>
<td>1,742</td>
</tr>
<tr>
<td>Food Science</td>
<td>2,567</td>
<td>Health Sciences</td>
<td>1,736</td>
</tr>
<tr>
<td>Geology</td>
<td>2,381</td>
<td>Agriculture</td>
<td>1,666</td>
</tr>
<tr>
<td>Technology</td>
<td>2,234</td>
<td>General Science</td>
<td>1,556</td>
</tr>
<tr>
<td>Astronomy</td>
<td>2,071</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: LJ PERIODICALS PRICE SURVEY 2017
CAREFUL, IT'S EXTREMELY UNBALANCED!
The participation problem

World scaled by number of documents in Web of Science by Authors Living There

2011

Created by @juancommander using d3.js and cartogram.js

Juan Pablo Alperin: http://jalperin.github.io/d3-cartogram/
The pressure to publish in "luxury" journals encouraged researchers to cut corners and pursue trendy fields of science instead of doing more important work.
We are all complicit!

10 simple strategies to increase the impact factor of your publication

by sven | Mar 5, 2015 | |

Impact factors are heavily criticized as measures of scientific quality. However, they still dominate every discussion about scientific excellence. They are still used to select candidates for positions as PhD student, postdoc and academic staff, to promote professors and to select grant proposals for funding. As a consequence, researchers tend to adapt their publication strategy to avoid negative impact on their careers. Until alternative methods to measure excellence are established, young researchers have to learn the “rules of the game”.
Abstract

The consolidation of the scientific publishing industry has been the topic of much debate within and outside the scientific community, especially in relation to major publishers' high profit margins. However, the share of scientific output published in the journals of these major publishers, as well as its evolution over time and across various disciplines, has not yet been analyzed. This paper provides such analysis, based on 45 million documents indexed in the Web of Science over the period 1973-2013. It shows that in both natural and medical sciences (NMS) and social sciences and humanities (SSH), Reed-Elsevier, Wiley-Blackwell, Springer, and Taylor & Francis increased their share of the published output, especially since the advent of the digital era (mid-1990s). Combined, the top five most prolific publishers account for more than 50% of all papers published in 2013. Disciplines of the social sciences have the highest level of concentration (70% of papers from the top five publishers), while the humanities have remained relatively independent (20% from top five publishers). NMS disciplines are in
Open access has arrived!
In dramatic statement, European leaders call for ‘immediate’ open access to all scientific papers by 2020.
Smooth transition?

Photo credit: Roy Gumple (www.allposters.com)
OA2020 – The Initiative

- **22 March 2017**
  University of California libraries sign EoI and launch local OA2020 site

- **22 March 2017**
  Declaration of support for OA2020 from the European Commission, announced on the 13th Berlin Open Access Conference, 21-22 March 2017, Berlin

Open Access 2020 is an international initiative that aims to induce the swift, smooth and scholarly-oriented transformation of today’s scholarly journals from subscription to open access publishing.
Scientists in Germany, Peru and Taiwan to lose access to Elsevier journals

Libraries pursue alternative delivery routes after licence negotiations break down

Quirin Schiermeier & Emiliano Rodriguez Mega

23 December 2016 | Corrected: 03 January 2017 | Updated: 09 January 2017

9 January: Since this story was published, Elsevier has granted a one-month access until the end of January — to those Taiwanese universities that had cancelled their subscriptions.

Affordable prices and open access essentially supports goals of FinELib consortium and Elsevier negotiations

Universities, Finland UNIFI is giving its full support to the FinELib consortium’s goals of large academic publisher Elsevier. The main goals are to ensure that the academic community and Elsevier’s journals at affordable prices and that there is a clear transition towards immediate open access.

The cost of access to Elsevier’s journals (the SD Freedom collection) has grown significantly unconscionable and accordingly demands that the increase in costs must stop.

23 maart 2017 - On the day of the hearing between Elsevier and the Dutch universities ScienceGuide has uncovered the contract which publicity was the centre of the dispute. The open access paragraph in the contract reveals how Elsevier plans to fight open access every step of the way.

