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Resource Allocation in
Selected Australian Universities

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2007

Submitted in partial fulfilment of the requirements for the degree of
Doctor of Business Administration in the Faculty of Business and
Enterprise, Swinburne University of Technology
Abstract

Australian universities are multi-million dollar operations employing tens of thousands of people. They attract revenue from a variety of government and non-government sources, and yet, as non-profit organisations they are judged by governments, peers and their communities on their performance in teaching and research rather than on a financial bottom line.

In order to achieve these results, university managers must make decisions on how to allocate available funding throughout the university. Faced with competing demands on scarce funds, how do university managers make these choices? One option is to use a resource allocation model to ‘crunch the numbers’. Resource allocation models can incorporate a number of elements – student and staff numbers, weightings and performance data, for example - to allocate available funds. These allocation models are used in different ways in different universities, but serve the same basic purpose of assisting decision-making on how much to allocate to different sections of the organisation. Such models operate within a process and context that includes the strategic aims of the University, the organisation structure, its committees and culture.

This thesis contains case studies of resource allocation models and processes used in three Australian universities. It examines the methods used for resource allocation at the first and second levels within each university; that is, from the Vice-Chancellor to Dean (or equivalent), and from Dean to Head of School (or equivalent). Observations and conclusions are drawn on the models used, the processes surrounding the models, and the continuity between the two layers of allocations.

The research finds all the case-study universities operate models at multiple levels in their organisations, and that there is a concerning lack of consistency and flow-through at these different levels. The messages that the university leadership intends to send through the allocations may be lost to managers one-process removed from them. The research also concludes that transparency is the most important element of the resource allocation process. University staff dealing with allocation processes will accept the results, even if they are not ideal, if they can understand how and why decisions were made.

As a professional doctorate thesis, the aim is to provide a practical aid to people with responsibility for resource allocation in universities.
Acknowledgements

Dedication

To Family

Thanks

Thank you to the senior university staff who gave their time and experience in interviews.

Thank you to Professor Louise Kloot for her thoughtful and encouraging supervision.
Declaration

I declare that this thesis

- contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the thesis;

- to the best of the candidate’s knowledge contains no material previously published or written by another person except where due reference is made in the text of the thesis.

Candidate Name: Elizabeth Eedle

Candidate Signature: ..................................................

Date: ...............................................................
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Chapter One: Introduction

1.1 Introduction to Chapter One

Chapter One provides an outline of the thesis including the topic to be examined, the approach taken and the delimitations and key assumptions that provide boundaries for the research project. The chapter explains the gap in the research literature that this thesis seeks to fill, the value of the research and how it can contribute to practice in the university environment.

1.2 Introduction to the Topic

This thesis investigates resource allocation within Australian universities by examining three case study universities and making observations and recommendations about those case studies. It does not provide an evaluation of models, but rather it looks at the composition of models and the processes surrounding them with the aim of improving theory and practice for university managers.

The thesis begins from the basis that Australian universities do not have enough government nor private funding for all the activities they would wish to promote and support. Decisions, therefore, have to be made about the best use of available funding. University managers at different levels in the organisation must decide where to direct resources, and the basis on which allocations should be made.

A number of alternative models for resource allocation exist, including formula- and performance-based options, cost or zero based, centralised or decentralised. Using case studies, this thesis examines the current practice at multiple levels within three Australian public universities to examine how resources are allocated.

It examines questions about alignment of resource allocation with university strategy, organisational factors and performance outcomes. For a practitioner in a university, it is useful to understand where resource allocation models occur in the organisation, how they might be driving behaviour, and whether multiple models in the same organisation are driving coherent strategies and behaviours. It is important to identify whether
models in the same organisation are at odds either with each other or with the stated strategies of the organisation.

The resource allocation model is a key management tool for delivering strategic outcomes, and an improved understanding of current practice highlighting options, differences and similarities is a useful contribution to university management.

1.3 Background to Australian University Funding Context

Australian universities continue to operate in an environment of change. In 1970 there were nineteen publicly funded universities in Australia, enrolling about 50,000 students. In addition, the colleges of advanced education (CAEs) enrolled about 100,000 students. In 1987 the then Federal Minister for Education, Employment and Training, the Hon. John Dawkins released a Green Paper introducing major changes to the Australian higher education system including a change in status of CAEs and institutes, amalgamations of institutions, the re-introduction of student fees via the Higher Education Contribution Scheme (HECS), and a shift to a mass higher education system. These proposals quickly became policy and by 2005, the Australian Unified National System (UNS) comprised thirty-eight universities with almost 1,000,000 students.
Graph 1.1: Growth in Australian Higher Education Student Numbers 1965 to 2005
Sources: Higher Education Students by Selected Characteristics, 1949-2000, Students 2005 (full year) Selected Higher Education Statistics

The financial environment for Australian universities also changed. Table 1.2 illustrates the shift in sources of Australian public university funds between 1939 and 2000. In 1980, before the Dawkins Reforms, Commonwealth Government funding made up almost 90% of university funding. By 2000 this had reduced to just over 63% (grants and HECS combined) with fees and charges increasing from negligible in 1981 to 18% of university income by 2000.
Table 1.1: University Income by Source, 1939 – 2000

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Government Grants</td>
<td>43.90%</td>
<td>89.30%</td>
<td>59.50%</td>
<td>45.2%</td>
<td></td>
</tr>
<tr>
<td>State Government</td>
<td>44.90%</td>
<td>36.30%</td>
<td>0.80%</td>
<td>4.50%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Student contributions</td>
<td>31.70%</td>
<td>8.60%</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>HECS</td>
<td>..</td>
<td>..</td>
<td>13.20%</td>
<td>18.0%</td>
<td></td>
</tr>
<tr>
<td>Fees and Charges*</td>
<td>..</td>
<td>..</td>
<td>10.40%</td>
<td>18.2%</td>
<td></td>
</tr>
<tr>
<td>Investment income, Donations and</td>
<td></td>
<td></td>
<td>16.10%</td>
<td>6.20%</td>
<td>4.40%</td>
</tr>
<tr>
<td>Bequests</td>
<td>7.20%</td>
<td>5.00%</td>
<td>5.50%</td>
<td>7.00%</td>
<td>13.5%</td>
</tr>
</tbody>
</table>

* Fees and charges other than HECS, including international student fees, Australian postgraduate coursework fees, Australian undergraduate fees.

These figures serve to illustrate the radical change that has occurred in universities in Australia in recent years. Universities have adopted various strategies to cope with the changes. Change, however, is continuing at a rapid pace. For example, the passing of the Higher Education Support Act 2003 has been followed by the changes in the National Protocols for Higher Education in 2006. Universities must continue to adapt.

Universities are financially complex organisations. As illustrated in Diagram 1.1, revenue may be earned by various levels of the organisation and flow through it according to each institution’s own rules. For example, Commonwealth Government funding for teaching and research may be received at the top level, while fee-for-service revenue may be paid directly to the academic unit doing the teaching or consulting. Research and industry grants may be received centrally or by departments or faculties. Every university needs a set of rules that governs how revenue is treated and how it flows between the different layers of the organisation.

Diagram 1.1: Revenue Flows (1)
A key issue for all universities is the optimal management of resources in a climate of fiscal constraint. How can a university make best use of the resources available to it, and provide incentives within its resource allocation model to encourage the activities it wants to promote? Does a university’s resource allocation model support its strategic direction or is it unintentionally hindering it? When improving or changing a resource allocation model, what factors need to be considered and what choices are available to a university?

The aims of this research are to understand better the complexities of resource allocation models in the university environment, examining more than one level of allocation in the institution, and increase the understanding of how resource allocation could be linked to the strategy of the institution. The practical outcome of the research should be information for university managers at various levels in the organisation to assist them in better utilising resources and linking resource allocation to strategy.

1.4 Definitions of Terms

**Self-Generated Revenue**
Non-government sourced funding earned by a university, for example, through student tuition fees or fee for service consultancies.

**University Core Business**
Normally regarded as teaching and learning, research and community engagement.

**Academic Unit**
An area of the university engaged in academic activity (research and / or teaching and learning).

**Corporate Unit**
An area of the university that provides support services within the university. These might be academic support (such as student administration) or more general support (such as finance, human resources or facilities and maintenance services).

**Faculty**
A large academic unit with a core theme within a University, sometimes comprising several schools and/or departments.
Resource Allocation Model
A tool for dividing up available or anticipated income among various component parts of an organisation. For the purposes of this research, the resource allocation model will address only financial resources, not physical space, workloads and other non-financial items.

Centralised Resource Allocation Model
Revenue is received by the centre before being allocated to academic units and support services according to a pre-determined formula. A centralised model may also refer to a model where financial responsibility and accountability is held at the centre of the organisation.

Decentralised Resource Allocation Model
Revenue is received by the units that earn it, which may then be required to contribute to central and support services of the organisation via a pre-determined formula. A decentralised model may also refer to a model where financial responsibility and accountability are devolved to academic units.

UNS
Unified National System. Introduced in 1989 with the Dawkins reforms to replace the binary system of universities and colleges of advanced education. With the introduction of the UNS, universities received funding under a common formula (the relative funding model or RFM).

