An Introduction to RDM Services

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Digital Curation Centre

The Hong Kong University of Science and Technology, 19th March 2019
Annual RDM survey issued by DCC

- 60 UK Higher Education Institutions responded to DCC survey 2015, of 132 invited
- Research-active institutions well represented

Briefing and links to data: [http://www.dcc.ac.uk/survey2015](http://www.dcc.ac.uk/survey2015)
Who has what in place?

- **Policy and strategy**: 87%
- **Business planning**: 13%
- **Data Mgmt Planning**: 50%
- **Managing active data**: 40%
- **Governing access & reuse**: 22%
- **Data cataloguing**: 38%
- **Data preservation**: 18%
- **Skills training & consultancy**: 63%

*Indicating ‘rolling out’ or ‘embedding’*

*Referred to ‘access & storage systems’ in survey*
About University of Edinburgh

• Founded 1583

• 39,576 students

• 14,346 postgraduate students

• 6,816 academic staff

• Research income: £253.9 million (2015-16)

• Mission: the creation, dissemination and curation of knowledge

• 20 schools in 3 colleges:
  • Arts, Humanities & Social Sciences
  • Medicine & Veterinary Medicine
  • Science & Engineering

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Adapted from R. Rice

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About Information Services

- Applications
- IT Infrastructure
- Learning, Teaching & Web
- Library & University Collections
- User Services
- Information Security
- EDINA
- Digital Curation Centre

Argyle House © CoStar

Adapted from R. Rice
Where to start?

Policy sets service scope and can unlock funds

- Important elements
  - Clearly stated coverage and requirements
  - Well defined roles and responsibilities
  - Research data definition

- Institutional policy should reflect the external context
External context and drivers

Data are a public good and should be openly available.

FAIR data principles

G8 Science Ministers Statement

Open Research Data pilot

Panton Principles
Principles for Open Data in Science

“For science to effectively function, and for society to reap the full benefits from scientific endeavours, it is crucial that science data be made open”

dcc.ac.uk
Data policy trends

• Proliferation of policies
  • Make the landscape easier for researchers to navigate
  • More harmonisation needed
  • Clarifications needed when requirements conflict

• Growth in open data policies
  • Should push open science agenda but not at expense of RDM

• Research data policies often ‘aspirational’ and high-level
  • Need for more group guidelines and practical procedures
  • More researcher input when developing services & infrastructure
Early UK research data policies

“Statement of commitment” → Infrastructure → policy

“10 commandments” mutual promises aspirational

Baseline of RCUK Code + procedures & support

Based on Edin. with a few additions
## UK policy examples

<table>
<thead>
<tr>
<th>HE Institution in chronological order</th>
<th>Date the policy was adopted</th>
<th>Definitions</th>
<th>Support</th>
<th>DMP</th>
<th>Scope</th>
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</thead>
<tbody>
<tr>
<td>University of Birmingham</td>
<td>2009 October</td>
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<td>University of Edinburgh</td>
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<td>University of Hertfordshire</td>
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<td>University of Warwick</td>
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<td>Glyndwr University</td>
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<td>University of Southampton</td>
<td>2012 February</td>
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<td>University of East London</td>
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<td>Brunel University</td>
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<td>University of Essex</td>
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<td>Queen Mary, University of London</td>
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<td>University of Sheffield</td>
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<td>University of Leeds</td>
<td>2012 July</td>
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<td>University of Oxford</td>
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<td>University of the Arts London</td>
<td>2012 October</td>
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<td>Goldsmiths University</td>
<td>2013 January</td>
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<td>The University of Lancaster</td>
<td>2013 February</td>
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<tr>
<td>University for the Creative Arts</td>
<td>2013 February</td>
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Analysis of what policies cover

Laurence Horton did an analysis of the 31 policies listed in 2014

• 74% specify a requirement for data to be open where possible
• 74% of unis require a DMP and a further 19% point to funder requirements. Only 2 don’t mention DMPs at all.
• 55% specify a length of time for which data should be retained / preserved
• 45% give a full definition of research data
• Only 23% contain a statement on institutional ownership of research data
• Again, only 23% (7 out of 31) mention RDM costs


Available at: www.dcc.ac.uk/resources/policy-and-legal/institutional-data-policies
Guides on policy development

Guidance to help institutions get started:

• Five steps to developing a research data policy
  • [Website](http://www.dcc.ac.uk/resources/policy-and-legal/five-steps-developing-research-data-policy)

