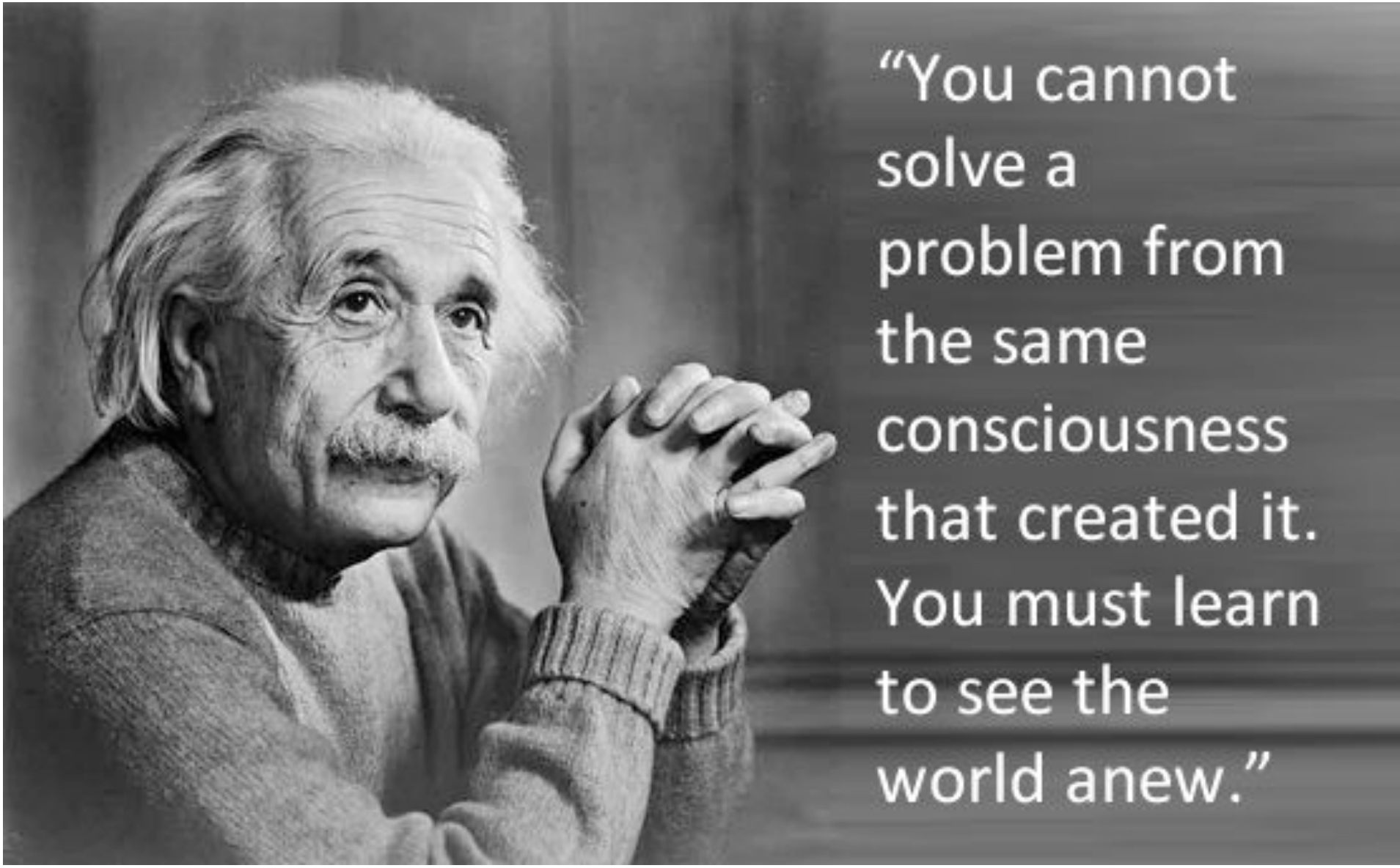
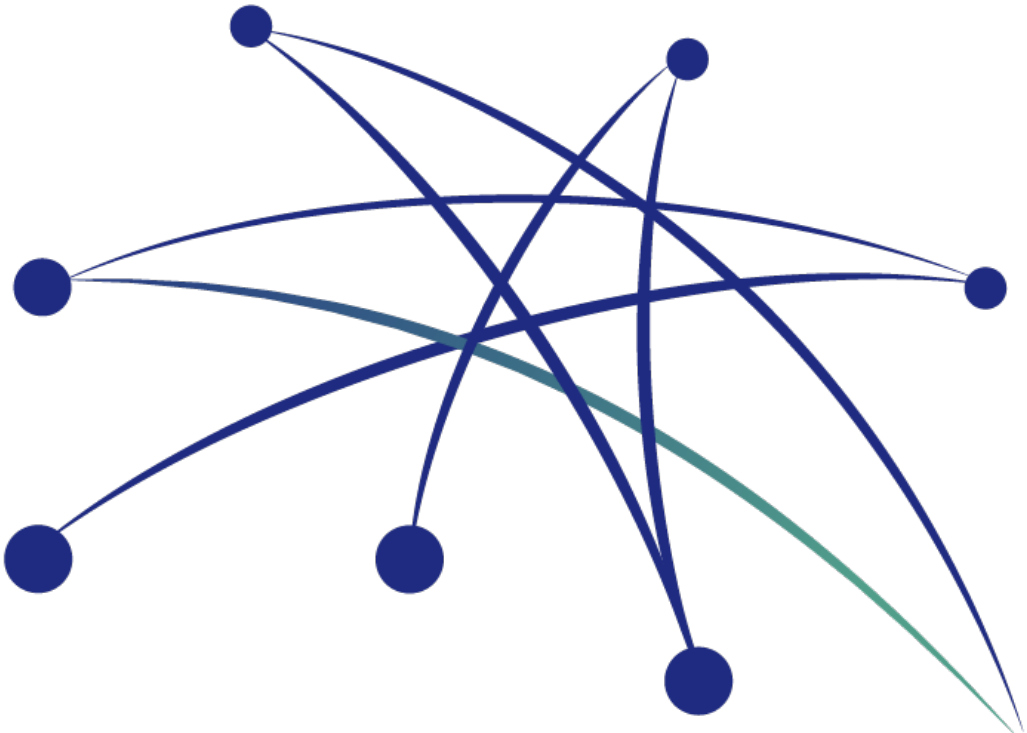