Stakeholders
Students, staff, and others with a direct interest in the university and its performance.

1.5 Research Problem
What are the important factors a university must take into account when devising an effective resource model and process?

The research uses case studies from three selected Australian universities to develop an insight into resource allocation models in universities. It investigates two levels of resource allocation model:
1. At the top level, from the university to its faculties (or next-largest academic organisational units)
2. At the second level, from faculties to schools (or equivalent).

The allocation model and policies used by the Commonwealth Government to allocate funds to universities in the Unified National System (UNS) are outside the scope of this study, except where they inform the internal allocation methods.

In summary:
Research Area: Financial self reliance in universities
Research Topic: Resource allocation in universities
Research Question: What are the important factors a university must take into account when devising an effective resource model and process?
Practical Problem: What resource allocation model best suits an individual university’s need to increase and allocate available funds whilst remaining committed to its core business?

In making decisions about how to allocate their available resources to the activities they currently conduct or plan to conduct, university decision-makers are working within a context that includes safeguarding their resource base (and, in the Australian experience, endeavouring to increase the resource base), and then monitoring the financial health of the institution by checking expenditure against budgets to reduce the likelihood of unexpected over-spending. The resource allocation model fits in the step in between.

This thesis examines some of the available options in that step. The main focus is on allocations in academic units, but some mention is also made of non-academic or support unit allocations, where these interrelate with the main focus.

A practical outcome of the thesis is an increased awareness of critical factors, while also providing a set of guidelines for higher education managers seeking to develop a resource allocation model that balances providing incentives to increase self-reliance and entrepreneurial behaviour with resourcing of core business and provision of cross-subsidies for areas considered valuable despite their financial status.
1.6 Research Approach

In order to achieve its aim the study analyses case studies of three Australian universities.

The methodology employed is described by Page & Meyer (2000, p15) as “non-experimental research”, looking for relationships in existing circumstances. It is an exploratory study that uses the literature and case studies to develop a framework to examine the categories and treatment of income and allocation included in a resource allocation model. Case studies of university resource allocation models help to build theory that may then be generalised through empirical testing.

The case studies are used to investigate similarities and differences in the resource allocation models of universities and the strengths and weaknesses of these approaches. The examination of the budget models is complemented by interviews with relevant university officials to gain a deeper understanding of the models. These university officials are the Vice-Chancellor, the Chief Financial Officer and / or the Deputy Vice-Chancellor (Resources) or equivalent, and senior academic managers such as Deputy Vice-Chancellors and Deans with responsibility for making allocations within divisions or faculties.

The case study interviews provide access to a wealth of experience from these senior university officials, and their opinions, as well as their experiences, are solicited during the interviews.

1.7 Justification & Value of the Research

When the investigation began, the researcher was employed by one of the case study universities, University Gamma, in a role that included responsibility for advising on budget allocations and preparing data for modelling of budgets at the second level within the university. As a DBA student, the researcher was particularly interested in examining a practical question of major importance in the workplace, to increase knowledge and improve her effectiveness in the role.
The research has wider relevance because Australian universities, as is demonstrated later in the thesis, are operating in a climate where government funding, as a proportion of budget, is declining and are therefore facing the challenge of reducing their reliance on this source of revenue. In order to do this, they need to understand the relationship between resource allocation and core business, whilst also encouraging revenue raising and careful use of available funds.

The value of the research is at the broad system-time level in Australia, as all public universities are facing a similar challenge.

Figures show that over time there has been a relative decrease in Commonwealth Government funding as a proportion of operating revenue to which universities have had to respond. For example, in the case of University Gamma, Commonwealth Government statistics (DEETYA 1997, DEST 2002) show that in 1995 the Commonwealth accounted for 71.8% of its operating revenue (against 71.1% for the National System on average), but five years later Gamma had reduced its dependence on Commonwealth funding to 61.6% (compared with a UNS average of 63.2%). In particular, Gamma’s income from international and postgraduate student fees increased from 14% of operating revenue in 1995 to 23% in 2000, when the UNS average moved from 7% to 12%. (Note: these figures do not include State Government funding for TAFE activities.)

Table 1.2: University Gamma & UNS Higher Education Operating Revenue

<p>| Source: Higher Education Selected Financial Statistics 1995 and 2000 (does not include TAFE funding) |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|</p>
<table>
<thead>
<tr>
<th>($'000)</th>
<th>($'000)</th>
<th>($'000)</th>
<th>($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Government Grants</td>
<td>$53,792</td>
<td>$4,457,769</td>
<td>$46,417</td>
</tr>
<tr>
<td>HECS</td>
<td>$12,358</td>
<td>$902,046</td>
<td>$29,081</td>
</tr>
<tr>
<td>Government Subtotal</td>
<td>$66,150</td>
<td>$5,359,815</td>
<td>$75,498</td>
</tr>
<tr>
<td>International Student Fees</td>
<td>$8,966</td>
<td>$441,232</td>
<td>$19,526</td>
</tr>
<tr>
<td>Postgraduate Student Fees</td>
<td>$4,268</td>
<td>$73,769</td>
<td>$8,731</td>
</tr>
<tr>
<td>Other Research Grants and Contracts</td>
<td>$2,284</td>
<td>$291,759</td>
<td>$0</td>
</tr>
<tr>
<td>Investment</td>
<td>$1,703</td>
<td>$305,042</td>
<td>$1,074</td>
</tr>
<tr>
<td>Other Non-Government Income</td>
<td>$7,252</td>
<td>$960,394</td>
<td>$16,645</td>
</tr>
<tr>
<td>Other Subtotal</td>
<td>$24,473</td>
<td>$2,072,196</td>
<td>$45,976</td>
</tr>
<tr>
<td>State Government</td>
<td>$1,546</td>
<td>$103,710</td>
<td>$1,061</td>
</tr>
<tr>
<td><strong>GRANT TOTAL OPERATING REVENUE</strong></td>
<td><strong>$92,169</strong></td>
<td><strong>$7,535,721</strong></td>
<td><strong>$122,535</strong></td>
</tr>
</tbody>
</table>
This progress is meeting the strategies and objectives set by University Gamma, but does raise some concerns. Too heavy a reliance on international fee paying students carries its own risk. It is a relatively new funding source for Australian universities, as government policy prior to 1985 restricted the number of international students and the fees institutions could charge. Whilst the market has grown considerably since 1985, it is considered volatile and dependent on a few key factors including competition from universities in the USA, Canada and UK, the strength of national economies in Asia and financial exchange rates. A volatile world political climate also has the potential to impact adversely on the willingness of students to travel for their education.

Australian public universities, as members of the UNS, are funded at Commonwealth level via common formulae that include elements such as teaching and research performance and undergraduate target enrolments. Some grants, particularly in research, are specifically directed to individual projects. Most government funds, however, are untied; that is once they are received by the individual institutions, universities employ their own internal distribution models. Different universities use different methodologies for their resource distribution. In 1995, 23 out of 37 Australian universities used some kind of data-based resource allocation model (Piper, 1995).

In this context it is interesting to examine how resource allocation systems link with the strategic direction of a university. A first step in examining this is to understand how a budget is made up, and the different elements within it, in order to be able to compare models. Do some models favour past performance, do some favour future projections and targets? How much of a budget in an institution flows from the centre outwards, how much from the branches to the centre? Are there common factors in the resource allocation models of universities with successful self-reliance financial strategies including universities in countries other than Australia? What are the management and organisation structures within which the model operates?

The consequences of university finances going into deficit can be substantial. RMIT was reported as cutting up to 180 jobs and reducing spending at a "magnitude and intensity that has never been seen" after it predicted a $28 million loss in 2004. The University had reportedly anticipated a larger growth in international and domestic fee-paying students than actually occurred. It had already experienced financial problems after difficulties with the 2002 introduction of a new student administration system which caused losses of $17.7 million (The Age, 18/12/04). The University of Newcastle was reported to have reduced the size of its staff by 412 people (252
general staff and 160 academic staff) in an effort to reverse a trend of six deficit operating budgets (The Newcastle Herald, 18/5/06).

1.8 Outline of the Report

The research report comprises seven chapters.

Chapter 1 provides an introduction to the thesis, background to the research, including the research questions, methodology and assumptions. It outlines why the research is of value.

Chapter 2 provides a literature review. Several literature streams are followed including budget frameworks, power and strategy, and understanding entrepreneurship in the university context.

Chapter 3 provides a conceptual model that explains some of the frames of reference of the researcher before the data collection began.

Chapter 4 outlines the methodology used in the research. It examines why the particular methodology was selected and provides the steps in the research approach taken.

Chapter 5 reviews each of the case studies.

Chapter 6 provides an analysis of the data collected and describes findings and gives details of each of the case studies.

Chapter 7 contains conclusions and implications of the research.

