Research Data Infrastructure Approaches

Ann Borda[1], Lyle Winton[2]

[1]Victorian eResearch Strategic Initiative, Melbourne, Australia, ann.borda@versi.edu.au
[2]Victoria University, Melbourne, Australia, Lyle.Winton@vu.edu.au

EXTENDED ABSTRACT

The development and implementation of research infrastructures have, to some extent, been shaped by the following forces:

- the open access movement which over the last decade has advocated for the open publishing of academic material;
- increasing reuse, recontextualising and construction of new relationships between researchers and existing data;
- the increase in collective capacity required for answering bigger questions, the drive for collaboration;
- public funding obligations for openness, accountability and data retention.

Accurately documenting the practice of research, and therefore the context of research data (often referred to as metadata), serves several aspirational goals: policy compliance, professional research conduct and record keeping, a knowledge base facilitating collaboration, and easy discovery of appropriate data for reuse in the future. So an immediate goal for research projects is to record the research process, deliberation and decisions, as efficiently as possible, with minimal effort and cost. The modern infrastructure and tools of researchers and collaboration, both digital and physical, should support this goal.

Increasingly, research institutions are providing enterprise-grade research support systems that facilitate researchers in managing and collaborating on projects and communities. These online working environments are occasionally called virtual research environments (VREs) or collaboration environments, and are flexible enough to support a range of activities. As a broad definition, VREs are platforms for enabling collaborative research activities beyond geographical barriers which are enhanced through the systematic use of web applications, online tools, systems and processes interoperating within and without institutional boundaries [1]. Such environments can organically grow with knowledge bases, documentation of research, and can be themselves considered repositories of research records and data.

Research infrastructure providers must also play a role in facilitating long-term data reuse. Infrastructure providers have often a role as close collaborators on research projects and provide expertise to support service use, custom service development, research design and analysis. However, most service providers place the burden of retention on their end users, the researchers, as long-term retention is not possible with fixed funding periods and operational costs. Relying on the storage capability of longer-lived research institutions and discipline repositories is considered a sensible operational strategy. However, as funded service providers there is an expectation and responsibility to support the needs of researchers in providing systems that facilitate project management, records keeping, data archiving and the transferring of data and information back to institutional repositories, institutional VREs or discipline repositories. To date no documented frameworks are in extensive use nor have any been considered as supporting records for research activities. Any such framework must be a cross-disciplinary and iterative activity in the realization of a common purposeful goal of effective outcomes for the community, for wider uptake, for minimizing resource costs, and for possible re-use.

The presentation will focus on an overview of VREs from numerous projects (the experience of VeRSI), the necessary people layer above, implementing within an institution, and the potential role of infrastructure providers.

REFERENCES

1. Carusi, A and Torsten, R. *Virtual Research Environment Collaborative Landscape Study*. Joint Information Systems Committee (JISC). January 2010.

ABOUT THE AUTHORS

BIO – DR ANN BORDA, EXECUTIVE DIRECTOR, VICTORIAN ERESEARCH STRATEGIC INITIATIVE

Dr. Ann Borda has held strategic and operational roles in academic and research organizations for over 10 years. Ann is currently Executive Director of the Victorian eResearch Strategic Initiative (VeRSI – www.versi.edu.au) which is a Victorian State funded Program to provide a coordinated approach to accelerating the uptake of eResearch across the Victorian research community. Previously, Ann held the position of eResearch Senior Programme Manager with the Joint Information Systems Committee (JISC – www.jisc.ac.uk) based at King's College, London, at which time she was responsible for the quality delivery of multi-million government-funded projects in building a UK wide e-Infrastructure to support research, and in facilitating broader community take-up of e-Science tools, grid services and resources. Concurrently, she was a Research Fellow at the Institute for Computing Research, London South Bank University, where she investigated HCI and collaborative technologies among other topics. In December 2009, Ann was appointed

Associate Professor & Honorary Principal Fellow in Computer Science & Software Engineering (CSSE) at the University of Melbourne.

BIO – DR LYLE WINTON, ASSOCIATE DIRECTOR ERESEARCH, VICTORIA UNIVERSITY

Lyle is the Associate Director for eResearch at Victoria University working with the Office for Research, IT Services and Library to develop e-research capability across VU. Lyle was formerly an analyst with the Victorian eResearch Strategic Initiative (VeRSI http://www.versi.edu.au/), a senior research support officer with the eScholarship Research Centre (http://www.esrc.unimelb.edu.au/) supporting the research community and eResearch initiatives at the University of Melbourne, and also a consultant to the DEEWR/JISC led international e-Framework for Education and Research (http://www.e-framework.org/). His research background is in experimental high energy physics and distributed computing, involving large-scale international collaborations. Lyle's professional background is in the IT areas of infrastructure development, software design, development and project management.