

**Title:** Content Is King: Developing And Expanding The Australian Digital Theses Program.

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### **Abstract**

Building on the existing central metadata repository of digital theses, established by the Australian Digital Theses (ADT) program over a number of years, with the active participation of over twenty Australian universities under the direction of the Council of Australian University Librarians (CAUL), the ADT Expansion and Redevelopment project intends to increase the coverage, utility and exposure of Australian theses to the national and international research community. This will include the development of a one stop shop for Australian theses, increasing the number of digital theses through retrospective conversion and providing expertise and advice on the management of digital theses in local institutional repositories. The University of New South Wales Library and partner institutions, received one of four grants from the Australian Research Information Infrastructure Committee in late 2003 to improve access to Australian Research. This grant will be used to progress the objectives of the project within the framework of the Australian Digital Theses Program.

### **Development of the Australian Digital Theses Program**

The Australian Digital Theses Program (ADT)<sup>1</sup> began as a research project funded by the Australian Research Council. The project's rationale was to expose this research to wider and global audiences through exploiting the capacities of electronic document creation and communications technologies. Seven Australian university libraries under the leadership of The University of New South Wales Library participated in this project between 1998 and 2001. The project implemented a distributed database model with the following features:

- Each university hosts electronic versions of theses
- Each university develops workflow for the submission and storage of these electronic versions. The ADT has adapted software developed by Virginia Polytechnic to support theses processes
- Each university can retain its intellectual property policies for access to electronic versions of theses. Open access is the goal of ADT, but this cannot be mandated. For example, one Australian university restricts access to abstracts only
- Metadata for these electronic versions are harvested to a central metadata repository. The ADT uses HotMeta from the Distributed Systems Technology Centre (<http://www.dstc.edu.au/Products/metaSuite/HotMeta.html>)
- The metadata repository is freely available on the world wide web

In 2002, the Council of Australian University Librarians (CAUL) agreed to transform this project into a sustainable program. All 38 Australian university libraries are members of the ADT Program. A small fee of \$A1700 per annum is paid by each CAUL member to fund the central costs of the program, covering maintenance of the metadata repository and administration. The University of New South Wales Library manages the ADT Program on behalf of CAUL. A two-tiered governance model has been established. A policy committee contains representatives from CAUL, the National Library, postgraduate students and the academic research community. The participation and involvement of postgraduate students and academics has been a key factor in the success of ADT, together with the high level of collaboration among the Australian university libraries. A technical committee reports to the Policy Committee.

In 2004, the Council of New Zealand University Librarians (CONZUL) expressed interest in joining the ADT, with the University of Canterbury in Christchurch becoming the first New Zealand member. An international focus for the ADT extends beyond the immediate region. ADT has been active in the international NDLTD (Networked Digital Library of Theses and Dissertations) since 1998. In September 2005, the international ETD (Electronic Theses and Dissertations) Conference will be held at the University of New South Wales in Sydney.

The success of the program is reflected in the growth of the number of theses available. In July 2004, 2373 electronic versions of theses were accessible through the metadata repository. About 75 theses are added per month. The number of CAUL members is increasing steadily, with 24 of the 38 members actively participating in adding content. Several CAUL members are in the queue to begin contribution.

### **The Need to Expand**

A number of external factors has given the ADT Program an opportunity to increase its coverage and utility to the national and international research community. These factors were:

- **The Discovery Problem.** Finding information about higher degree theses has not been easy for the research community. Print based union lists were abandoned some decades ago. While some discipline based databases of theses exist, there is no comprehensive source of data about Australian higher degree theses. While many theses are catalogued onto the National Bibliographic Database maintained by the National Library of Australia as part of its Kinetica service, there are practical limitations in searching for theses in a 14 million record database. The Australian research community told the ADT Program very clearly: we want one place to look for this information, not five or ten databases. Consequently, the ADT Program adopted expanding the central metadata repository to contain information about all higher degree theses, whether they were in digital form or not. As theses were retrospectively digitised, they could be linked to the record in the metadata repository. A natural extension of this is to increase the amount of online content available, through retrospective conversion of print theses
- **The Open Archives Initiative.** OAI compliance for the metadata repository is needed to increase the visibility of the ADT Program and to enable harvesting by other services. There is high overlap between the original goals of the ADT Program and the services envisaged by the Open Archives Initiative
- **Institutional Repository Software.** Some CAUL members have decided not to use the software developed by Virginia Polytechnic and modified for the ADT, preferring instead to use software that will allow them to manage all forms of digital content, whether e-prints, online journals, digital theses or learning objects. In other words, these libraries asked: why have different software for digital theses? Software such as FEDORA and D-Space were not available when the ADT Program commenced. While the e-prints.org software has been available for some time, some CAUL members took the view that it was more important to build online content with communities that were willing to provide this content. With the postgraduate community, an enthusiastic source of content has developed. Many postgraduates have limited opportunities to make their research known. Achieving faculty participation in institutional repository programs such as D-Space has proved to be very difficult in many institutions. However, it is inevitable that the future will see the ADT Program harvesting metadata from a range of software used at local sites. It is quite possible that some universities will contract with commercial organisations to provide services for the local submission and management of digital theses
- **Mandatory Submission.** Five Australian universities are requiring candidates to submit a digital version of their thesis. The number of universities mandating digital submission is expected to grow, which will lead to an increase in online content and associated metadata.