1.9 Delimitations and Key Assumptions

The research begins with some key assumptions that will be noted, but not discussed, during the research.
The report does not question the increasing trend towards a more managerial culture in Australian universities and away from the traditional collegial culture. There is some disquiet (Stilwell, 2003) about the increasing influence of commercial practices (such as performance reporting and funding) in Australian universities, and the commercialisation of policies and processes of governance. It is sufficient to note that, while the current government policies exist, universities must use their available resources effectively and efficiently and acquire income from sources other than Commonwealth and State governments.

The strategy of embracing financial self-reliance and the impact on staff and functions within the organisation is not examined. Creating an entrepreneurial institution from a large organisation with a non-profit mission is a thesis topic in itself. The literature examining entrepreneurship in universities is reviewed, but it is assumed that, as non-profit organisations, universities pursuing an entrepreneurship strategy are doing so in an attempt to earn non-government revenue in order to improve the conduct of their core functions of teaching, learning and research. As Massey (1996, p4) noted, Bowen’s Law states “universities will raise all the money they can and spend all the money they raise”.

The research does not examine the policy of Commonwealth Government funding to universities except in the context of university resource allocation models and the need to cope with relative decreases in government funding. The reforms in higher education are outlined briefly to provide a context within which Australian universities operate and the changes that have impacted on universities over the past twenty years.

The research looks at operating revenue only, and does not examine allocation methodologies for ‘tagged’ funds such as research grants.

The research examines resource allocation models for operating revenue but it does not attempt to evaluate fully the effectiveness of the models studied. It looks at the elements that comprise the model, and options available to university managers, and by looking at current practice in three case-study universities it provides analysis of the models and the surrounding processes.
The research is conducted at a pragmatic level, accepting the environment within which Australian universities now operate, and provides a set of guidelines regarding options for models to allocate available resources to pursue their missions.

1.10 Conclusion to Chapter One

This chapter outlined the purpose and scope of the thesis, justified the research being undertaken and introduced the methodology employed on the research problem.

Chapter Two provides a theoretical foundation for the research through a literature review.
Chapter Two: Literature Review

2.1 Introduction to Literature Review

The literature review examines research and opinion on resource allocation in universities, setting the context for the research and identifying a gap in the literature that this research aims to fill.

This original contribution recognises that a resource allocation model is an instrument within a university which requires regular maintenance and review. Useful outcomes of the research, therefore, will comprise:

- advice on types of models along the continuum of centralised to decentralised, including strengths and weaknesses, linking these with the strategies the institution is pursuing;
- the experience of the models from the view of experienced senior academic managers;
- factors to take into account when reviewing and modifying a model.

The literature review is designed to support the research by examining the literature relevant to the research question, and identify a gap that might be usefully filled.

Abundant literature exists examining funding mechanisms used by governments both in Australia and overseas to allocate public funding to universities, including studies on the strengths and weaknesses of performance-based funding (for example: Ewell, 1999; Alexander, 2000; Burke, 2000, 2001 & 2002; Burke & Modarresi, 2000; Hubner, 2002; Sharma, 2002). A body of literature also exists examining options available to universities in making their initial distribution of funds within the organisation (for example: Schutt, 1994; Ezzamel & Bourn, 1995; Piper, 1995; Massey, 1996; Watts, 1996; Johnes, 1999; Williams, Abernethy & Dawkins, 2000; Rodas, 2001; Ergin 2002). What is lacking, however, is an understanding of the link between the first and second layer allocations in the organisation and the processes surrounding those allocations. It is important, as an academic manager, to understand the range of options available and the strengths and weaknesses of those options.
This is a serious issue, given that in 2004 Australian universities operated budgets from $25 million (the Australian Maritime College) to over $1 billion (Monash University).

Budgets drive behaviour (Facione, 2002). It is important, therefore, for academic managers to make resource allocation decisions against a background of full understanding as to how those decisions are likely to impact on the behaviour and decisions of others. Given the current Commonwealth Government’s push for individual workplace agreements in universities, it is increasingly likely that senior academic managers will be employed on performance contracts which set out in detail the accountabilities, responsibilities and expectations of their roles. This research will provide valuable assistance to university authorities in their determination of what factors to include when designing a resource allocation model and making resource decisions.

Budgets are a means to an end, not the end itself. Strategy should drive all operational matters including resource allocation, and therefore decisions on resource allocation models and processes need to be taken in the context of a good understanding of the individual university’s organisational strategy and power structures. The review of literature in these areas which is included in this chapter is designed to assist in setting the context for the reader. There is also a short introduction to some major concepts in strategic planning theory, which provide a theoretical context to organisational strategy and power.

This literature review is structured to examine:

- the changing nature of sources of university funds in Australia;
- budgeting concepts;
- performance funding; and
- resource allocation methodologies.

A further section examines power and strategy in organisations. The review then examines entrepreneurship in the established organisation, an important factor given the increasing emphasis on financial self-reliance for public universities in Australia. This review provides the base for the remainder of the study, suggesting allocation strategies and procedures designed to assist public universities, which currently derive a proportion of their funding from the Commonwealth Government, to develop a
renewable system of planning, monitoring and revision of their budget strategies and procedures to the best advantage of the university and its stakeholders.

Given that the “half life” of Commonwealth Government policy since it assumed financial responsibility for State universities in 1974 has been less than ten years (as noted in Section 2.2), a system of rolling reappraisal of university financial policies and procedures appears vital for the continued financial health of the university system.

2.2 University Funding Sources

What is the policy framework within which Australian public universities have operated over the past fifty years, and what changes have occurred? How has the size and mission of universities changed in this period? How have these changes affected the sources of funding for Australian public universities?

In order to understand why Australian public universities are driving towards greater efficiency and effectiveness it is useful to examine the changing pattern of funding they receive. This section examines the Australian context, particularly:

- the fundamental changes that have occurred in higher education in Australia during the twentieth century;
- shifts in government policy and in non-government funding sources;
- the growth of the international and local postgraduate student markets.

2.2.1 Timeline of Policy Changes in the Australian Higher Education Sector 1957-2006

The following timeline shows the major points of change in Australian higher education policy over the past fifty years, placing the funding changes in context. As a result of policy changes (often driven by formal reviews) the system has moved from a small group of nine elite universities with a small enrolment, through the binary system of universities and colleges of advanced education to a single ‘unified national system’ of mass participation in higher education.
1956 Nine public universities in Australia. Small elite university system.


1959 Establishment of the Australian Universities Commission (providing advice to Commonwealth Government on university funding, amongst other matters)

1956 – 1966 Universities increased from 9 to 14.

1964 Martin Report produced by Australian Universities Commission. Laid foundation for establishment of colleges of advanced education (CAEs)

1968 CAE sector extended by including provision for Commonwealth funding to teacher training colleges (previously State Government responsibility). CAEs developed into multi-purpose institutions

1968-1978 University enrolments increased by 59 per cent to 159,500. CAE enrolments increased by 242 per cent to 153,500. Public outlays on higher education increased by approximately 250 per cent.

1974 Abolition of student tuition fees by Whitlam Government. Commonwealth assumed full responsibility for university funding. State Governments continued to have large role in CAEs

1977 Australian Universities Commission subsumed into Commonwealth Tertiary Education Commission (providing advice covering universities, CAEs and TAFE)

1978 Williams Report recommended the policy of three distinct higher education sectors be continued and that future growth be directed towards CAE and TAFE

1981 Commonwealth budget resulted in rationalisation of CAEs from 81 institutions to 45

1983 University enrolments reached 166,700, CAE enrolments 171,800.

1985 Overseas Student Policy and Policy on the Export of Education Services shifted international education from ‘aid’ to ‘trade’

1986 Commonwealth Tertiary Education Commission Review of Efficiency and Effectiveness recommended retention of binary system (keeping universities and CAEs separate) and noted government funding had not risen significantly despite large increases in student numbers. This review was overshadowed by the 1988 white paper.


1988 White Paper “Higher Education: A Policy Statement” (known as the Dawkins Reforms) accepted by Commonwealth Government. It stated the belief that higher education was important in underpinning national economic growth. Created Unified National System
whereby 47 CAEs and 19 universities became 35 public universities. Set out framework for Commonwealth-State relations regarding higher education.

1989  
Higher Education Contribution Scheme (HECS) introduced, which saw university students paying contributions towards their tuition.

1991  
Council of Australian Governments confirmed Commonwealth had primary funding and policy making responsibility for universities. Introduction of the ‘Relative Funding Model’ for allocation of funds to universities.

1995  
Student enrolment (headcount) is 604,176.

1996  
Higher Education Management Review (Hoare Report) saw enhanced accountability as a key factor underpinning its recommendations on governance and strategic and financial management” (Summary of Report and Recommendations, p3)

1998  
Review Committee on Higher Education Financing and Policy (West Review) recommended student centred funding, stated priorities in research, and a world class higher education industry requiring investment in information technology and infrastructure.

2002  
Introduction of Postgraduate Education Loans Scheme (PELS) for Australian students enrolled in postgraduate fee-paying non-research programs. Commonwealth Government Review of the Higher Education System “Higher Education at the Crossroads”

2003  
Higher Education Support Act (Nelson Reforms) passed through Federal Parliament

2005  
Student enrolment (headcount) is 957,176.

2006  
Minister Bishop announcement regarding the end of the Dawkins era and the expectation for diversity, specialisation, distinctiveness and mergers.