“You cannot solve a problem from the same consciousness that created it. You must learn to see the world anew.”



NEXT GENERATION REPOSITORIES

Scholarly communications

- Unsustainable costs of scholarly journals, and unsustainable APC costs
- Non inclusive system – pressure to do research and publish on “international” topics while neglecting local problems
- Narrow incentive measures based on journal impct metrics – need to incentivize and support sharing all research outputs
- Silos across format types even if they are related

Vision

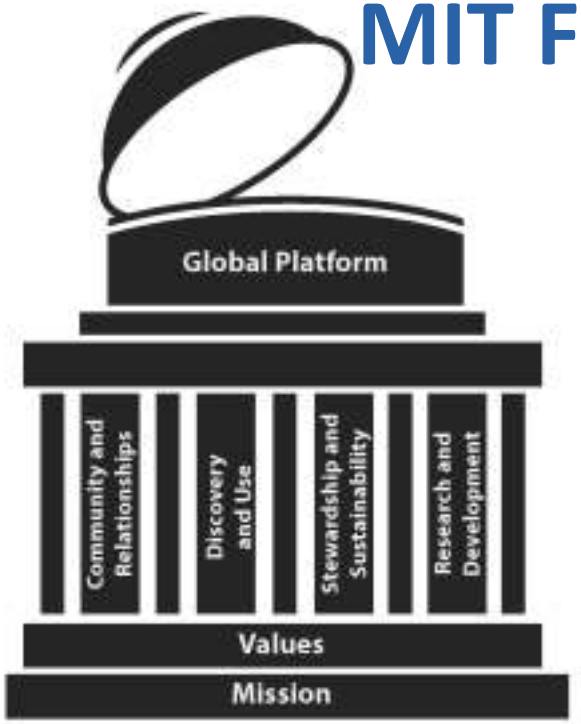
NEXT GENERATION REPOSITORIES

"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."

http://ngr.coar-repositories.org/

An idea that is not new, but who's time has come

Lorcan Dempsey (OCLC) 2012. 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.



