Overlay journals and the evolution of scholarly communication.

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What is an *Overlay*?

An overlay draws together data from a number of sources to create an additional service layer. A union catalogue is an overlay. OAIster is an overlay. Traditional overlays do not address the quality of the content they aggregate.

What makes a service an 'overlay' is its structure, the way it relates to other services.

What is an *Overlay Journal*?

While peer review has been identified as the most important activity of a journal to researchers, the other activities that 'make' a scholarly journal are:
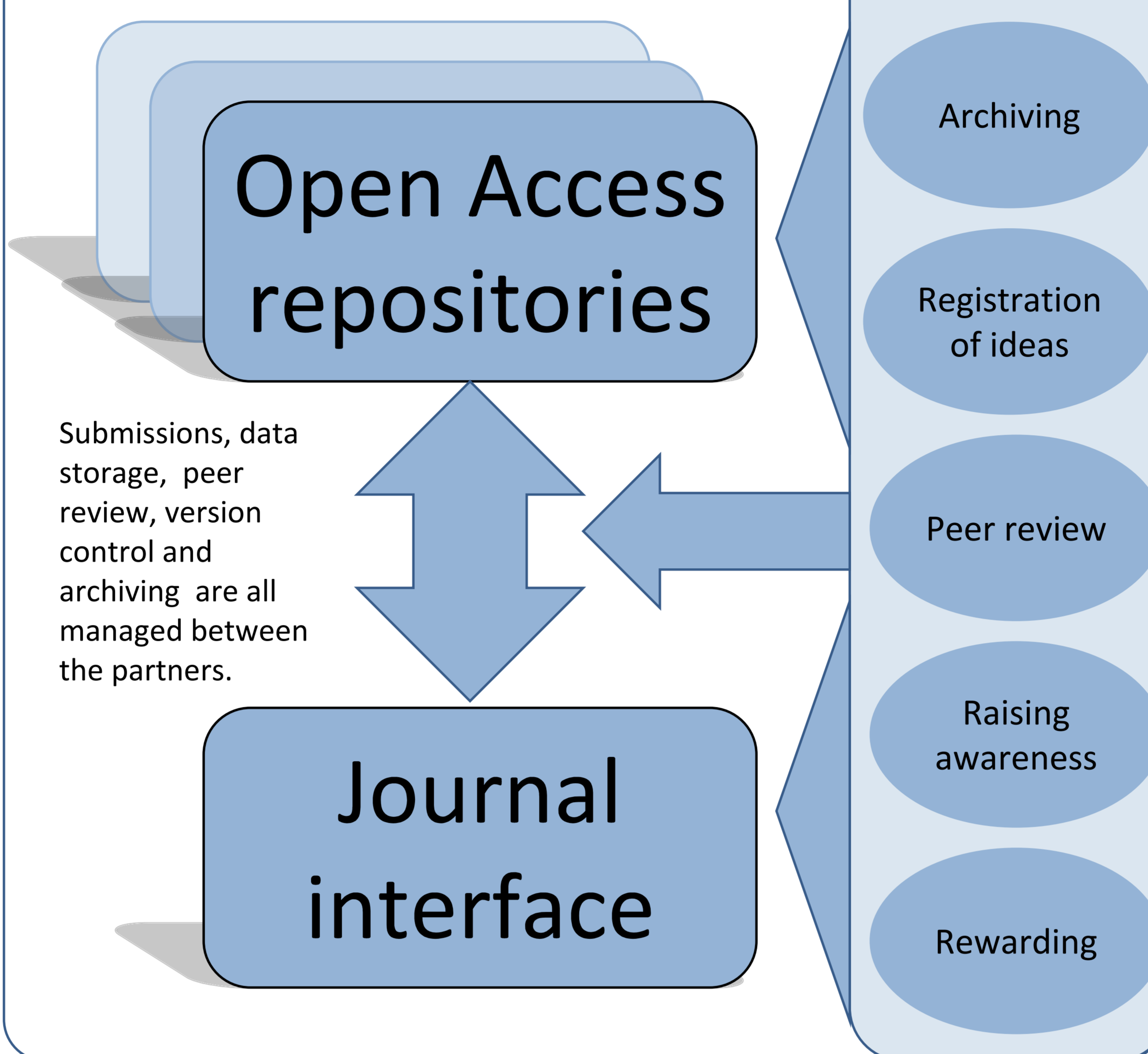
- **Registration** of ideas
- Raising **awareness** of the idea
- **Archiving** its expression
- **Rewarding** the author