One of the most noticeable aspects of this timeline is the frequency with which reviews of university education have occurred, and the number of times policy has changed. Leaving a policy in place long enough for the intended changes to take place and be measured for its effectiveness has not been a strength of government in relation to universities. This simply increases the importance of change-management and flexibility within universities and their staff. As the Dawkins reforms confirmed, universities are now part of the economic fabric of the country and central to Commonwealth Government economic and social policy. Change is inevitable.
2.2.2 Australian University Student Numbers

Australian university education has evolved from an elite system to a mass education system. As a consequence, a large proportion of school leavers and a large group of mature age students in the Australian population now expect to attend university. The scale of the change is demonstrated by the increase in student numbers. In 1949 the elite system had an enrolment of 31,753, of whom 64% studied full time and almost 80% were male. By 2000 Australian universities enrolled 695,485 students, of whom 57% were studying full time and of whom 45% were male. In 1950 the Australian population was estimated at 8,178,700, so the university participation rate can be estimated at 0.39%. By 2000 the participation rate had increased to 3.63% (based on an estimated population of 19,157,000).

Graph 2.1 contains student enrolment numbers that illustrate this change. Particularly pronounced is the steady, steep increase in enrolments between 1970 and 2000.

Graph 2.1 Higher Education Students 1949-2000

*Source: Higher Education Time Series Tables, Selected Higher Education Statistics 2000*

*Note CAE figures included after 1965*
2.2.3 Australian University Revenue Sources

There has been a noticeable shift in the proportion of government and non-government funding to universities over the past decade.

In 1939 State Governments were responsible for the funding of their State universities and contributed 45% of revenue into the university system. In that same year, student contributions accounted for 31.7% of revenue, with the remainder coming from investments, donations, bequests and ‘other sources’. By 1961 State and Commonwealth Government grants accounted for 80% of university revenues, with Commonwealth grants increasing to more than 40% and student contributions dropping to 8.6%.

This level of overall government support continued over the following twenty years, with Commonwealth grants increasing and State grants decreasing, until by 1981 Commonwealth Government grants accounted for over 89% of university revenues. Given this level of support, it is understandable how a culture developed that assumed the public purse would take responsibility for funding public universities. However, with a change in Commonwealth government policy in the late 1980s universities were forced to face a future with reduced Commonwealth support and growing expectations that they would earn an increasing proportion of their own income.

It was not until 2002 that non-government sources of revenue again rose to the 55% that they had comprised in 1939. By then the university system was very different from that which had operated sixty years before with a much larger scale of operation and links with a broader community. To date, investment income, donations and bequests have not reached earlier levels, and the biggest shift in source of revenue has been a return to a reliance upon student contributions to their own education. In 1939 students contributed almost 32% of university revenue, and student contributions returned to this level in 1998 via the Higher Education Contribution Scheme (HECS) and other fees and charges.
Table 2.1 quantifies the growth of fee income, particularly from Australian postgraduate and international students as sources of income over the past ten years. It shows a 372% growth in total fees and charges, with a 491% growth in income from overseas students and a 260% increase in Australian postgraduate fee income, demonstrating the emphasis that has been placed on these two markets by Australian universities. Australian undergraduate and non-award income has grown significantly since 2000.

Table 2.1: Fees and Charges / Total Revenue of UNS, 1995-2005 ($'000)

<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fees and Charges TOTAL</td>
<td>$880,403</td>
<td>$1,697,446</td>
<td>$3,277,277</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>$75,262</td>
<td>$58,317</td>
<td>$90,556</td>
</tr>
<tr>
<td>Fee Paying Overseas Students</td>
<td>$441,232</td>
<td>$947,102</td>
<td>$2,168,498</td>
</tr>
<tr>
<td>Fee Paying Non-Overseas Postgraduate Students</td>
<td>$73,769</td>
<td>$192,532</td>
<td>$191,952</td>
</tr>
<tr>
<td>Fee Paying Non-Overseas Undergraduate Students</td>
<td>$36,674</td>
<td>$103,657</td>
<td></td>
</tr>
<tr>
<td>Fee Paying Non-Overseas Non-Award Students</td>
<td>$14,668</td>
<td>$40,783</td>
<td></td>
</tr>
<tr>
<td>Other Domestic Course Fees and Charges</td>
<td></td>
<td></td>
<td>$113,598</td>
</tr>
<tr>
<td>Other Fees and Charges</td>
<td>$290,140</td>
<td>$448,152</td>
<td>$568,233</td>
</tr>
</tbody>
</table>

This is a significant driver in the push to revise university resource allocation processes, because suitable incentives need to be built into a model to provide the
motivation to grow self-generated revenue and yet also balance this earning imperative with the strategy and priorities of a non-profit education organisation.

### 2.2.4 Education as an Export Industry

As Back, David and Olsen explain in the 1996 report “Internationalisation and Higher Education: Goals and Strategies” a major shift in government policy occurred in the early and mid 1980s that affected the ability of universities to earn income, but which also shifted their internal emphasis and external image. Teaching students from overseas changed from being an ‘aid’ contribution to neighbouring countries to being an export industry.

The ‘Colombo Plan for Cooperative Development in South and South-East Asia’ was launched in 1951 providing sponsorship for international students to study at Australian and other overseas universities. In 1973 the number of overseas students permitted to study in Australia was limited by a quota system. Three years previously, however, in 1970, the Australian Government had introduced the Overseas Student Charge (initially called a ‘visa fee’). It was originally set at 10% of the notional cost of a university place, increasing to 55% of notional cost by 1988. Because international students were being subsidised by public funds, this was seen as a continuation of education as ‘aid’.

In 1984 two reports were published. The Committee to Review the Australian Overseas Aid Program (the Jackson Report) recommended that policy shift from ‘aid to trade’ and that Australia should develop an education export industry. The Committee of Review of Private Overseas Student Policy (the Goldring Report) rejected this view. It was the Jackson view that prevailed.

Since this change in policy, international student fees have become an increasingly important source of revenue for Australian universities. As the industry grew, regulation became necessary to set and maintain standards through mechanisms such as the Education Services for Overseas Students (Registration of Providers and Financial Regulation) Act (introduced in 1991 and updated since) and the AVCC’s Code of Ethical Practice in the Provision of Full-fee Courses to Overseas Students by Australian Higher Education Institutions (introduced in 1989 and revised since).
Since 1986, therefore, higher education has been viewed as an export industry, with student enrolments increasing from just over 18,000 in 1988 to over 163,000 in 2005. Australian universities now market and recruit throughout the world, most visibly in Asia. Graph 2.3 shows the number of international students enrolled in Australian higher education (not including English language programs) between 1994 and 2005.

**Graph 2.3: International Student Enrolments in Higher Education 1994-2005**

*Source: Australian Education International*

IDP Education Australia calculates that from January to December 2005 the total value of Australia’s education exports reached $7.28 billion (making it Australia’s seventh largest export industry). This value incorporates the value of education provided to international students plus the expenditure of those students while they are in Australia. It does not include the value of education provided to a student through distance education, or the value generated by the presence of an Australian resident who is teaching or lecturing overseas.” (From IDP ‘Australia’s Export of Education Services’ leaflet at [http://www.idp.com/research/statistics/ExRep05.pdf](http://www.idp.com/research/statistics/ExRep05.pdf))

No Australian university can afford to ignore the international student market, and most have become very much more professional in their marketing to prospective international fee paying students over the past two decades. In addition, many have
expanded to offer education services off-shore (the Australian Vice-Chancellor’s Committee recorded 143 separate offshore programs in 2003).

### 2.2.5 Australian Fee Paying Students

A second major area of development for universities seeking to increase their non-government revenue has been through charging for postgraduate coursework programs. Graph 2.4 illustrates the growth in student enrolments in doctoral programs (including PhD and professional doctorates), Masters by Research, Masters by Coursework and Other Postgraduate (Graduate Certificate and Graduate Diploma) qualifications. It shows clearly that Masters by coursework numbers have grown considerably faster than other categories. Masters by coursework is currently the key qualification for Australian fee paying students, and by 2005 enrolment numbers had increased to over 146,000.

**Graph 2.4: Australian Postgraduate Enrolments 1979-2000**

As noted in Table 2.1 above (p.21), fees from Australian postgraduate coursework students increased 260% system-wide between 1995 and 2005. International student revenue increased by 491% over the same period.

2.3 Budgeting

What is budgeting? Can budgets be linked to strategy in an organisation?

The previous section of the literature review examined changes to the Australian university environment, particularly with regards to revenue sources. As a result of the decrease in government funding and the need to increase self-generated revenues, universities have had to become more entrepreneurial, and their systems and processes have also had to adjust to a new uncertainty in the funding climate.

It is essential that universities have staff capable of responding to the challenges that the new environment brings. This requires people who have both an understanding of universities and the non-profit environment within which they operate, and also the business skills to manage revenue generating activities. A key system is the resource allocation model that provides the mechanism by which revenue is re-distributed through the organisation on the basis of priorities and strategies agreed by the senior management.