MIT Future of Libraries Report (2017)

Libraries as an Open Global Platform

"... 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."

But… repository systems are using old technologies developed over 15 years ago that do not support the functionalities we need.

Next Generation Repositories Working Group (launched in April 2016)

Eloy Rodrigues, chair (COAR, Portugal)
Andrea Bollini (4Science, Italy)
Alberto Cabezas (LA Referencia, Chile)
Donatella Castelli (OpenAIRE/CNR, Italy)
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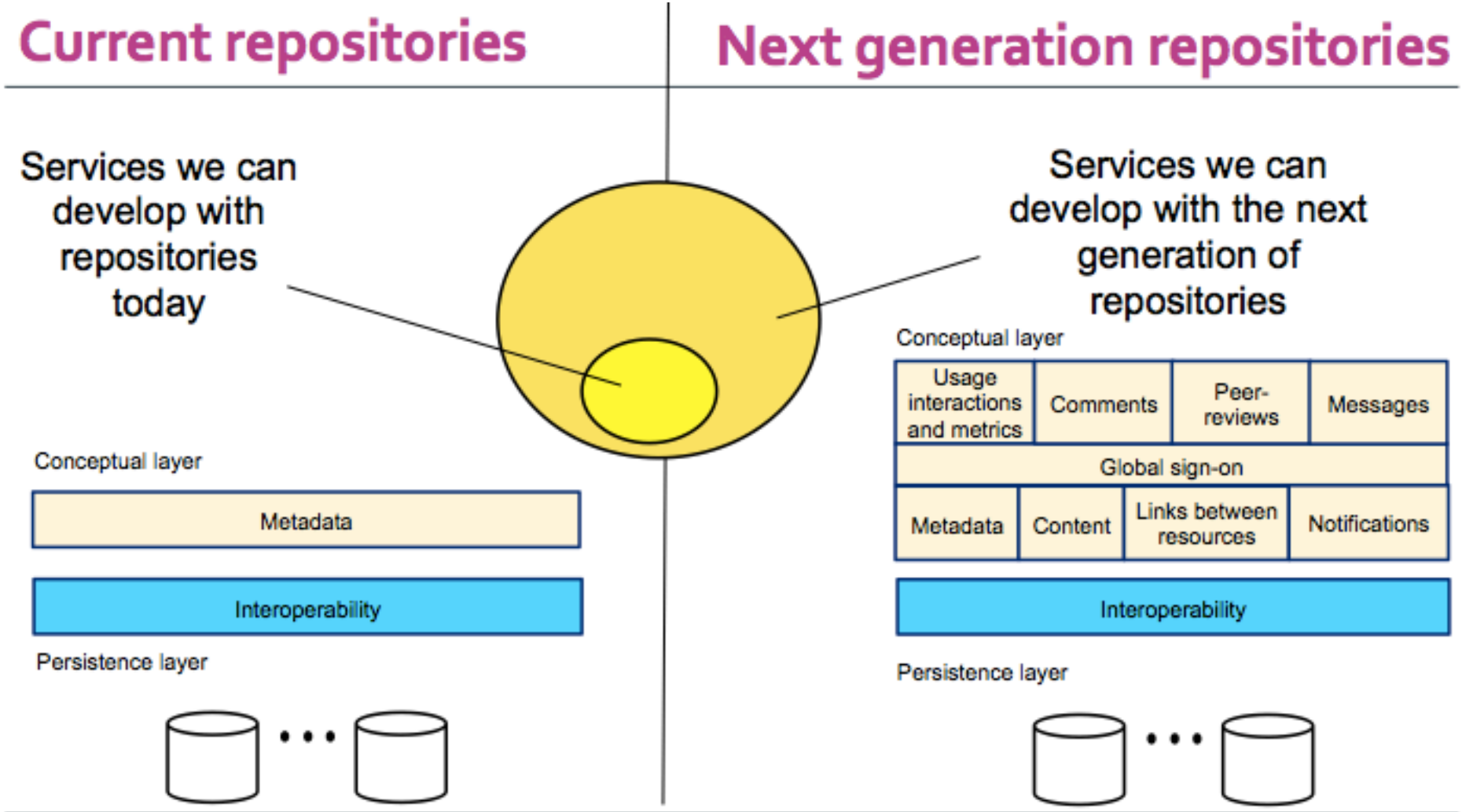
Paul Walk (EDINA, UK)
David Wilcox (Duraspace/Fedora, Canada)
Kazu Yamaji (National Institute of Informatics, Japan)