All of the Dutch institutions combined will have the right to publish a maximum number of 3600 open access articles in Elsevier journals over the course of three years. They are only allowed to do so if the corresponding author is affiliated with a Dutch institution, and only a fraction of the publishers vast number of journals is eligible. Elsevier has succeeded to make this deal as unappealing as possible for authors, setting the ‘experiment’ up to fail.

All publicly funded research should be openly available to everybody. The fees paid by universities for subscriptions must enable open access publishing for Finnish researchers. The total costs of academic publishing must not be allowed to grow.

UNIFI requires that Elsevier react to the demands from Finnish universities and offers a solution combining affordable pricing and a transition towards immediate open access.
Another option...

Strengthen and add value to our repository networks
Current state of repositories internationally

Proportion of Repositories by Continent - Worldwide

- Europe: 45.3%
- Asia: 18.1%
- North America: 8.6%
- South America: 20.1%
- Africa
- Australasia
- Caribbean
- Central America
- Other

Total = 3346 repositories

OpenDOAR - 25-Jun-2017
The vast majority of open access policies are green!

OA Policy Requirements - Pasteur4OA Project (European Commission)

<table>
<thead>
<tr>
<th>Criterion (Green OA)</th>
<th>Number of policies</th>
<th>Criterion (Gold OA)</th>
<th>Number of policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit in repository required (Green OA)</td>
<td>381</td>
<td>OA publishing required</td>
<td>2</td>
</tr>
<tr>
<td>Deposit in repository requested</td>
<td>140</td>
<td>Recommended alternative to Green OA</td>
<td>97</td>
</tr>
<tr>
<td>Deposit in repository not specified</td>
<td>141</td>
<td>Permitted alternative to Green OA</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not specified/other</td>
<td>463</td>
</tr>
<tr>
<td>Total</td>
<td>663</td>
<td></td>
<td>663</td>
</tr>
</tbody>
</table>

*Table 3: Open Access policies: Green and Gold OA criteria*
“... The MIT Libraries must operate as an open, trusted, durable, interdisciplinary, interoperable content platform that provides a foundation for the entire life cycle of information for collaborative global research and education.”

“In this report, we describe a bold new vision for the library as an open global platform rooted in our shared values and mission.”
Lorcan Dempsey’s “Inside-out library

• The traditional library was built on an "outside-in" model: information materials were brought to the institution and made available for use.

• But, our environment has now changed. We live in an age of information abundance and transaction costs are reduced on the web. This makes the locally assembled collection less central. At the same time, institutions are generating new forms of data—research data, learning materials, preprints, videos, expertise profiles, etc.—which they wish to share with others.

These need to be managed and disclosed, as an "inside-out" perspective becomes more interesting.
Repositories are critical for our future vision of libraries

Dual mission of repositories

1. “Showcase” and provide access to institutional research
2. Nodes in a global knowledge commons
Science is increasingly global!
On May 8, 2017, several regional and national repository networks and stakeholder groups formally endorsed an international accord that will lead to the greater alignment of repository networks around the world. The aim of the accord is to improve cooperation between national and regional repository networks by identifying common principles and areas of collaboration that will lead to the development of global services.
1. Strategic coordination

To have a shared vision and a stronger voice for the repository community internationally

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COAR Guidelines for Assessing Publisher Repository Services

Statement against Elsevier’s sharing policy

Organizations around the world denounce Elsevier’s new policy that impedes open access and sharing

Signed by 300 organizations and 3000 individuals!
To demonstrate that we are building truly global services!

