

6th International Digital Curation Conference

December 2010

Data Management for All - The Institutional Data Management Blueprint project

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August 2010

Abstract

In the 10th anniversary year of the Open Archiving Initiative it is necessary to elevate research data to be a first-class citizen in the world of open scholarly communication. Such a profound goal requires far more than technical capability, but encompasses significant change for all stakeholders. Data curation and data management is often seen as an additional task for researchers. In this paper we describe how we are attempting to make it a seamless part of a researchers' daily workflow across a wide range of disciplines as a cornerstone of research practice. This paper describes the Institutional Data Management Blueprint (IDMB) project, which aims to create a practical and attainable institutional framework for managing research data throughout its lifecycle that facilitates ambitious national and international e-research practice. The objective is to produce a framework for managing research data across the whole lifecycle that encompasses a whole institution (exemplified by the University of Southampton) and based on an analysis of current data management requirements for a representative group of disciplines with a range of different data

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Introduction

There has been a great deal of work contributed to defining and scoping aspects of the research data lifecycle, a number of which have sought to engage directly with researchers, which is recognised as increasingly important. Defining the responsibilities for managing data from inception to preservation is now clearly recognised as a complex process shared between individual researchers and research groups, institutions, funders and national agencies. This is driven by many agendas, including groups of users, different funding agencies and programmes, politics, and technology trendsetters. A constant factor is the institution - a centre for cohesion, curation and cooperation - which is responsible for its own research data at some, or maybe all, of its lifetime, within a fragmented and volatile world. In order to acknowledge and manage these responsibilities, institutions require an overall framework within which to plan and develop their data management strategy. Many of the landscape studies so far have been highly detailed analytical descriptors of theoretical models, with some testing of assumptions, which institutions can find difficult to implement, and which can be too complex to win engagement from researchers. The management of data requires a multifunctional team approach which can bring together the knowledge and expertise of both researchers and professionals within an institutional policy and technical framework.

This paper describes the Institutional Data Management Blueprint (IDMB) project, which aims to create a practical and attainable institutional framework for managing research data that facilitates ambitious national and international e-research practice.

Aims and Objectives

The objective is to produce a framework for managing research data across the whole lifecycle that encompasses a whole institution (exemplified by the University of Southampton) and based on an analysis of current data management requirements for a representative group of disciplines with a range of different data. Building on the developed policy and service-oriented computing framework, the project has scoped and is evaluating a pilot implementation plan for an institution-wide data model, which can be integrated into existing research workflows and extend the potential of existing data storage systems, including those linked to discipline and national shared service initiatives. The project builds upon a decade of previous open access repository initiatives at Southampton to create a coherent set of next actions for an institutional, cross-discipline 10-year roadmap, which will be flexible in accommodating future moves to shared services, and provide a seamless transition of data management to knowledge transfer, from the individual to the community and from the desktop to institutional, national and international repositories. The outcomes from this project, which draws together technical, organisational and professional expertise from across the institution, will be widely disseminated within the sector as a form of HEI Data Management “Business Plan How-To”.

The outcomes from the project include the following:

- 1 Pathfinder for institutional data management strategy for the next decade;
- 2 Data management institutional blueprint based on an analysis of data management requirements and current best practice;
- 3 Service-oriented, extensible enterprise architecture model for data management;
- 4 10-year business model roadmap;
- 5 Best practice gap analysis report;
- 6 Pilot implementation for infrastructure, human and technological;
- 7 Workshops, training, website and reports for dissemination of best practice.

The realisable benefits to the institution and the wider community are the following:

- 1 Coherent data management strategy for a single institution;
- 2 Change management strategy for open access of data;
- 3 Development of cross-professional skills base for managing research data, including graduate student training;
- 4 Preservation and curation of research data at an institutional level;
- 5 Advocacy and best practice guidance for research workflows and data across disciplines;
- 6 Cost-benefit analysis of implementing the framework;
- 7 Detailed business model blueprint for others, to accelerate early adoption.

Summary

This paper describes the project outputs, including reporting of extensive interviews, surveys, and reviews of data governance, policy, researcher current practice, best practice, cross-disciplinary metadata framework, and pilot data management and curation solutions for archaeologists and nano-materials.

The IDMB project is funded by JISC under its Research Data Management programme.