• LEARN project guidelines for developing an RDM policy
  • [Website](http://blogs.ucl.ac.uk/learn-project/files/2016/01/red_LEARN_Elements_of_the_Content_of_a_RDM_Policy.pdf)

• ANDS Data Management Policy outline
  • [Website](http://www.ands.org.au/datamanagement/policy.html)
RDM Roadmap (living document)

Academic-led steering group governs the service

1st, August 2012 – May 2015: Rollout and consolidation

2nd, September 2015 – July 2016: Transition, programme to service

3rd, August 2017 – July 2020: User journey, filling gaps
32 prioritised objectives with actions and deliverables

Frank da Silva on Flickr  CC BY-NC-ND 2.0

Adapted from R. Rice

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RDM Roadmap

• July 2010 – May 2011

• In 2010 a research data storage paper was submitted to the University’s IT Committee with six key recommendations for the University’s data infrastructure:

1. Archiving of research data
2. Accessibility of research data to all virtual collaborators
3. Globally-accessible, cross-platform file store
4. Back up and synchronization of data on mobile devices
5. Establishing networks of knowledge
6. Federated structure for local data storage

• Followed by the Research Data Management Policy in May 2011 written by the IS RDM Action Group and approved by the RDM Steering Committee.
RDM Roadmap V2.0

• August 2012 – July 2016

• Business Case was submitted to the University IT Committee in June 2012

• The Roadmap set out a high level plan for delivery of services across four strategic areas (image on the right):

To provide clear information to all University staff on the progress that has been made in delivering the RDM programme.
RDM Roadmap V3.2

- August 2017 – July 2020

New strategic area: **unification of the service**

- Researchers expect a seamless service experience.
- Millennials’ expect the same quality of services like from Apple or Google
- The organisations are moving away from focusing on cost reduction and concentrate on delivering customer-centric experiences and innovations
- University libraries: from collection holders to service providers and towards the “open science turn”.
- **IF THE SERVICE ISN’T RELEVANT FOR THE PEOPLE USING THEM, THEY’LL GO ELSEWHERE!**
University’s RDM Policy (May, 2011)

• Commitment to research integrity, DMPs, open data
• Articulates clear responsibilities of the researcher and of the institution

Policy by Nick Youngson CC BY-SA 3.0 Alpha Stock

Images

Adapted from R. Rice
This policy for managing research data was approved by the University Court on 16 May, 2011.

The University adopts the following policy on Research Data Management. It is acknowledged that this is an aspirational policy, and that implementation will take some years.

1. Research data will be managed to the highest standards throughout the research data lifecycle as part of the University’s commitment to research excellence.
2. Responsibility for research data management through a sound research data management plan during any research project or programme lies primarily with Principal Investigators (Pis).
3. All new research proposals [from date of adoption] must include research data management plans or protocols that explicitly address data capture, management, integrity, confidentiality, retention, sharing and publication.
4. The University will provide training, support, advice and where appropriate guidelines and templates for the research data management and research data management plans.
5. The University will provide mechanisms and services for storage, backup, registration, deposit and retention of research data assets in support of current and future access, during and after completion of research projects.
6. Any data which is retained elsewhere, for example in an international data service or domain repository should be registered with the University.
7. Research data management plans must ensure that research data are available for access and re-use where appropriate and under appropriate safeguards.
8. The legitimate interests of the subjects of research data must be protected.
9. Research data of future historical interest, and all research data that represent records of the University, including data that substantiate research findings, will be offered and assessed for deposit and retention in an appropriate national or international data service or domain repository, or a University repository.
10. Exclusive rights to reuse or publish research data should not be handed over to commercial publishers or agents without retaining the rights to make the data openly available for re-use, unless this is a condition of funding.

Related Information

- University Research Data Service
- University Research Data Roadmap
Building your approach
Establish a working group

• Good mix of representatives from operational units

• Senior management leadership

http://www.executive-coaching-services.co.uk/executive-coaching/leaders.jpg
Assess institutional context

- Number of active researchers
- Aspirations and strategic objectives

Be aware of existing infrastructure

<table>
<thead>
<tr>
<th>Research Organisation Description</th>
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<tbody>
<tr>
<td><strong>RDM profile component</strong></td>
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<tr>
<td>Means of raising staff awareness of funders’ research data requirements</td>
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<tr>
<td>Research data policy</td>
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<tr>
<td>Strategy or implementation plan for research data services</td>
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<tr>
<td>RDM advice and support services</td>
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<tr>
<td>Active data storage</td>
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<tr>
<td>Data register or catalogue</td>
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<tr>
<td>Persistent identification for datasets</td>
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<tr>
<td>Data access procedures</td>
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<tr>
<td>Secure data access</td>
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<tr>
<td>Institutional publications repository (if it includes research data or metadata)</td>
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<tr>
<td>Data repository for longer term access and preservation</td>
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</table>

http://www.dcc.ac.uk/projects/opd-for-rdm
Capability models

- ANDS Capability Maturity Model www.ands.org.au/guides/capability-maturity


- Data Curation Profiles http://datacurationprofiles.org
Common survey findings

• Sharing driven by benefits not policies  
  (e.g. reuse potential, citation, public good etc)