Responding to these needs required resources. Fortunately, government initiatives in Australia's research infrastructure came at the right time.

### **The Opportunity to Expand**

Australia's Commonwealth Government funds scientific research and innovation through a program known as Backing Australia's Ability.<sup>2</sup> Over \$8 billion is committed over the ten year period from 2001-02 to 2010-11. The government has established the Systemic Infrastructure Initiative (SII)<sup>3</sup> as part of Backing Australia's Ability to support development of a robust infrastructure to support research and innovation in Australia's universities. Infrastructure covers areas such as libraries, telecommunications, specialised equipment and research facilities. The SII is managed by the Department of Education, Science and Training (DEST).

In July 2003, DEST issued a formal Call for Proposals<sup>4</sup> from consortia for projects addressing the discovery, creation, management and dissemination of Australian research information in a digital environment. Proposals were sought for two categories of projects: institutional repositories; and, "common technical services", a covering term for access management, authorisation, search services, digital rights management and metadata support. The need to expand the ADT Program addressed both these categories and a consortium led by The University of New South Wales was formed to prepare a proposal. Other members of the consortium are Curtin University of Technology, University of Technology Sydney, University of Melbourne, University of Queensland and ProQuest Information and Learning. The project was awarded funding and is called *Australian Digital Theses Program – Expansion and Redevelopment*.<sup>5</sup>

The objectives of the project are to:

- Build on existing awareness and use of Australian theses through efficient search services
- Achieve compatibility with the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)
- Provide expertise and advice on the management of digital theses in local institutional repositories
- Develop content through bulk retrospective digitisation of Australian higher degree theses.

The major activities of the project are:

- Software redevelopment of the metadata repository. This includes support for OAI-PMH, improved data conversion tools (eg, from MARC to Dublin Core) and better data quality and management. The search interface should support a wide range of user needs, including searching by discipline, by institution, and for digital content only
- Adding metadata for theses not currently in the ADT metadata repository. The chief source of data is the National Bibliographic Database. MARC records for Australian higher degree theses will be identified, extracted, converted to Dublin Core and added to the ADT metadata repository. The project will also address the ongoing need to harvest new and revised metadata from the National Bibliographic Database, library catalogues, institutional repositories and other sources of data about higher degree theses. Priority will be given to adding abstracts to increase the richness of metadata

- Developing retrospective content accessed through the metadata repository. Libraries perform significant in-house digitisation of theses and the project will identify and promulgate good practices for this activity. However, through the involvement of ProQuest Information and Learning, the project will be able to test its retrospective digitisation service and compare the cost-effectiveness of in-house digitisation
- Assist institutional repository projects to manage digital theses. The project will work with other projects that have decided against using software specifically designed to manage digital theses. The project is working with the ARROW (Australian Research Repositories Online to the World) Project<sup>6</sup> led by Monash University, which is deploying VITAL and FEDORA™. The University of New South Wales Library is a member of the consortium, along with Swinburne University of Technology and the National Library of Australia.

## **The Future**

The expansion project is underway and due for completion in early 2005. Through this redevelopment, access to the research in Australian higher degree theses will be improved. Along with the new technical capabilities of the metadata repository, its increased coverage should stimulate new and retrospectively converted digital versions of theses. The success of the ADT Program can be attributed to the strength of its national and international partnerships. The project has built on a long history of collaboration among Australian university libraries, bringing experience in digital content management to staff and students. New Zealand's participation in ADT fosters regional collaboration, which could be expanded to other nations. The enthusiastic support from postgraduate students and the academic community will foster the growth of the ADT by enabling students to experience and experiment with new forms of digital scholarship. The project has also decided to work with a commercial organisation in a spirit of partnership.

## **References**

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