The resource allocation model, in the context used in this thesis, is a tool for allocating budgets to various areas of the University, and can therefore also be looked upon as a budgeting tool. The thesis makes the assumption that the user of the resource allocation model is not necessarily an accountant, but an academic manager who may not have a formal financial background. Given this assumption, some general literature on budgeting has been reviewed in order to provide a context for the resource allocation model and introduce some basic budgeting principles.

2.3.1 What is Budgeting?

A budget is defined by Hughes et al (2002, p2) as “a tool for planning, coordinating, and controlling the effective and efficient use of resources so that the organisation’s daily operations are directed towards its long term goals” while Banks & Giliberti (2003,
p2) use the definition “a formal written statement of management’s plans for the future expressed in financial terms”. These definitions illustrate the overlap of strategy, resource allocation and budgeting. In its broadest sense, resource allocation can include the provision of infrastructure and human resources as well as funding, but in this thesis resource allocation refers to funding only.

In the case study context, the budget process is the method through which an understanding of likely revenue and costs are collected from the various academic and corporate units of the organisation, and through which expenditure and earnings are tracked. The resource allocation model is a subset within the budget process (itself part of the strategic planning process) providing the means by which the expected revenues are divided amongst academic and corporate units for the forthcoming year, and outlining the rules of engagement regarding types of revenue and how they will be handled by the organisation.

Diagram 2.1: Resource Allocation Model Context

The budget process provides a common understanding of the priorities of the university because funds should flow to priority activities. These priorities may be agreed through discussion and negotiation or may be imposed, but the flow of funds will nevertheless illustrate which activities are encouraged.

The role of budgeting is variously described as planning, organising, control and motivation (Hughes et al, 2002, p2-3) and as a system of authorisation, a means of forecasting and planning, a channel of communication and coordination, a motivational device and a means of performance evaluation and control and a basis for decision making (Emmanuel et al, 1990, p162). Authorisation of expenditure is outside the scope of this thesis, but the other roles are pertinent to the resource allocation model in universities.
Forecasting and planning activities are as important to non-profit universities as for commercial companies, because without reasonably accurate forecasts universities would be unsafe making allocations to their various functions and departments.

Hughes et al (2002, p3) and Banks & Giliberti (2003, p4) have strikingly similar lists of benefits and limitations of budgeting. Advantages include setting and communicating strategic direction, providing a means for coordination of the business, efficiency, benchmarking and continuous improvement by measuring anticipated against actual. Limitations of budgeting are identified as it being a costly, time consuming process, the difficulty of forecasting accurately, creating anxiety with targets, and the potential to see budgets as inflexible.

There is some truth in these limitations because considerable time can be spent on working through forecasts to make them as accurate as possible with the information available, and in debates by senior management to decide the budget allocations after the initial model has been run. Some flexibility in the model allows strategic decisions but reduces the predictability of the process. Nevertheless, the budget process has considerable value in prompting strategic conversations and consultations for setting priorities.

There are a number of standard approaches to budgeting:

**Incremental budgets** are based on previous allocations with an incremental increase or decrease over a previous year.

**Zero based budgeting**, by contrast, disregards previous allocations and provides an allocation for a unit or group based on the estimated cost of future activities. This requires justifying expected expenditure and costs each budget cycle.

Rolling budgets (or continuous budgets) and period budgets offer other options:

**Rolling budgets** provide for a periodic updating of figures as a new incremental time period is added and a completed period is dropped.

**Period budgets** are set for a particular period.
Budget calendars within an organisation do not necessarily follow the calendar or financial years. For example, most Australian universities operate on a period budget of twelve months, with a financial year of January to December running in parallel with the academic year. This means the budget cycle is close to the strategic cycle of the organisation.

Within the budget process there are a number of different figures that need to be forecast and brought together into an overall picture, principally revenue and costs. The cost of production or provision of services can be either fixed or variable. Fixed costs are those that do not alter in relation to the amount of service being provided whilst variable costs are those that increase as production increases. In the university context, some budget items can be both fixed and variable. Salaries, for example, are both fixed and variable, where the number of permanent academic staff (fixed) may be supplemented by sessional teaching staff depending on the number of students enrolled in a particular subject in a given semester (variable).

Revenue is ‘income, especially of a large amount, from any source’ according to the Australian Oxford Dictionary (1999, p1148). In the case of Australian public universities, sources include the Federal Government, Australian and international research grants agencies such as the Australian Research Council, local and international students (either directly through fees or via Commonwealth Government HECS) and private and public companies. Universities may distinguish among types of revenue, labelling some streams as operating revenue and others as non-operating revenue (sometimes labelled extraneous), and applying different resource allocation rules for each stream. For each budget cycle, universities may estimate the number of students in each of their programs, taking into account new enrolments, progression and attrition rates and graduations. For fee paying students, the universities have some flexibility, within a competitive market, to set fee levels. In the case of Federal Government funding, however, the amount received is subject to the Government’s funding formula.

Cross-subsidising activities is more widespread in public services than in private industry (Lewis & Pendlebury 2002, p25). In non-profit organisations such as universities, decisions on what activities to support are based not only on financial considerations but also their value in terms of educational and social outputs. Lewis & Pendlebury (2002, p27-29) observe that “the traditional ethos of higher education pays little heed to the profit motive” but that in an era of more accountability and
performance measurement, universities “need to balance the objectives of education achievement with the objective of satisfactory financial performance. In terms of cross-subsidy, the issue then becomes associated with defining the point at which the financial cost may be regarded as too high to justify in relation to the social benefit”.

Further examination of cross-subsidies in universities will occur in the case studies presented later in the thesis.

2.3.2 Budgeting and Behaviour

Within an organisation, budgets drive behaviour. As Facione (2002, p3) notes, “A well-designed budget will manifest an institution’s core mission, its distinctive character, and its strategic goals. In teaching, what you grade is what you get; in institution building, what you fund is what you get”. Therefore the design of a budget process and the resource allocation model is an essential element which influences outcomes.

Banks & Giliberti (2003, p191) note that there are two ends of a continuum with regards to behavioural aspects of budgeting: authoritarian and ‘bottom-up’. Maslow’s theory on human motivation (that motivation comes from within a person and cannot be imposed from without) encourages a bottom-up participation in the budget process so that targets and goals are owned by staff in the organisation. This contrasts with the authoritarian approach where the top of the organisation makes budget decisions with little consultation with staff lower in the hierarchy.

Emmanuel (1990, p163) notes that in order to act as motivators, budgets need to provide stretch targets, but if variances are treated as failures then this will lead to a lack of motivation and an element of caution in forecasting. There is therefore a tension between the forecasting, controlling and motivating roles of budgets. Resource allocation models can be used to drive behaviour. For example, by providing higher return-to-earner rates on particular categories of revenue, the message is received that it is worth pursuing those revenues that will return the most to their own areas.

One of the chief concerns with the traditional budgeting model is that managers will ‘play games’ with figures to produce a better result for themselves and their departments, perhaps by manipulating data fed into the budget process resulting in more favourable targets or allocations. This can lead to dysfunction within the
organisation, which is likely to result in the organisation losing ground in its marketplace as staff spend more time concentrating on internal manoeuvring than the external environment.

In this context it is instructive to examine the work of Hope & Fraser (2000, 2003), who challenge traditional budgeting, to see whether their ideas are applicable in the university context. Hope & Fraser (2003, p3) propose a ‘beyond budgeting’ model, arguing that at a time when companies are rejecting “centralisation, inflexible planning, and command and control”, they should also be looking for a less rigid form of managing financial resources. They argue that devolving authority to the company’s front line will improve its performance because that is where expertise can be found and where people have the best understanding of the requirements of customers. Moving to performance measures that go beyond financial measures allows organisations to focus on improving their core business and standing amongst a range of stakeholders, including customers, rather than concentrating on monthly, quarterly or annual financial reports for shareholders. Focusing too much on short-term financial reports is not necessarily the best strategy for growing a business. Not making financial performance commitments to stakeholders “shifts the emphasis from meeting short-term promises to improving our competitive position year after year”.

“To create new wealth, firms need both the benefits of effective devolution (such as fast decision making) and the benefits of effective performance management such as fast, open and relevant information” (Hope & Fraser 2000, p35).

They propose ingredients for a company that include:

- Governing through shared values and clear boundaries
- Creating as many autonomous profit centres as possible
- Coordinating the organisation through market forces
- Providing front-line managers with fast and open information networks
- Giving managers the freedom to act and the responsibility to deliver results
- Giving managers the training and tools to think and act decisively.

“In the beyond budgeting model, an effective performance management system should be aimed at supporting self-governing business units. Its principal features should include”
• targets
• effective anticipatory management systems (including rolling forecasts)
• a rolling strategy process
• an investment management process
• distributed controls aimed at supporting front-line managers
• rewards based on relative performance.

As students from the Harvard Business School point out (Salib & Evans 2003), traditional budgeting can also be flexible, motivating, and reflect an organisation’s values, as long as it is seen as a strategic as well as management control tool.