2. Data exchange

Cross regional harvesting

La Referencia (Latin America)

SHARE (North America)

OpenAIRE (Europe)

National Institutes of Informatics (Japan)

Chinese Academy of Sciences (China)

Africa

Australia/Pacific

Asia
3. Interoperability

To support the development of value added services across regions

COAR Controlled Vocabularies: #1 resource type (currently in English, Chinese, Dutch, French, Italian, Portuguese, Russian, Spanish, Turkish) Version 1.0 available on the COAR website [https://www.coar-repositories.org/activities/repository-interoperability/ig-controlled-vocabularies-for-repository-assets/deliverables/](https://www.coar-repositories.org/activities/repository-interoperability/ig-controlled-vocabularies-for-repository-assets/deliverables/) Version 1.1 will be available soon

Metadata guidelines: OpenAIRE and LA Referencia agreed to common guidelines in 2015
Elephant in the room
In their current form, repositories only perpetuate the flawed system

“What if we don’t change at all ... and something magical just happens?”
COAR Working Group, Next Generation Repositories

Eloy Rodrigues, chair (COAR, Portugal)
Andrea Bollini (CINECA, Italy)
Alberto Cabezas (LA Referencia, Chile)
Donatella Castelli (OpenAIRE/CNR, Italy)
Les Carr (Southampton University, UK)
Leslie Chan (University of Toronto, Canada)
Rick Johnson (SHARE/University of Notre Dame, US)
Paolo Manghi (CNR, Italy)
Lazarus Matizirofa (NRF, South Africa)
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Kathleen Shearer (COAR, Canada)
Tim Smith (CERN, Switzerland)
Herbert Van de Sompel (Los Alamos National Laboratory, US)
Paul Well (EDINA, UK)
David Worlock (Duraspace/Fedora, Canada)
Kazu Yamaji (National Institute of Informatics, Japan)
Next generation repositories

To position repositories as the foundation for a distributed, globally networked infrastructure for scholarly communication _on top of which layers of value added services will be deployed,_ thereby transforming the system, making it more research-centric, open to and supportive of innovation, _while also collectively managed by the scholarly community._
The system would be based on the following principles

- Distribution of control
- Inclusiveness
- Public good
- Intelligent openness

Design assumptions

- Focus on the resources themselves, not just associated metadata
- Pragmatism
- Evolution, not revolution
- Convention over configuration
- Engage with users where they are
Our vision involves more that just articles

All the valuable products of research should be shared!
### Next generation repositories

**Our Methodology**

<table>
<thead>
<tr>
<th>Step</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify major use cases</td>
<td>✓</td>
</tr>
<tr>
<td>Determine functionalities and behaviours</td>
<td>✓</td>
</tr>
<tr>
<td>Develop conceptual model</td>
<td>✓</td>
</tr>
<tr>
<td>Define technologies and architectures</td>
<td></td>
</tr>
<tr>
<td>Publish recommendations</td>
<td></td>
</tr>
<tr>
<td>Promote adoption and implementation</td>
<td></td>
</tr>
</tbody>
</table>
Open for public comment in early 2017

User stories

- Data mining
- Discovering metadata that describe a scholarly resource
- Discovering the identifier of a scholarly resource
- Discovering usage rights
- Resource syncing and notification
- Recognizing the user
- Commenting & annotating
- Providing a social notification feed
- Recommender systems for repositories
- Preservation
- Peer-review
- Comparing usage

By Petr Knoth, CORE

Current repositories

- Services we can develop with repositories today
  - Conceptual layer
    - Metadata
  - Interoperability
  - Persistence layer

Next generation repositories

- Services we can develop with the next generation of repositories
  - Conceptual layer
    - Usage interactions and metrics
    - Comments
    - Peer reviews
    - Messages
  - Global sign-on
    - Metadata
    - Content
    - Links between resources
    - Notifications
  - Interoperability
  - Persistence layer
Open peer review

Recommender systems

Standard usage statistics

Picture from to Petr Knoth
To support these services, we need to improve the functionality of repositories
- To be of, not just on the web
- Global interoperability (exposing content in a standardized way)
- Pro-active repositories
- To support development of value added networked services
Concluding thoughts

• Repositories are a technology, and technologies change
• What we are really promoting is a vision in which institutions, universities, and their libraries are the foundational nodes in a global scholarly communication system
• We can do this by leveraging, expand and enhancing the already globally connected international repository network – and working through our partners
• We need to start to coalesce around a shared vision
Thank you!