Research repository models: can one size fit all?

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When carrying out a research project, the focus for researchers is capturing data and investigating how the data can be used in their project. Data storage and metadata creation (to describe the data) are not considered a high priority. Data is often siloed to different devices and locations - frequently only known by the researcher, raising concerns around data integrity, safety and confidentiality. It is imperative that repositories are developed to provide researchers with the facilities to promote good data management practices - centralising storage allowing discovery, accessibility, collaboration and above all security.

Research repositories developed by UniSA Library

UniSA Library developed an Archival Management System (AMS) for the Bob Hawke Prime Ministerial Library in 2009. This system featured a web interface to allow users to capture metadata and also allow the public to search and view metadata and digitised items included in the records. Archival standards were investigated and utilised in this system, however they were highly customised and chosen based on the needs of the archive.

![Figure 1. Bob Hawke Prime Ministerial Library Archival Database](image1)

In 2010, UniSA Library was asked to collaborate with the University’s Architecture Museum to develop a repository to store metadata on their archival collections which are heavily used by researchers both internal and external from the University. Funding for this project was provided by ANDS (Australian National Data Service). Inspired by the 2009 system, the Architecture Museum’s system (Metatecture) shared many of the basic archival principles, however the standards applied were far more complex and included a new XML schema – RIF-CS (Registry Interchange Format – Collections and Services). The focus of the database model changed to Collections, Parties and Activities of the Architecture Museum, rather than tailoring to aspects of the collections.

Metatecture provides users with the ability to capture metadata on collections, parties and activities. It replaces a series of finding aids, which were available in 90 individual, static, downloadable documents on the museum's website and includes a public interface, providing access to the metadata for researchers and the general public. Further development of the database includes a reporting facility and finding aid generation tool.

This project, now in active use, is one of the few ANDS projects to be completed in 2011. In December 2010, we reached a milestone as the first project to harvest records to Research Data Australia (RDA) from South Australia. We now have 150 collection, party and activity records in RDA, and our records are also harvested by Trove.

![Figure 2: Metatecture database](image2)
A more complex repository
In 2010, the Library was also approached by UniSA’s Division of Health Sciences to develop a repository to capture health research data and metadata. The repository will leverage many of the core components from the AMS and Metatecture, however, will be further enhanced to allow users to harvest metadata from third party repositories, secure metadata fields to roles and collect metadata regarding all changes within the system. Information will also be captured regarding the variables held within the research datasets allowing researchers to quickly identify previously collated data and directly apply for access to the datasets.

The new repository will, at its core, utilise the Fedora Repository framework to store its digital content - benefitting from the already invested community effort. A web front end will be built to allow the user numbers to scale and access the system from a range of organisations and environments.

The system will also be developed to be integrated into a more complex repository for health related data being linked together by SA NT DataLink. The system will provide a public interface into metadata being captured by SA NT DataLink and assist researchers in accessing more representative samples helping them to better understand the population’s health.

The future of research repositories at UniSA
In the future, the model could be further extended to create a one-stop-shop for researchers, by providing a centralised location for them to start their research project, and to follow through each step of the project through to completion (including interaction with areas of the institution to seek approval etc.), at which stage their final product can be submitted to and showcased by the Library.

It is clear that the initial repository model has been changed dramatically since its inception. However, it is also apparent that the basic aspects of the model are still applicable, and can be reused again for future repositories. The key is the vital relationship between the research data and the metadata and encouraging researchers to foster responsible data management principles by using a centralised location to capture, store and share data.
ABOUT THE AUTHOR(S)

Ann Morgan is the Project Management and Quality Assurance Coordinator at University of South Australia Library. Prior to this, she worked as the Archivist at the Bob Hawke Prime Ministerial Library (at UniSA). During this time she also served as the Project Coordinator on the Architecture Museum Metadata Project – which involved the development of an archival database for UniSA’s Architecture Museum. Ann has also worked as a metadata librarian at UniSA, and has worked in several public and corporate libraries in Ireland. After graduating from University, Ann worked as a mainframe programmer in one of Ireland’s largest financial institutions. Ann has a Bachelor of Arts (Hons - German and Irish), a Higher Diploma in Business and Financial Information Systems from University College Cork and a Higher Diploma in Library and Information Systems from University College Dublin.

Mark Baldock is the Web Coordinator for the University of South Australia Library. He manages the UniSA Library Web Team supporting a range of locally developed applications and services as well as third party systems. Mark joined UniSA after working in numerous roles for HP, including technical lead, test manager and project manager. He worked with many of Hewlett Packard’s customers in a range of industries, including government, financial services, and manufacturing. Mark was recognised globally as one of HP’s leading innovators having developed a number of internationally deployed, distinguished level, software systems. Mark has a Bachelor of Computer & Information Science and a Bachelor of Management from the University of South Australia.