In agreeing with the students, this author notes that because universities are non-profit making organisations they do not have anxious shareholders watching stock prices or awaiting dividends. However, in rejecting the ‘beyond budgeting’ idea, this author notes it nevertheless highlights that budgets are a means to an end rather than the end game themselves, and it is important for the health of any organisation to maintain focus on core business as well as maintaining a sound financial system.

The debate on budgeting and ‘beyond budgeting’ illustrates that budgeting plays a key role in both strategy and in management control. How the process is handled is a reflection of the culture and practices of a company or non-profit organisation, and, where the culture is in favour of honesty and transparency, the budget process can be a valuable tool in setting and maintaining the short term and longer term direction of that organisation.

The resource allocation model, as a subset within the budget process, should also reflect the strategy of the organisation, and ensure that the strategy is reflected in the budget allocations received by the various areas of the organisation.
2.4 Resource Allocation Models

What options are available to universities when considering resource allocation models?

This section examines literature on resource allocation models in universities. It provides an overview of the evolution of resource allocation models, including in the Australian context, and notes how choice of model can affect the strategic capabilities of an organisation.

There appears to be little work published regarding 'second tier' allocations in Australian universities now that they are becoming more reliant on self-generated revenues. That is, how do academic managers make allocations at the faculty or equivalent level? Most of the literature explains resource allocation models operating at either the system or institution level; that is, explaining the basis on which governments allocate funding across public institutions, and how universities operate at the top level, moving funding between faculties or divisions and the senior management. What literature there is on allocating funds within faculties is not based on the Australian context. Yet this is a crucial area for all universities. As Liedtka (1998) notes, it is the everyday decisions taken at lower levels in an organisation that determine whether it stays on its strategic track and achieves the results the senior management is aiming for.

In most universities, the heads of faculties and schools are appointed from within the ranks of academics, people with considerable expertise in their own discipline but not necessarily with skills or training in management. Consequently, research that results in practical advice to academic managers grappling with the various methods of resource allocation at that second level will be useful.

This section examines literature on resource allocation models at the organisation level, and two broadly contrasting methodologies are described, touching on some of the strategic decisions surrounding the options. It examines practices outside the Australian context, particularly in Europe and North America, in order to draw out what Australian universities can learn from those experiences.
2.4.1 Background

Schroeder (1973, p896), writing on management science in university operations, notes the large volume of literature available to him on planning, programming and budgeting systems (PPBS). He also noted “there have been no successful ongoing applications of a comprehensive PPBS”. In the vocabulary of the day, the resource allocation model was used not for financial allocations but instead it calculated staff workloads, space and equipment needs based on predicted student demand for courses.

Shifts in government funding regimes and accountability (Burke & Modarresi 2000, Field & Klingert 2001, Watts 1996), help to explain why resource allocation models have become important financial tools in universities in Australia and overseas. The shift from elite to mass higher education systems over the past twenty years in Europe and North America as well as in Australia has led to national governments attempting to reduce university dependence on government funding. At the same time, pressure for governments to be accountable for the spending of public monies has led to increased accountability for organisations receiving public funding.

Field & Klingert (2001, p83) suggest that the introduction of a resource allocation model into a university is likely to be the result of pressure from internal management, user wishes or external sources. The definition of external sources includes the substantial changes in government policy that have occurred in Europe, North America and Australia, “including the shifts from line-item to lump-sum budgeting, from central control towards decentralisation and from emphasis on inputs towards emphasis on output”.

Related to the funding change is a shift in accountability from accounting for expenditure of government funds to performance reporting and performance-based funding, from promising results in exchange for funds to receiving government funds based on achieved results (Burke & Modarresi 2000, p433-434). Field & Klingert (2001, p84) argue that as universities are rewarded by government for research or teaching successes, they are “under pressure to pass on those rewards to the departments which earned them, and a resource allocation model offers a clear means of explaining policy.”
In some universities, funding changes have been substantial. For example, until 1983 the University of Twente in the Netherlands received three separate government grants for staff costs, running costs and infrastructure, all of which were allocated for one year with surpluses returned to government at the end of each financial year. By 1993 the system had changed to a normative formulae-based block grant (Schutte 1994, 1998). This required a major change of internal systems, because rather than being told how to spend its government funding, the University of Twente had to make its own decisions on how to allocate funds to its various activities. It needed a system for allocating those funds that was defendable to both its internal constituents and the government supplying the funding. It needed to become more astute in funds management and in managing deficits and surpluses because these could now be transferred across financial years, and it needed to understand clearly the formulae on which its funding was based in order to maximise government allocations.

In 2000, a survey by the Heads of University Management and Administration Network in Europe (HUMANE) found 80% of member universities used some kind of resource allocation model, defined as “a means by which institution funds are distributed according to pre-set criteria”. In most universities the model was applied to discretionary funding, and not to specific-purpose funds such as research grants (HUMANE 2000, p2).

2.4.2 Australian Context

As Watts (1996) explains, there were major changes in the higher education environment in Australian in the 1980s with the amalgamation of many small institutions and the creation of the Unified National System (UNS) from the previous binary system. 1989 was a critical year: the UNS was established, the Higher Education Contribution Scheme was introduced and most amalgamations were completed. 1989 also saw the introduction of a new Federal Government funding formula for universities.

Previously, the two groups in the binary system, the universities and the colleges of advanced education (CAEs), had been funded differently. CAEs received federal allocations according to a known formula, and often this formula was replicated in internal resource allocation models. The basis for each university’s allocation, however, was never revealed by the Commonwealth Tertiary Education Commission
(CTEC) and this lack of transparency carried into internal allocation processes. Despite the ideal of collegiality, in reality politically powerful factions tended to dominate budget allocation committees and, therefore, allocation decisions (Watts 1996, p55).

A new federal funding formula was also brought in. The Relative Funding Model (RFM) was introduced to underpin the aims of the UNS, but it did not dictate the methods universities should use to disburse their federal allocations. “In fact, the Commonwealth made it explicitly clear that the RFM should not be used for internal fund allocation, as it had been developed to be used once (in 1990) at the system level only to broadly equalise funding inadequacies and, as such, did not take account of the complex nature of particular institutions” (Watts 1996, p56). However, Gawthorne (cited in Watts, 1996) discovered in a 1993 survey that 86% of responding universities used key elements of the RFM for their own internal resource allocation. It seemed likely this was because the RFM was transparent, rational and helped universities to comply with increased reporting and accountability requirements (Watts 1996, p65).

Watts (1996) argues that dependence on federal government funding leads to universities linking internal resource allocation formula with the federal funding model. It may then be argued that the reduction of federal funding as a proportion of university operating revenue may also lead to a decreasing reference to the RFM in university resource allocation models. At least three universities, University Beta in 2005, Monash University in 2003 and the University of Western Sydney in 2002, have changed their resource allocation models in recent years. The University of Western Sydney change resulted from a reorganisation of the institution from a “loose federation of three semi-autonomous institutions” into one unitary university and aimed to “facilitate this integration and to reinforce the strategic goals of the university” (Johnston 2002, p1).

2.4.3 Resource Allocation Methodologies

A number of elements have been identified as important to consider when designing a useful resource allocation model, including strategic fit, transparency, incentives and rewards and reliability and predictability (Field & Klingert 2001). The literature describes a range of models used with a number of different methodologies (for

They can be summarised into a number of approaches along a continuum from fully centralised to completely decentralised.

In discussing these models the extent of decentralisation or centralisation are features that need to be described. These concepts, however, can refer to two different aspects of a model:

1. The movement of revenue.
   - Decentralised - revenue is first credited to the profit centre that earned the revenue, from which transfers are made for central costs or cross-subsidies
   - Centralised – revenue is received initially at the centre, then allocated to the academic and operating units on whatever basis the institution has agreed.

2. Financial Responsibility and Accountability
   - Decentralised – unit managers receive a one-line budget and are responsible for delivering agreed outcomes within that allocation. Deficits and surpluses normally remain within the unit, and the unit manager makes decisions on staffing, equipment and other costs within their allocation.
   - Centralised – financial management occurs at the centre, and unit managers may have little or no responsibility or accountability for financial decisions. Rather than budgeting for new staff or equipment, they must request these from the centre.

