DIGITAL THESES – THE NEW ZEALAND EXPERIENCE

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ABSTRACT

This paper will describe the New Zealand university sector and the impact on it of government policies in relation to the tertiary education sector and more widely that make the deposit of theses in digital form an idea whose time has really come. The paper will describe the response to this challenge to date and outline how the university libraries intend to manage the deposit of theses in digital form as part of a process that should see the process. The proposed actions are all at a very early stage and most libraries view them as the first step towards the concept of an institutional repository for all research outputs from within an institution. In this regard, the paper will also outline the work done by the Institutional Repository Project Team, which was set up by the National Library of New Zealand, and comment on how its findings can impact on and facilitate the deposit of digital theses in New Zealand universities. The role of the library in each institution will be highlighted as the primary driver for this sort of development within each institution and as the appropriate manager of its development for the future.

1. INTRODUCTION

1.1 General Background

New Zealand lies 2000 kms to the east of the East Coast of Australia, and has a population of just over 4 million people. The population is 79% of European origin, 15 % Maori (the indigenous people), 7% Pacific Islander, and 7 % Asian.

European settlement began in the early 1800s with sealers and whalers, but 1840, the date of the Treaty of Waitangi between the British Government and a number of the Maori Tribal leaders marked the real beginning of immigration to the country.

There are eight universities in total: the University of Otago, established in 1869; the University of Canterbury, established in 1873; Lincoln University, established in 1881; the University of Auckland, established in 1883; Victoria University of Wellington, established in 1897, Massey University, established in 1928; the University of Waikato, established in 1965; and the most recent university, the Auckland University of Technology, was established in 2000.

1.2 Tertiary education organisation

New Zealand has four layers of tertiary education. These are government (publicly) funded. There are also private tertiary training establishments (but 94% of their qualifications are for sub degrees and diplomas).

The 4 types of public tertiary education institutions are:
Universities (8)
Colleges of Education (2 remaining, but likely to merger with a university as four Colleges already have done so)
Polytechnics (20) (in a mix of urban and provincial centres)
Wananga (3) (Maori tertiary institutions)

Table 1. Tertiary Sector Student Numbers

Category	Headcount students (2004)	Share of total students
Universities (8)	174,494	36%
Colleges of Education (2 remaining)	7,105	1.5 %
Polytechnics (20)	232,734	48 %
Wananga (3)	70,775	14.5 %
Total students:	485,108	100 %

Source: http://www.minedu.govt.nz/index.cfm?layout=document&documentid=10508&index

The headcount in 2004 was 485,108 students. This means that over 12% of New Zealanders were enrolled in a tertiary education course.

1.3 University sector growth

From 1990, there has been a substantial growth in the New Zealand university student population, which is only now levelling off in 2005 because of demographics (fewer school leavers) and full employment in the workforce (New Zealand has the lowest rate of unemployment in the OECD). The student populations range in size from 3649 EFT at Lincoln University to the University of Auckland, our largest, at 28,026 EFT.

Table 2. University Sector Student Numbers

University	EFT Student	EFT P/Grad	EFT U/Grad	Headcount Student	Headcount P/Grad	Headcount U/Grad
University of Auckland	28026	4862	23164	35,723	7984	27739
Auckland University of Technology	15445	697	14748	23,500	1087	22413
University of Waikato	10,749	973	9776	12,550	1594	10956
Massey University	23,320	4882	18438	41,412	9072	32340
Victoria University of Wellington *	13,769	1751	12018	16,255	2188	14067
University of Canterbury	12,168	1846	10322	13,428	2453	10975
Lincoln University	3,649	422	3227	4,811	425	4386
University of Otago	16,637	1615	15022	18,923	1837	17086
Total:	123,763	17,048	106,715	166,602	26,640	139,962

Figures for Victoria University of Wellington are for 2003
Source: New Zealand university library statistics 2004 (draft)

1.4 Postgraduate numbers and implications for workload for digitisation of theses programmes

As well as growth in the general university student numbers, there has also been growth in the postgraduate area. In 2004, 13.7% of EFT students were postgraduate. Between 1997 and 2002, there has been a 43 % increase in the completion of doctorates, and a 19% increase in the completion of Masters and Honours degrees. Postgraduate completions (outcomes) are also an important factor for the government's PBRF (Performance-based Research Funding) for universities, so the encouragement to increase postgraduate numbers and completions is likely to continue, despite the trend for overall student numbers to level off.

Table 3. Theses Completion Data

University	Doctorates	Masters/Honours
University of Auckland	129	**1171**
Auckland University of Technology	0 *(New University)*	**130**
University of Waikato	60	**413**
Massey University	70	**877**
Victoria University of Wellington	46	**749**
University of Canterbury	77	**643**
Lincoln University	18	**89**
University of Otago	121	**607**
Total:	521	4679

Source:
http://www.minedu.govt.nz/print_doc.cfm?layout=document&documentid=7116&index

2. THE NEW ZEALAND POLICY ENVIRONMENT

2.1 Tertiary Education Commission

The current tertiary environment in which New Zealand universities operate evolved out of a framework recommended by the Tertiary Education Advisory Commission which published a series of reports in 2001 and 2002.   The government has published a Tertiary Education Strategy for 2002-2007 (http://www.tec.govt.nz/about_tec/strategy/strategy.html) and a series of Statements of Tertiary Education Priorities (http://www.tec.govt.nz/about_tec/strategy/step/step.html) have been published to reinforce policy.   The Strategy is regulated by the Tertiary Education Commission (TEC).

2.2 Performance Based Research Fund

As part of this new framework it was decided in 2003 to replace "equivalent full-time student" top up funding for research with the Performance Based Research Fund (PBRF). Evaluation of researchers by external peer review panels and the calculation of quality scores are at the heart of this new model.
The PBRF is intended to reveal the quality of research across the tertiary sector.
The first round of PBRF evaluations occurred in 2004 with the next round commencing at the end of 2006.

