Capturing research outputs at the University of Cambridge: experiences with DSpace

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Outline

- the Cambridge institutional context
- DSpace@Cambridge project
- SPECTRa project
- points to ponder
The Cambridge institutional context
University of Cambridge

- collegiate university, c.1209-
- 23 Faculties in 6 Schools
- >17,800 students (11,700 u/g, 6,100 p/g)
- >5,000 academic and academic-related staff
- 81 Nobel Prize laureates since 1904
- decentralised, democratic governance structure
- separate library service and computing service
- tripartite library system (>100 libraries)
  - University Library (legal deposit library)
  - faculty & departmental libraries
  - college libraries
The Library’s policy context

- digital preservation research and practice
  - CEDARS and CAMiLEON projects
- scholarly communication
  - SPARC Europe
  - advocacy for self-archiving of research papers
- library collections (born-digital, digitized)
- local archiving
  - e-theses
  - University Archives
- visibility and credibility among scientists
- legal deposit of UK digital publications
DSpace@Cambridge
DSpace@Cambridge
- project outline

- January 2003 to August 2006
- funded by Cambridge-MIT Institute
- collaboration between Cambridge (Library + Computing Service) and MIT Libraries
- project vision and goals
  - identify and respond to user requirements
  - establish institutional repository
  - develop DSpace software
  - support adoption and use of DSpace in the UK
  - create a sustainable business plan
Potential material

- scholarly papers (advocacy campaign)
- library collections (born-digital or digitized)
- learning materials (interactive, multimedia)
- research materials (texts, images, video, etc.)
- e-theses
- datasets
- administrative records
- e-journals & e-books
- websites
Internal market survey

- questionnaire (Web and paper) in 2004
- >1,800 academic research staff surveyed
- 250 (13%) replied
- 48% definitely/probably would use DSpace
- 17% definitely/probably would not use DSpace
- respondents asked to rank 11 suggested benefits...
Benefits of using institutional repository?

- respondents rated each of 11 benefits on a scale of 1-5
- the three top-ranked benefits were:

1. 48%: “DSpace will provide long-term storage of research material”
2. 34%: “DSpace will allow me to restrict access to items that I wish to archive…”
3. 32%: “DSpace will make it easy for other people to search for and locate my work”
Assumptions

- submitters provide their own Dublin Core metadata
- the University Library reserves right to validate, correct, or reject metadata
- copyright remains with the owner
- the repository is licensed to make copies for dissemination and preservation
- "open access" is the default status, but restricted /closed collections may be agreed
End-of-project metrics (1)

- 17 DSpace communities
- 35 collections containing:
  - peer-reviewed literature
  - reports
  - e-theses
  - images
  - digital video
  - data
- some closed access collections
  - commercially valuable material (TIFF files)
  - restrictions on Intellectual Property Rights
  - work in progress
End-of-project metrics (2)

- total number of items: 179,691
- total number of registered users: 190
- 27,000 visits per month
- greater visibility of linked research materials: Social Anthropology websites now ranked 5th in “Webstats4U” website list of the top 1,000 UK Higher Education sites
Main project results

- Business case approved by University
  - 5-year funding programme for DSpace@Cambridge service
  - 4 full-time posts (2 Library, 2 Computing Service)
- DSpace@Cambridge an integral part of the University’s official information strategy
- Significant input to DSpace Open Source code base
- Cambridge developer on DSpace Committer group
- Hosted first European DSpace conference in 2005
- Decision to focus next on work that embeds repository use in research practice, leading to...
- Further research projects
  - SPECTRa (deposit tools for chemistry research data)
  - Other partnerships with JISC-funded projects
  - ?SPECTRa-T (text- and data-mining from chemistry theses)
SPECTRa

(Submission, Preservation, & Exposure of Chemistry Teaching and Research data)
SPECTRa

- 18-month project partnership between
  Cambridge University Library (lead site)
  Cambridge University Chemistry Dept
  and
  Imperial College London - Chemistry Dept
  Imperial College London - Library

- in collaboration with ebank-UK

- funded by JISC (Joint Information Systems Committee) Digital Repositories Programme
The problem

- machine-understandable data is needed for:
  - eScience
  - Semantic Web
  - re-analysis through informatics

- Open Data is not the same as Open Access
  - OA licences often don't address reuse and redistribution of data
  - publication destroys information
  - Open Data can co-exist with non-OA publications
The problem (continued)

- publication of data requires extra work
- lack of infrastructure for handling Open Data
- many publishers are unconvinced about / antagonistic towards OA
- therefore many researchers are also unconvinced about / antagonistic towards OA
- lack of exemplars to illustrate benefits
- lack of practical tools to overcome obstacles
SPECTRa’s tasks

- survey of researchers’ requirements in crystallography, computational chemistry, and synthetic chemistry

- development of customised Open Source tools as part of researchers’ workflow to enable deposit of, and access to, Open Data using DSpace institutional repositories
Data embargo

- chemists often need to hide research data from competitive research groups or for commercial reasons
- publication of chemical structures must be embargoed until the chemist
  - publishes work involving those structures, or
  - moves on to a different line of research
- researchers are unlikely to deposit their data without adequate recognition of concerns
- need for an escrow process to manage release of Open Data
The SPECTRa workflow

- capture selected data from chemistry workflows in open format (JCAMP, MOL, CIF)
- add context-specific metadata
- add persistent identifiers (InCHI)
- deposit in closed “escrow” repository
- manage the release of data into open Institutional Repository by agreement
- data can then be searched and harvested
SPECTRa

(Submission, Preservation & Exposure of Chemistry Teaching & Research data)

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Points to ponder
Points to ponder...

- find out what your researchers really need
- every research community is different
- build solutions to the problems they identify
- be prepared to look beyond peer-reviewed papers
- consider both open- and closed-access collections
- consider federated repository structures
- demonstrate the added value a repository can provide in supporting their research

but

- what works for Cambridge may not work elsewhere...
Thank you for listening

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