Next Generation Repositories – Guiding Principles

	**Distribution of control** Distributed control, or governance, of scholarly resources (pre-prints, post-prints, research data, supporting software, etc.) and scholarly infrastructures is an important principle which underpins this work. Distributed networks are more sustainable and at less risk to monopolisation or failure.
	**Inclusiveness and diversity** Different institutions and regions have unique and particular needs and contexts (e.g diverse language, policies and priorities). A distributed infrastructural network will aim to reflect and be responsive to the different needs and contexts of different regions, disciplines and countries.
	**Interoperability** Repositories will adopt common behaviours, functionalities and standards ensuring interoperability across institutions and enabling them to engage in a common way with external service providers
	**Public good** The technologies, architectures and protocols adopted will be openly available, using global standards when they are available and applicable.
	**Sustainability** Key institutions and research organizations in scholarly communication will contribute to the uptake and long-term sustainability of resources. Dedicated tasks will ensure community-led governance and sustainability structures.
	**User-centred design** End-users (e.g., researchers, citizens) and stakeholders will be at the centre of design considerations and actively involved through a design-thinking and co-creation approach.

NEXT GENERATION REPOSITORIES



By Petr Knoth, Open University, UK

Key functionalities of a global repository-based network

NEXT GENERATION REPOSITORIES

- Preserves and provides access to a wide variety of research outputs
- Enables better discovery including batch, navigation and notification
- Will support research assessment including open peer review and standard usage metrics
- Provides the foundation for a transparent social network including annotation, notification feeds, and recommender systems