Table 2.2 summarises some of the key authors and their allocation options.
### Table 2.2: Resource Allocation Methods and Authors

<table>
<thead>
<tr>
<th>Authors</th>
<th>Centralised</th>
<th>Decentralised</th>
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<tbody>
<tr>
<td>Geiger (2003)</td>
<td>A “value-outcomes” model in which performance measures are coupled with decentralised control to steer unit behaviour.</td>
<td></td>
</tr>
<tr>
<td>Priest et al (2002)</td>
<td>Incentive-Based Budgeting</td>
<td>Incentive-Based Budgeting</td>
</tr>
<tr>
<td>Rodas (2001)</td>
<td>Incremental Line-item Budgeting - Quantitative Modelling, Mathematical Decisions Models, Formula Budgeting</td>
<td>Block allocation budgeting - “Departments negotiate with the central administration about the size of the departmental budget and the objectives which the department will aim to deliver.”</td>
</tr>
<tr>
<td>Johnes (1999)</td>
<td>Line-item budgeting - “where the entire budgeting process is centralised”.</td>
<td>Responsibility centre budgeting – “Departments keep the income they generate… and have discretion to spend this revenue as they see fit… Central services… are funded by a top-slicing overhead charge on departments.”</td>
</tr>
<tr>
<td>Ehrenberg (1999)</td>
<td>Central control – all revenue … flows directly to the central administration which covers central costs and then allocate some portion of the remaining revenue back to the colleges.</td>
<td>Tubs with a Franchise Fee – “the colleges are treated as ‘tubs’ on their own bottoms but they remit more than their allocated share of central costs to the central administration… This ‘franchise fee’ is then allocated back to colleges at the discretion of the central administration and/or through some priority setting process.”</td>
</tr>
<tr>
<td>Massey (1996)</td>
<td>Values Responsibility Budgeting</td>
<td></td>
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Several authors appear to have similar but differently named alternatives, particularly at the decentralised end of the spectrum as these are the more complex models where greater variation occurs.
Ehrenberg’s (2000) results provide an indication of the prevalence of these different approaches in universities in the USA. 92% of the public research and doctoral universities surveyed (n=127) used a central control methodology. 63% of private research and doctoral universities surveyed (n=71) used a central control methodology and 24% ‘tubs’ (without a franchise fee). A similar survey of Australian universities was conducted by Jeff Gawthorne in 1993, but the results were not published and a direct request to the author was unsuccessful (the survey was, however, cited in Watts, 1996).

Dickson (1999, p24), in a guide produced by the Commonwealth Higher Education Management Service UK, provides detailed advice and a clear summary of issues universities need to consider when deciding on what methodology to adopt, including:

- “The method to be applied must match the university’s strategy/philosophy, particularly relating to devolution and the provision of incentives.
- The data available must be of good quality and produced in a timely manner.
- The budgets must be acceptable to, and owned by, the budget holders with clear accountability and responsibility being accepted.
- Any parameters must be clearly laid out and understood by all, together with any rules on virement (note: the transfer of items from one financial account to another.) The resource allocation process itself should be as transparent as possible with no hidden reserves or secret allocations.”

Massey (1996, p4-5) states there are three keys to effective resource allocation:

- understanding the system of incentives that guides spending in colleges and universities (balancing intrinsic values and instrumental values).
- recognising and managing the diversity of intrinsic values that abounds within any higher education institution.
- managing complexity.

He also notes Bowen’s Law that “universities will raise all the money they can and spend all the money they raise”. Therefore, he says, (p6) “resources should be invested according to the so-called high-assay principles… In colleges and universities, high-assay means quality relative to institutional mission, vision and goals, delivered as productively as possible.”
Advocating decentralisation, Massey (1996, p5) argues that centralisation can disempower those who represent the institution’s core competencies, undermining the incentives for productivity improvement and making accountability for such improvements impossible. He highlights a key question of “how to decentralise budget-making authority without abandoning institution-level values and priorities – that is, of unleashing the expertise and motivation residing in schools, departments, and faculty without losing the funding agent’s ability to influence outcomes”.

He does not support incremental line-item budgeting noting that “after a period of time, operating units tend to assert ownership of base funding levels and come to view most of their costs as fixed.” (p6), and noting that their traditional systems do not cope well in times of complexity and rapid change.

Massey (1996, p30-31) argues there are three assumptions that have become principles, and therefore affect the quality of decision making:

1. The property-rights principle means that the purchasing power of the existing budget base should be protected as a first priority and that reductions can be imposed only after due process.
2. The second assumption holds that academic units are too fragile and their work too important to be disrupted by the hurly-burly of the marketplace.
3. The third assumption holds that the central administration should take responsibility for the financial health of the academic units.

“The three assumptions transform resource allocation from an exercise in investment, where scarce resources are put to the best possible uses, to an exercise in coping and conflict management.”

It is important to understand that the fundamental choices a university can make are in relation to the design of its resource allocation model. Should the model be central or decentralised? Should the university work on incremental budgets, assuming that previous allocations are a reasonable basis for future allocations, or should it work on zero-based budgeting principles and ignore previous allocations when making decisions about the future? In order to make these decisions, the senior management of the university should understand the strategic implications of their choices.
2.4.4 Strategic Implications

A resource allocation model is a tool for policy and strategy. “It must always be remembered that a resource allocation model is not neutral. It contains a number of basic assumptions regarding what is important and what is not important at a particular university” (Field & Klingert 2001, p84). Jarzabkowski (2002, p5) examines the strategic implications of resource allocation models, identifying four aspects of resource allocation:

- degree of centralisation
- locus of strategic direction
- cross-subsidy
- locus of control.

Analysis suggests that different models have particular strategic implications for the institutions using them, particularly the degree of centralisation. Awareness of the possible effects of the resource allocation model employed could assist an institution in building or amending its model. Jarzabkowski (2002, p7) proposes a comparison of centralised and decentralised models in terms of their impact on university strategy:

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Centralised</th>
<th>Decentralised</th>
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<tbody>
<tr>
<td>Strategic Directions</td>
<td>• Longer-term strategies</td>
<td>• Existing strengths</td>
</tr>
<tr>
<td></td>
<td>• Higher overarching strategic</td>
<td>• Higher departmental strategic</td>
</tr>
<tr>
<td></td>
<td>direction</td>
<td>responsiveness</td>
</tr>
<tr>
<td>Cross-Subsidy</td>
<td>• Greater cross-subsidy</td>
<td>• Lower cross-subsidy</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>• At the centre</td>
<td>• Departmental Heads</td>
</tr>
<tr>
<td></td>
<td>• Bids for central resources</td>
<td>• Budgetary performance indicators</td>
</tr>
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</table>

In her study Jarzabkowski (2002, p7) defines a centralised resource allocation model as “one in which resources are allocated by the senior management team from a central pool on a zero basis” and decentralised as “departmental control over budgets, with responsibility for their own strategic direction, income-generation and financial viability”.

Common problems with centralised systems (Jarzabkowski 2002, Geiger 2003) include the lack of connection between revenue, budget allocation and expenditure in departments and faculties, and the resulting lack of incentive to earn increased revenue or reduce expenditure.
A serious problem with decentralised models is the lack of capacity for driving strategic direction from the centre of the organisation. This is particularly a problem during times of change. Ansoff (cited in Hussey, 1999) developed an idea that the degree of change and turbulence that different companies faced created the need for a range of strategy responses. For example, a stable, repetitive environment could accommodate a precedent-driven, bottom-up approach to strategic planning. On the other hand, he advocated stronger top-down strategic planning in a ‘discontinuous’ environment (some aspects discontinuous, others predictable). Jarzabkowski (2002, p17) notes that in a decentralised resource allocation system “the top team managed to generate financial support for strategic actions by convincing interested parties of the desirability of these actions, so gradually building momentum. Unless senior management are skilled negotiators operating in an environment of trust and transparency, this approach could slow down strategic change.”

Jarzabkowski’s analysis suggests that a centralised resource allocation model is more in keeping with one of the key components of an entrepreneurial university, the ‘strengthened steering core’ (Clark 1998). The University of Warwick serves as a case study in both the research on the implications of resource allocation models undertaken by Jarzabkowski and the identification of entrepreneurial universities by Clark. The University of Warwick’s resource allocation model is characterised by being the most centralised of Jarzabkowski’s three case studies, with the senior management of the university centrally controlling strategic direction. The system provides for a high level of cross-subsidy and a central locus of control. Profit sharing encourages compliance.

By developing a set of shared principles and an understanding of strategic direction before deciding on a resource allocation model, the trade-offs necessary in designing a model for an institution operating with scarce resources can be ameliorated (Johnston 2002).

2.4.5 Case Examples

In order to understand some of the options and decisions surrounding resource allocation models, some examples are examined briefly.
The University of Western Sydney underwent a restructure in 2001, and introduced a new resource allocation model in 2001 (Johnston 2002). The new model gathered four types of income for allocation: government-funded operating grants; fee income from on-shore international students and Australian fee-paying students in award programs; levies on off-shore non-award, consulting and entity income; and other miscellaneous income. This income was then allocated to academic units on a 73% / 27% split between actuals (student load) and performance incentives (9% in each of three categories: academic quality and efficiency, research and onshore fees). By adding a clause that limited the growth in allocations for support units, the university emphasised the strategic importance of its academic units. Incentives were provided by guaranteeing a minimum rate of return on student fees to the academic units.

This model demonstrates how different types of revenue can be treated differently. While award course income went to the centre and was then allocated to the academic units, non-award income went directly to the academic unit which then paid a contribution (in this case between 15% and 30%) to the centre.

At the University of Strathclyde, another of Clark’s (1998) case study universities, a change in budget model to a decentralised system was accompanied by a change in organisation structure, so budgets could be devolved to suitably large academic units. In this example, four major faculties were created to which revenue was credited. A second step in the restructure was to retain some of the budget for a central strategic fund (Clark 1998, p67).
2.5 Corporate Entrepreneurship – Creating the Entrepreneurial Mindset

What does an entrepreneurial university look like? What are the traits of entrepreneurial organisations?