The PBRF exercise has been important for university libraries because it became apparent in the first round of the process that evaluation of research is heavily reliant on good bibliographic description of and access to research outputs.   Unfortunately, PBRF information on research outputs was collected by the TEC in a format which made it useless for anything other than the PBRF process.

As a result of this, the Council of New Zealand University Librarians (CONZUL) has made recommendations to TEC that the data gathering process for research outputs should be re-designed so that the information can be used for multiple purposes and a system designed, in accordance with international standards and trends, using open access institutional electronic repositories.   Suddenly, there was a real need for university libraries to pick up the cause of open access and electronic repositories if research at a local and national level is to be accessible.

2.3 National Digital Strategy

Another important recent policy influence is the development of the National Digital Strategy by the National Library of New Zealand and various government departments (http://www.digitalstrategy.govt.nz)

The key elements of the Strategy are:

- To provide enhanced access to digital information for New Zealanders, eg online databases, electronic journals, especially New Zealand content
- To collect digital resources, especially those relating to New Zealand and New Zealanders
- To ensure the long-term storage and preservation of New Zealand's online heritage
- To provide enhanced access to the Library's collections through digitisation.

Although the National Digital strategy is a general policy which encompasses many sectors it does reflect a philosophy of access through digitisation by building the necessary technical architecture for standards-based access to e-content resources.

3. ACTIVITY TO DATE

All New Zealand university libraries are at a similar stage in terms of digitisation of theses. All have seen it as a first step towards full digital repositories of research outputs in general from their institutions.

Lessons learned to date include:
- the Library is the appropriate manager of this sort of initiative;
- It helps to have an academic champion;
- Involve the postgraduate students – they expect this option to be available already;
- Patience is a virtue as one works one's way through a typical university consultative structure;
- It is extremely helpful when someone else can provide a solution and assistance to implement it – in New Zealand's case it was the ADT Programme.

Auckland University of Technology
- Already requires theses to be deposited in digital form
- Has joined the Australian Digital Theses Programme
- Has initiated a project called 'AUT Open Access Repositories: Digital Theses' to: provide open access to AUT digital theses through the ADT Programme; to identify options for the establishment of an open access repository for digital theses; and to estimate resource requirements to implement the preferred option.
  - These developments are aligned with the Research Development Plan and Operational Plan of the AUT Research Committee of Academic Board which has stated that it will:
    "support initiatives to develop and populate institutional repositories of published research outputs that conform to international standards and architectures".
- Has indicated an interest in being one of the three demonstrator sites for the New Zealand Institutional Repositories Project looking at digital repositories of research outputs as a whole.

University of Auckland
- Will be joining ADT
- Is investigating options with ProQuest Digital Commons.
- Has approval in principle from Graduate Board for deposit of theses in digital form
- May be providing abstracts initially and not full text as regulatory environment in the university is not yet agreed upon
- Has indicated an interest in being one of the three demonstrator sites for the New Zealand Institutional Repositories Project looking at digital repositories of research outputs as a whole.

Waikato University
- Has Academic Board approval for joining ADT, and will be doing so shortly.
- The digitisation of theses project has strong support on campus.
- Changes to Regulations on the submission of theses to require deposit in digital form have been approved by Boards of Studies and the Academic Board.
- Digital deposit will be mandatory for students enrolling in graduate programmes from January 2006, but it is expected that many students now completing their theses under existing Regulations will also deposit digital copies.
- Will initially use ADT software, but may change if/when the institutional repositories project gets underway and alternative software options become clearer.
- A server is being made available by ITS (Information & Technology Services).
- An implementation project team is being set up, led by the Library and involving ITS, the Postgraduate Studies Committee and Student & Academic Services.

Massey University
- Has joined ADT.
- Has the approval of the Doctoral Research Committee and the Dean of Postgraduate Studies to proceed with digital theses as soon as software decisions can be made
- Is looking at a pilot project with the Museum Studies programme who already have citations and abstracts on a departmental server
- Is the international partner in the RUBRIC (Regional Universities Building Research Infrastructure Collaboratively) initiative, led by the University of Southern Queensland, and with Australian partners the Universities of New England, Sunshine Coast, and Newcastle. The project is looking at institutional repositories and best practice, acting collaboratively and sharing best practice, drawing on the Australian first round demonstrator projects known as FRODO (APSR using D-Space, ARROW using Fedora, and MAMS as middleware).

Victoria University of Wellington
- Will house theses in an institutional repository.
- Will use ADT to harvest metadata.
- Will have voluntary submission not mandatory.
- Has indicated an interest in being one of the three demonstrator sites for the New Zealand Institutional Repositories Project looking at digital repositories of research outputs as a whole.

Lincoln University
- Is not yet ready to contribute digital theses but will be a member of ADT through CONZUL.

University of Canterbury
- Has joined ADT
- Has Academic Board approval for mandatory deposit of theses from 2006 and voluntary deposit until then
- Will use ADT software until institutional repository project reaches firmer conclusions on other software options.

Otago University
- Has joined ADT
- Approval for abstracts only at this stage but is seeking university approval for full digital deposit
- Will not be mandatory deposit
- Will use ADT software in the first instance.

4. CONCLUSION

So, in summary, the digital theses scene in New Zealand universities is a positive one where, thanks to the assistance of the ADT Programme, the university libraries are poised to:
- embrace the opportunities to make this sort of information more accessible to an international audience,
- position the libraries as the logical developers and managers of this sort of initiative,
- use the experience as the first step towards full institutional digital repositories of research outputs.
- deliver a superb service to their individual institutions and to the wider world.