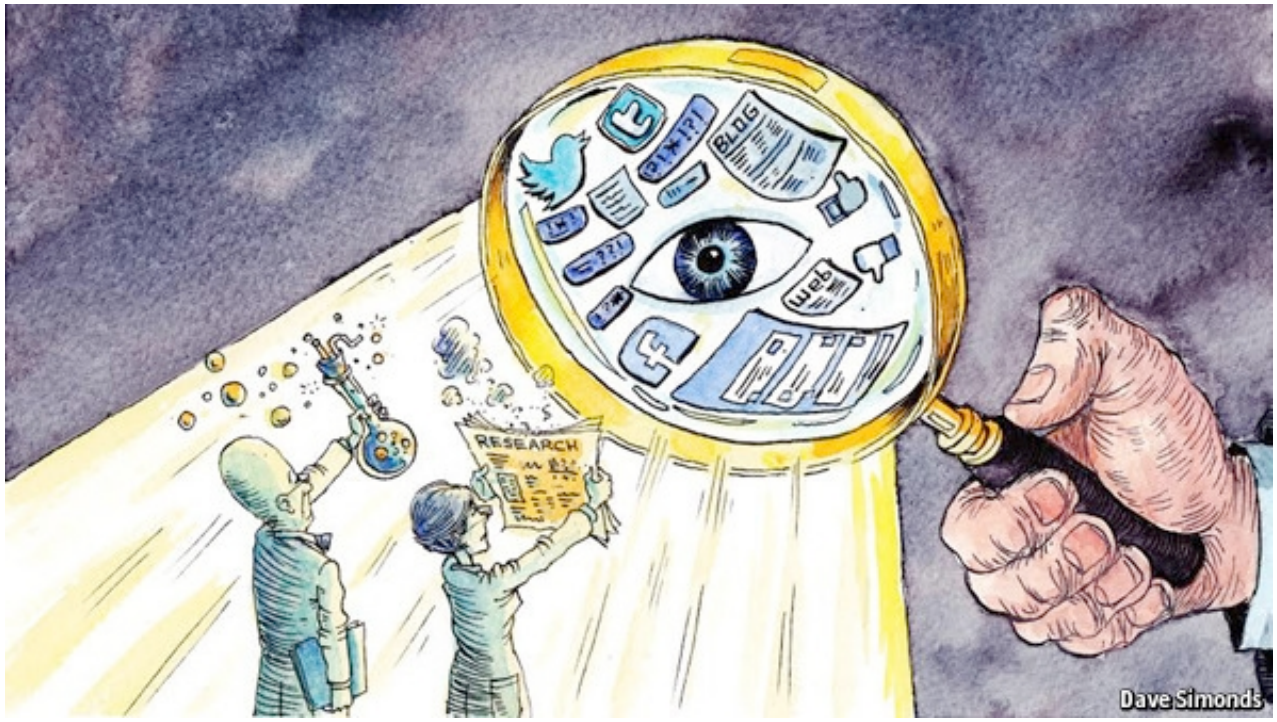
Use case #1

A transparent social network

As a user, I want to receive recommendations about content that is of potential interest to me and related to my work, so I increase my knowledge in my field.

Use case #2

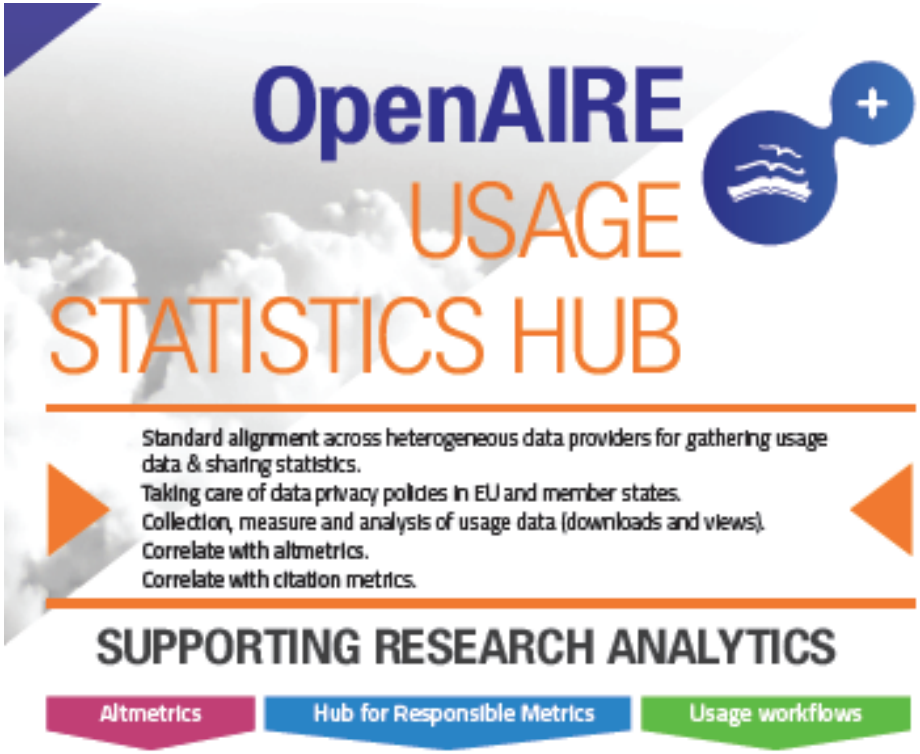
A trusted system for peer review and evaluation



As a user, I want to be able to comment or review the work of my colleagues and have those reviews (and reviewers) publicly available to all readers, so that the quality of these resources are assessed by others.

Use case #3

A network to measure impact of individual contributions



As a repository user, I want to have access to a global, cross-repository social feed so that I am informed about activities in which I have registered an active interest.

Use case #4

A network that preserves content over the long-term

As a scholar, I want my research outputs to be available over the long term and remain as a permanent part of the scholarly record.

Beyond the journal

All valuable research contributions should be available and recognized

The NGR network supports open science!

