CHALLENGES AND OPPORTUNITIES OF INTEROPERABILITY FOR OPEN ACCESS REPOSITORIES

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China Open Access Week
Agenda

- Introduction—Repositories, Interoperability, and e-infrastructures for science and research.
- Confederation of Open Access Repositories (COAR) and Interoperability
  - COAR Working Group on Interoperability
  - COAR Interoperability Briefing Paper
  - COAR Interoperability Roadmap
- Final Remarks
INTRODUCTION
Our repositories may be (or contain) treasures of our institutions...
But they should not be treasure islands...

Wrong Way

Repository Island
The value of repositories

- Each individual repository is very valuable for each institution or community;

- But each individual repository is of limited value for research...
The real value of repositories lies in the potential to interconnect them to create a network of repositories, a network that can provide unified access to research outputs and be (re-) used by machines and researchers. However, in order to achieve this potential, we need interoperability.

(The Case for Interoperability for Open Access Repositories - COAR Briefing Paper)
The value of repositories

- But to fulfill this potential to create a unified body of scholarly materials, we need a "technical glue" that makes this integration possible ...

Interoperability
Interoperability

- Interoperability is the ability for systems to communicate with each other and pass information, metadata, and digital objects between each other back and forth in a usable format.
Interoperability to...

- CONECT
  - Between different Repositories
  - Repositories with other information systems (CRIS, LMS, VRE, VLE, etc.)
  - And transfer metadata and/or digital objects

- CREATE NEW SERVICES AND TOOLS
  - “On top” of repositories, based on contents aggregated from repositories...
  - using today’s computational power to datamine and process them, and generate new information and knowledge
Research in the digital world is global, collaborative, networked, distributed... How can repositories allow researchers to use open publications and data on their work?

OA Repositories around the globe, need to operate similar policies, terms & conditions, data schemas etc. to build a (seamless) content resource based on a worldwide repository network
Riding the wave

How Europe can gain from the rising tide of scientific data
a vision for 2030

“Our vision is a scientific e-Infrastructure that supports seamless access, use, re-use and trust of data. In a sense, the physical and technical infrastructure becomes invisible and the data themselves become the infrastructure – a valuable asset, on which science, technology, the economy and society can advance.”

*High-Level Group on Scientific Data*

“Riding the Wave: how Europe can gain from the raising tide of scientific data”
The European Vision

1. European Level Open Access Knowledge Infrastructure

2. Link to a global Knowledge Infrastructure
COAR

INTEROPERABILITY
COAR and Interoperability

- Interoperability was always one of the strategic issues for COAR
- A Working Group on Interoperability was established
- COAR Strategic directions 2012-2015
  3. To define and promote interoperability, standards, and infrastructure policies
Charge of Working Group 2:

- Facilitate the discussion on interoperability among OA repositories and as part of a wider e-Infrastructure
Working Group 2: 2011-2012

Objective: To facilitate a discussion on interoperability among Open Access repositories.

- Output 1: Producing a briefing paper providing an overview of interoperability for OA repositories.
  - “The Case for Interoperability for Open Access Repositories,” available in July 2011
  - Spanish Translation, by COAR member, available January 2012
The Case for Interoperability for Open Access Repositories

The Case for Interoperability for Open Access Repositories

Technical Challenges:
- New content types
- Software and systems
- New service layers
- Usage Data
- Consistent identification and terminology
- Language Challenges

Administrative and Organizational Challenges:
- Global context
- Long-term sustainability of guidelines and standards
- Support for implementing guidelines
Output 2: Stimulate an open discussion among COAR members and the broader OA/repository community to gather input about current and anticipated challenges related to global interoperability for OA repositories.
Continued Work – 2012-2013

- Produce the COAR Roadmap for Open Access Repository Interoperability
  - Present an overview of the current and emerging services that interoperability initiatives make possible
  - Present interoperability standards/protocols in connection to these services
  - Provide guidance and recommendations on future directions and solutions for enhancing repository interoperability in the context of OA and e-infrastructure
The COAR Roadmap for Open Access Repository Interoperability

Intended Audience: Institutions, and repository managers, operating at different points in terms of infrastructure, resources, and institutional support

- For institutions new to OA and repositories: Roadmap will provide guidance in getting started – providing ideas on the types of services repositories can offer
  - Which interoperability standards and protocols are necessary to implement in order to provide those services

- For institutions and repository managers already involved in OA and repositories: ideas for additional functionality, services possible to provide
Outline of the Roadmap


- Part 2 – Future directions – First Quarter 2013
Outline of the State of Open Access Repository Interoperability

- **Section I – Introduction and Background**
  Information: general overview of the interoperability landscape, identifying main challenges, current state and emerging areas.

- **Section 2 – Description of current standards/guidelines/projects**
  a) **Description** – Information about specific interoperability guidelines and standards referenced in the roadmap. Each item summarized in a consistent way.
  b) **Applications** : concrete examples of services or applications that have been developed using the standards/guidelines/projects.
  c) **Additional resources** for further readings, particularly focusing on explanatory texts and other useful information.
Current State of Open Access Repository Interoperability

The report covers:

- 7 areas of focus for current interoperability initiatives
- 2 emerging areas
- Overviews of 19 key Open Access repository interoperability initiatives
Areas of Repository Interoperability

- Metadata Harvesting
- Managing Compound Objects
- Repository Networks
- Persistent Identifiers
- Usage Statistics
- Author Identification
- Automated Deposits
### Areas and Associated Initiatives

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**AuthorClaim**

**authorclaim.org**

*AuthorClaim aims to link scholars with records of the works they have produced.*

Category: Author identification  
Geographic Focus: Global  
Current status: currently maintained; building-up phase

Sponsoring Organization: The development of the software for the service was funded by an Open Society Institute grant to the ACIS project.

Examples of Implementations  
http://authors.repec.org/  
http://authorclaim.org  
http://citec.repec.org/  
(Citations in Economics): citation profile of authors registered in RePEc Author Service (RAS)
CRIS-OAR


*CRIS-OAR aims to increase the interoperability between CRIS and repositories through metadata exchange*

Area: Cross-System Content Transfer
Geographic Focus: Europe
Current status: project has been completed

Sponsoring Organization: Knowledge Exchange

Other Projects in this Area:
- OA-RJ
- SWORD
- UK RepositoryNet+
FINAL REMARKS
Challenges for repositories

- Fulfill their potential to support Open Access and be an essential part of the e-infrastructures for science and research.

In the present time, that means:

Maintain the focus on getting more Open Access content (journal articles, etc.) into repositories

Using all the opportunities to connect to, interoperate with, or embed in other systems (institutional or disciplinary) or components of e-infrastructures for research.
Challenges for repositories
谢谢

THANKS!

OPENACCESS.SDUM.UMINHO.PT/

WWW.COAR-REPOSITORIES.ORG/