An overlay journal shares the structure described above – it is an extra service layer overlaid on one or more Open Access repositories. It is distinguished from traditional overlays because it also undertakes formal quality assurance, via the peer review process, of the content it aggregates.

It fulfils all five of the key activities of a scholarly journal either in and of itself or as a consequence of its relationship with OA repositories.

Overlay journals have been described as the future of open access . This poster outlines some of the ways in which overlays can improve scholarly communication.

Overlay journals: a functional overview

Open Access repositories

Submissions, data storage, peer review, version control and archiving are all managed between the partners.

Journal interface

Journal functions:

- Archiving
- Registration of ideas
- Peer review
- Raising awareness
- Rewarding

Exploring Overlay Journals:

JISC funded projects have explored and enhanced overlay journals:

The **Repository Interface for Overlaid Journal Archives (RIOJA)** project explored the attitudes of academics in physics and astronomy to journal publishing and the overlay journal model RIOJA developed a set of APIs to link journal and repository software in support of the peer review of papers stored in Repositories, and demonstrated them using the Open Journal System (OJS) software and arXiv.

The **Overlay Journal Infrastructure for the Meteorological Sciences(OJIMS)** project created the basis for a subject repository for meteorological science and a peer-reviewed data journal overlaid upon it.

What makes an Overlay Journal unique?

Overlay journals are unique because their contribution to scholarly communication is so flexible.

Overlay journals and repositories can interact in many different ways, for example:

- The repository is used for submissions and archives preprints *e.g. Annals of Mathematics*
- The repository handles submissions and hosts the final versions *e.g. Symmetry, Integrability and Geometry: Methods and Applications (SIGMA).*
- The repository is used as the basis for the journal's online presence *e.g. Logical Methods in Computer Science*

Overlay journals can be open access, or can use a subscription model for their final versions. The arXiv repository supports overlay journals that use these differing interactions and business models, which shows the flexibility of the overlay model.

Different levels of interaction between a journal and a repository are possible, up to 'full' overlay in which the two are linked at every stage of the publication process.

The links between repositories and overlay journals mean that pre- and post-prints can be made available, alongside datasets, peer review notes and final versions . This opens up quality assurance to scrutiny and can improve scientific communication.

If the challenge is integration, overlay journals are, by their nature, part of the answer.

Opportunities for repositories:

- *They can fulfil their potential as scholarly resources.*
- *They can support new mechanisms of peer review.*
- *They can create new forms of journal using the overlay model.*
- *the overlay concept enhances repositories by increasing their usefulness to researchers and improving their sustainability with value-added services.*

Opportunities for publishers:

- *Offers low-cost infrastructure for smaller publishers.*
- *Overlays can be used to create new types of journal, such as data journals.*
- *Repository infrastructure can be used to host different media, code and documents for enhanced publications.*
- *Takes publishing into the heart of the research community.*
- *New services mean new business opportunities.*

Benefits for scholarly communication:

- *Increased transparency at every stage of the publication process.*
- *Linking repository infrastructure with publishing taps into pools of innovation on both sides.*
- *Offers the means for smaller disciplinary areas to reach a global audience.*
- *More opportunities for publishers and repositories means more services for scholars.*

Overlay Journals have been hailed as a "win-win-win-win" for repositories, publishers, authors and readers: How often do you see that?