NEXT GENERATION REPOSITORIES

COAR publishes recommendations for next generation repositories

Browse Technologies

http://ngr.coar-repositories.org/

19 Technologies, Standards, and Protocols

1. Activity Streams 2.0
2. COUNTER
3. Creative Commons Licenses
4. ETag
5. HTTP Signatures
6. IPFS International Image Interoperability Framework
7. Linked Data Notifications
8. ORCID and other author IDs
9. OpenID Connect
10. **ResourceSync**
11. SUSHI
12. SWORD
13. **Signposting**
14. Sitemaps
15. Social Network Identities
16. Web Annotation Model and Protocol
17. WebID and WebID/TLS
18. WebSub
19. Webmention

COAR
Confederation of Open Access Repositories

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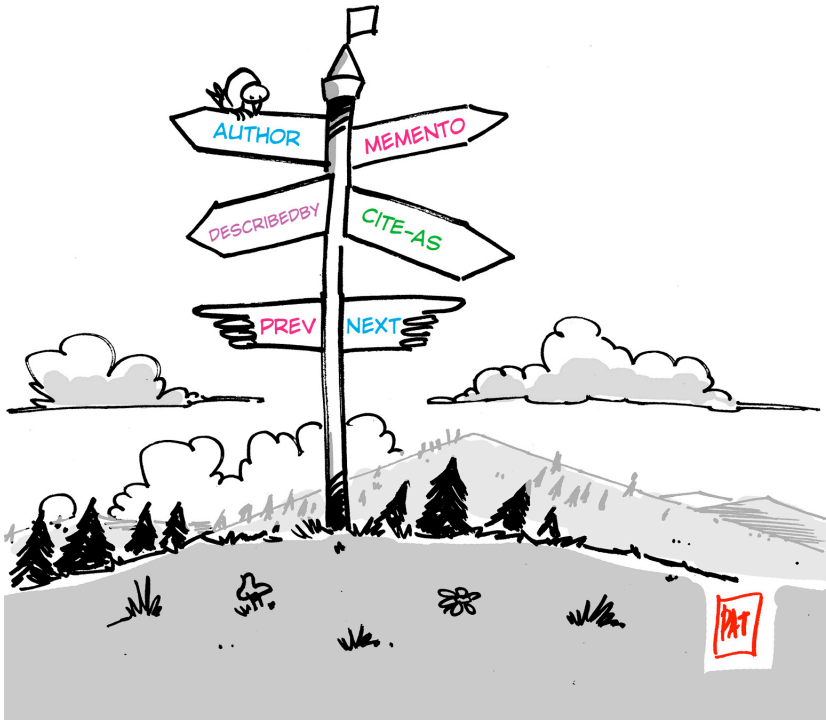
Signposting

Signposting is a standardized way of presenting information about a scholarly resource in a repository record, or other type of information provider, that allows machines to identify where the full text resource is located.



What is the problem: It is hard for web crawlers and other discovery service providers to identify the location of the full text content in a repository record. When visiting scholarly portals, readers can easily figure out landing pages, links to bibliographic records, authorship, etc. But, because portals use different conventions to convey such patterns, machines have a hard time finding their way around.

Resourcesync

ResourceSync is a mechanism for large-scale synchronisation of web resources. NGR promotes the use of ResourceSync as a modern way to allow aggregation services to 'harvest' metadata and content from repositories. Although ResourceSync can be used in a range of ways, NGR recommends that ResourceSync is used to expose changes in repository content, so that the repository's content (and/or metadata) may be reliably synchronised with other services (including aggregators).

Firstly, it supports the harvesting of metadata only. Most modern aggregation services need to access, harvest and aggregate a repository's content - as well as its metadata - but OAI-PMH does little to support this. Secondly, OAI-PMH does not enforce a reliable way of conveying information about items which may have been removed from a repository. This means that, over time, aggregations become 'out-of-sync' with the repositories they harvest. With OAI-PMH, eventually the aggregation service is forced to start afresh and re-harvest everything from a given repository.