• Informal, peer-to-peer sharing methods most common  
  - email, dropbox, transfer on USB etc

• Lots of data held on hard drives and cloud services rather than managed university filestores

• Lack of clarity on data ownership or processes when staff leave

• There is a demand for and intention to use uni services, but low uptake in many cases so far
Service development strategy

1. Consider each service element individually

2. Assess your current capability

3. Define your target capability

4. Identify barriers and opportunities
Implementing research data policy

- Edinburgh RDM roadmap example shows how to break work down into sections and allocate out tasks across divisions

www.ed.ac.uk/information-services/about/strategy-planning/rdm-roadmap
Policy to service (DMPs)

Data Management Planning at Edinburgh

“All new research proposals must include research data management plans or protocols that explicitly address data capture, management, integrity, confidentiality, retention, sharing and publication.”

• Develop a template in DMPonline based on this proposed structure / coverage

• Training module available on MANTRA

• Sample plans and advice available from RDM team

• Consideration of need for Software Management Plans
Policy to service (data storage)

Storage services at Edinburgh

“The University will provide mechanisms and services for storage, backup, registration, deposit and retention of research data assets in support of current and future access, during and after completion of research projects.”

• Provision of baseline 0.5Tb/user via DataStore
• Support for backup and synchronisation on mobile devices (DataSync)
• Enhancement of existing data repository (DataShare) and new preservation service (DataVault)
• Development of a Data Asset Register
How to deliver and sustain services?

• DIY or outsource?
  - Prevailing institutional culture
  - Access to developers / technical expertise
  - Possibility for brokered deals, procurement support, regional collaborations...
  - Choice that keeps options open e.g. OS + delivery options

• Cost models
  - Part of core institutional provision (overheads)
  - Direct costs for research facilities / services
  - Charges on research grants e.g. deposit fees
  - Grant funding for certain services

https://unlockingresearch.blog.lib.cam.ac.uk/?p=631
Stakeholder mappings

Stakeholder Analysis

High
- IS Directors
- IT Infrastructure
- CIO
- DRS Outreach
- Steering Group
- Head of College IT
- Research Facilitators
- Research Ambassadors
- Research Data Service
- SSI
- EPCC
- Edina
- Research Computing
- Library
- Research Office
- Research Software Engineers
- Computing Officers
- Digital Skills and Training

Engage Closely

Low
- Institute for Academic Development
- Students and Researchers
- IT Consultancy
- Communications and Marketing

Monitor (Minimum Effort)
- Edinburgh Innovations

Keep Informed
- Low Interest
- High Interest

Keep Satisfied
Digital Research Services (DRS)

- DataStore
- EDDIE
- Archer
- Eleanor
- Data Safe Haven
- DataShare
- DataSync
- SubVersion /Gitlab
- Digimap
- Digital Imaging

... and many others!
Digital Research Services is a programme to underpin and transform research with an integrated set of comprehensive Digital Research Services in partnership with DCC, Edina and Data Library, EPCC, IS Research Services, IS Research Data Service and Software Sustainability Institute (SSI).

Towards the greater discoverability of digital research services at the University of Edinburgh
Digital Research Services

1. Plan and Design
2. Collect and Capture
3. Organise and Store
4. Interpret and Analyse
5. Manage and Preserve
6. Publish and Share
7. Discover and Re-use
Digital Research Services

Data Safe Haven

1. Plan and Design
2. Collect and Capture
3. Organise and Store
4. Interpret and Analyse
5. Manage and Preserve
6. Publish and Share
7. Discover and Re-use
Digital Research Services

DataStore

dcc.ac.uk
Digital Research Services

DataSync
Digital Research Services

DataShare

1. Plan and Design
2. Collect and Capture
3. Organise and Store
4. Interpret and Analyse
5. Manage and Preserve
6. Publish and Share
7. Discover and Re-use
Digital Research Services

DataVault
Research Facilitators

Adapted from L. Otty
Thank you!

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In collaboration with: