The Digital Curation Centre

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Presentation overview

- Digital curation and its importance
- The Digital Curation Centre:
  - Structure
  - Overview of activities
- Some current issues:
  - Metadata
  - Institutional repositories and open access
  - Trust
What is digital curation?

- New(ish) term, from science data world (e.g. bioinformatics)
- Reflects those extra things that need to be done to facilitate access and reuse
- "... managing and promoting the use of data from its point of creation, to ensure it is fit for contemporary purpose, and available for discovery and reuse" - Philip Lord, et al. (2004)
- "Maintaining and adding value to a trusted body of information for current and future use" -- DCC presentation at CNI (2005)
What is digital preservation?

- Dealing with the potential technical problems that impede continued access to all types of digital resource
- No longer possible to place physical artefact on a shelf and ignore for 100+ years
- Sometimes seen as focused on the maintenance of specific object over time (e.g., a facet of curation)
- But older definitions emphasise that it is not just a technical problem:
  - "... The planning, resource allocation, and application of preservation methods and technologies to ensure that digital information of continuing value remains accessible and usable" - Margaret Hedstrom (1998)
Why is it a problem? (1)

- An increasing flood of 'born-digital' data
  - The World Wide Web
    - Comprises billions of pages + "deep Web"
    - Internet Archive = >1 petabyte, and growing @ 20 Tb. per month (http://www.archive.org/)
  - Data deluge in science and engineering
    - Petabytes generated by high throughput instruments, streamed from sensors and satellites, etc.
    - Data-driven science, e-science, cyberinfrastructure, ...
  - 5 exabytes of new information created in 2002:
Why is it a problem? (2)

- Need for (open) access to this data
  - Results in added scientific value
  - New analytic techniques
  - 2004 - OECD member states endorsed the principle that publicly funded research data should be openly available to the maximum extent possible

- Interoperability
  - Technical and cultural
Digital Curation Centre (1)

- Funded from 2004 for three years by the JISC and the e-Science Core Programme
- Main aim: "continuing improvement in the quality of data curation and digital preservation"
- Will focus on all aspects of the research process, e.g. from data creation to publication and beyond, also on the work of repositories and data archives
- Not itself a digital repository, but offering outreach and practical services to assist those who curate data …
Some organisational basics:

- **Director**: Chris Rusbridge (University of Edinburgh)
- **Research** team led by Professor Peter Buneman (School of Informatics, University of Edinburgh)
- **Development** team led by Dr David Giaretta (Astronomical Software and Services, CCLRC)
- **Advisory services** team led by Professor Seamus Ross (HATII, University of Glasgow)
- **Outreach** team led by Dr Liz Lyon (UKOLN, University of Bath)
DCC requirements analysis

- Commissioned from Leona Carpenter
- Desk research, focus groups and interviews
- Taxonomy of stakeholders (the creators, curators and users of digital information)
DCC research

- Curating databases
  - Publishing and integrating data
  - Database provenance and annotation
  - Preserving past states of volatile databases
  - Citing data
- Automated extraction of metadata
- Cost-benefit analysis of curation
- Networks of repositories
- Rights and responsibilities
DCC development (1)

- Work based on concepts outlined by the Reference Model for an Open Archival Information System (OAIS)
- Current focus on Representation Information
  - The information required (metadata, documentation, community knowledge) to render objects
  - Trusted repositories of Representation Information (link with file format registries like GDFR) - pilot
  - Persistent identifiers
DCC development (2)

OAIS Functional Entities (Figure 4-1)
# DCC services

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<tr>
<th>Advisory services</th>
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<td>• Queries to <a href="mailto:HELPDESK@dcc.ac.uk">HELPDESK@dcc.ac.uk</a></td>
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<td>• Site visits</td>
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<td>• Briefing papers (e.g. FOI by Mags McGinley)</td>
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<td>• Curation manual (invited authors, peer-reviewed)</td>
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<td>• For example, Workshop on Institutional Repositories, Cambridge, 6 July 2005</td>
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DCC outreach

- Examples:
  - Web site: http://www.dcc.ac.uk/
  - 1st DCC Conference, Bath, 29-30 September 2005
  - Network of Associates
Some issues (1)

- Metadata:
  - Vitally important for recording the characteristics and behaviour of objects, agents and processes
    - Descriptive metadata
    - Technical metadata (hardware and software environments, information about formats, etc.)
    - Structural metadata
    - Administrative metadata
  - Wide range of initiatives in this area (PREMIS DD)
  - DCC curation manual chapter, scientific metadata model (CCLRC data portal), ...
Some issues (2)

- Institutional repositories:
  - The impact of new RCUK policies
  - Research outputs, including data (?)
  - Role in preservation
    - e.g., National Institutes of Health policy requesting grantees to submit papers to PubMed Central
  - Disaggregated model
    - Not all repositories will have preservation responsibilities
    - Possible need for mechanisms for transferring content to third parties, e.g. national libraries
Some issues (3)

- Trusted repositories:
  - Attributes and responsibilities of 'trusted repositories' defined by RLG and OCLC working group (2002)
    - Builds on 1996 Task Force report and OAIS model
    - Attributes include the viability and financial sustainability of the organisation, and the need for accountability
    - Question whether these (and other criteria) could be used as a basis for certification is being explored by the Task Force on Digital Repository Certification, supported by RLG and the National Archives and Records Administration (NARA)
Acknowledgements

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