Implementation

1. Working with major open source software programs to implement technologies
2. Developing value added services through pilot projects
3. Ongoing monitoring of new technologies, standards and protocols

Confederation of Open Access Repositories

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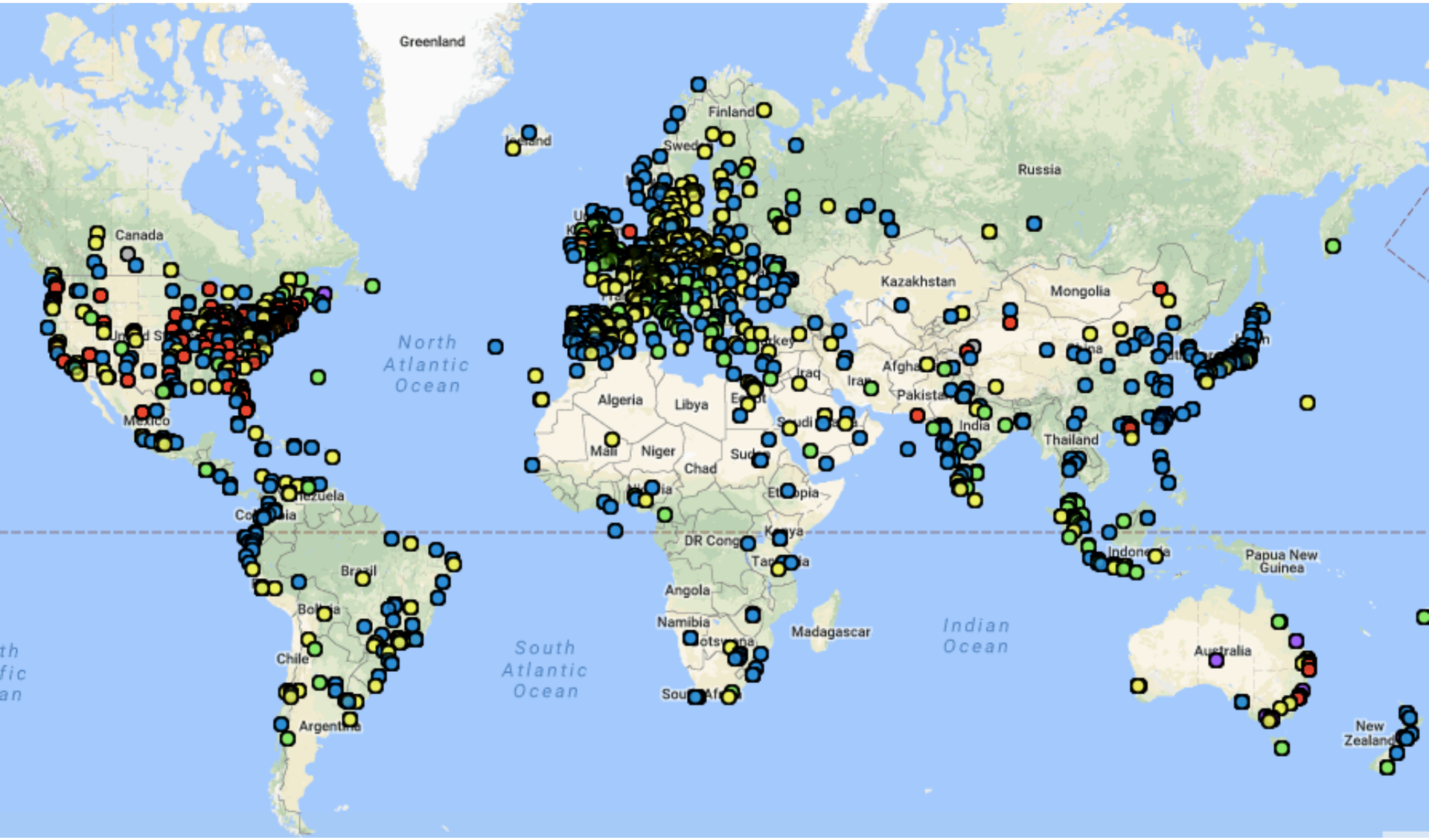
We must not have silos

We can’t build services on top of content if repositories do not expose content in a common way

Collaboration AT SCALE is necessary to change the system!



Ubuntu: building the global knowledge commons

For more informaiton, please contact Kathleen Shearer, Executive Director, COAR

kathleen.shearer@coar-repositories.org

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