Understanding how to create an entrepreneurial mindset in a mature but evolving organisation is an important step towards achieving a university’s goals, which often includes reducing reliance on public funding. As noted on the University website, the Vice-Chancellor of the University of Melbourne now calls his organisation ‘public spirited’ rather than a publicly funded organisation. Entrepreneurial universities became the buzz word in the 1990s so this section examines entrepreneurship in the university context.

Universities in Australia have already made major changes in their cultures. The international education industry in Australia illustrates the changes that have occurred. Prior to the mid 1980s international education was considered principally ‘aid not trade’. In 1985 the Commonwealth Government introduced a new Overseas Student Policy that allowed universities to enrol overseas students in addition to the subsidised quota, without numerical limits, provided the students met the institutions’ entry requirements and paid the full cost of their courses. The Policy on the Export of Education Services followed, facilitating overseas fee-paying student recruitment.

In 2005 education was a major Australian export industry valued at over $7 billion annually. The international student market has matured, and international education is now an important activity for most Australian universities. But events such as SARS and the war on terror are a reminder of the risks of being too dependent on one source of revenue. The challenge is to diversify the funding base of universities, and a key element in this is to create an entrepreneurial mindset amongst staff, so they have the skills to recognise and pursue opportunities, and a system that allows them to do so.

There is no single answer to creating an entrepreneurial mindset in a mature organisation, but that there are a number of ingredients that can be brought into the mix.
2.5.1 Defining Entrepreneurship

In this thesis ‘entrepreneurial’ is used in an encompassing sense rather than one particular sense. Some authors provide a tight definition, classifying ‘entrepreneurial’ as the development of new product lines, others use entrepreneurship and innovation interchangeably to examine the creative side of an organisation, that is, providing it with ideas to take it into the future. Jennings & Lumpkin (Jennings 1994, p204) define it as the extent to which new products and / or new markets are developed.

There is also intrapreneurship, which Kuratko et al (1993) define as “entrepreneurial activities that receive organisational sanction and resource commitments for the purpose of innovative results”, whereas Nielsen et al (1985) define intrapreneurship as “the development within a large organisation of internal markets and relatively small and independent units designed to create, internally test market and expand improved and / or innovative staff services, technologies or methods within the organisation.”

In this thesis, ‘entrepreneurship’ is used in a broad sense as innovation and “the willingness of an individual or organisation to embrace new opportunities and take responsibility for effecting creative change” (Morris & Jones 1999, p73). The thesis does not examine corporate venturing.

2.5.2 Is Entrepreneurship Really Necessary?

It seems generally accepted that entrepreneurship is necessary in organisations of all sizes and types when they are facing a changing environment, and less necessary if operating in a stable one. Given the changing environment in which universities are currently operating (from the Dawkins Reforms of the late 1980s to the changes introduced with Nelson’s Higher Education Support Bill 2003), an entrepreneurial outlook is important.

Organisations can be proactive about creating the conditions under which entrepreneurship can occur. Waiting passively for entrepreneurship to happen of its own accord will result in disappointment.

There are three key areas on which organisations seeking to become more entrepreneurial should focus:
• A leadership and management suitable to entrepreneurship
• Systems that allow entrepreneurship rather than inhibit it
• People with entrepreneurial skills.

2.5.3 Leadership And Management

A major factor in successful organisational entrepreneurship is its leadership and management. Van de Ven (1986) suggests that the leader needs to enact at least four roles: sponsor, mentor, critic and institutional leader.

Various authors provide advice to managers about how to manage for an entrepreneurial culture. Sathe (1989), for example, provides nine key points for a process for promoting entrepreneurship in large organisations:

1. Consider ‘knowledge of territory’ and ‘benefit of contrast’ when moving managers around
2. Selectively hire new managers from the outside who know a product, market or technological territory of interest
3. Play up and promote the company’s own success stories and champions
4. Don’t penalise for failure
5. Heighten visibility of results and keep top management well informed
6. Bet on people who know their territory, rather than on formal analysis or your own judgement of the attractiveness of the opportunity
7. Use supportive challenge to test the entrepreneur’s conviction and to help uncover his or her blind spots
8. Use betting rules to contain entrepreneurial risk
9. Ask for additional contributions and budget cuts without calling the shots on specific ventures.

Rule & Irwin (1988) by contrast, offer six areas for managers to focus on when developing an entrepreneurial culture:

1. Generate new ideas
2. Screen new ideas to allocate resources
3. Support idea development
4. Encourage flexibility
5. Reward the contributors
6. Provide leadership.
And McGrath & McMillan (2000) also offer nine pointers to ‘managing with an entrepreneurial mindset:

1. Develop insight into the customers’ behavioural context
2. In an entrepreneurial mindset, everybody plays
3. Experiment intelligently
4. Exercise discipline
5. Spend imagination instead of money
6. Framing is crucial to the entrepreneurial leader
7. Be ruthless with respect to priorities
8. Using fuzzy measures early on is better than using precise ones too late

Kuratko et al (1993, p28) argue that “In order to implement entrepreneurial thinking, today’s managers need to recognise newly developing strategies, assess the corporation’s climate of readiness, and reinforce behaviour with effective rewards”. The advice provided by these authors is that the manager’s aim is to create a climate conducive to corporate entrepreneurs. Elements identified as critical include the presence of explicit goals, tolerance of failure, a system of feedback and positive reinforcement, an emphasis on individual responsibility and rewards based upon results.

Managers need to think about their philosophies for management, and identify and understand obstacles to entrepreneurship and then reduce them, Kuratko (1993) says. Increasing efficiency is not enough, they also need to change cultures and values. His advice to managers includes:

- An early identification of potential intrapreneurs
- Top management sponsorship of intrapreneural projects
- The creation of both diversity and order in strategic activities
- Promotion of entrepreneurship through experimentation
- Development of collaboration between entrepreneurial participants and the organisation at large.

Translating all the advice into practical strategies and implementing them successfully is the challenge for managers.
Creating a culture where ideas are not only welcomed in theory but are acted upon, and allowing people to build up a base of expertise that provides a launch pad for innovation appear to be crucial to the leadership role. Whilst leaders may not themselves be innovative or particularly entrepreneurial, they nevertheless have a vital role to play in creating the environment where innovation can exist.

2.5.4 Staff and Entrepreneurship

Declaring an entrepreneurial strategy and goal for an organisation is simple enough. Ensuring senior management backing can also be relatively straightforward, assuming reasonable harmony at senior levels in the direction of an organisation. Encouraging staff to have an entrepreneurial mindset, and translating this into real change, are more difficult.

Again, there is plenty of advice. McGrath & McMillan (2000) explain how to recognise a staff member with an entrepreneurial mindset – it is someone who passionately seeks new opportunities, pursues opportunities with enormous discipline, pursues only the very best opportunities, focuses on execution and engages the energies of everyone in their domain.

Sinetar (1985) poses the question whether creative people really can survive in large organisations. As George Brown, the late Lord Mayor of Darwin, was fond of saying, “it’s the cranks who turn the wheels of progress”. But large organisations are not always tolerant of their cranks and eccentrics. Sinetar (1985) says there are two types of creative entrepreneur, the activist and the creative thinker. The activist is more suited to working in an organisation because “This person’s thought processes – the steady, incremental way of thinking, doing, communicating – fit into and naturally complement the core of organisational life.” By contrast the creative thinker is “more like an artist or inventor…For the creative thinker, problems are sorted out in a stylised, unpredictable, and often disorganised manner…As managers they frustrate and surprise people in their departments; as employees they don’t conform”.

Sinetar (1985) suggests that organisations can sustain creative talent by knowing who the creative people are in an organisation and understanding the opportunities that exist for them and the barriers that are placed in their way. Being a manager of entrepreneurs means ensuring that bureaucratic barriers are minimised, and that there
is some protection for risk takers. He suggests that involving a range of people, rather than just managers, in decision making empowers people, and that encouraging independent thinking and rewarding rather than punishing creativity, help to develop a more entrepreneurial mindset in a workforce. Ensuring that people have time to think is crucial.

3M is often used as an example of an entrepreneurial company. It has established a culture whereby staff are expected to be innovative and, importantly, are expected to spend a certain amount of their time pursuing opportunities. This experience illustrates that the system within which people work needs to be flexible enough to accommodate some exploration by staff of opportunities, not just certainties.

Hamel (2001, p4) also advocates managers building innovation and entrepreneurship from within rather than relying on outsiders and consultants to provide advice on what a company should be doing. He says “ultimately a company cannot rely on outsiders to generate the fundamental perspective on what new strategies, new growth trajectories and new experiments they should conduct. That has to come from the sweat, blood and imagination of the people in that organisation.”

A large organisation that wants to change its culture needs to be proactive in encouraging that change. Simply declaring a goal is not enough. Staff may be willing to take on an entrepreneurial mindset, but lack the skills to actually harness their ideas and bring them to fruition. Some opportunity, therefore, has to be provided to learn how to be entrepreneurial. There is an argument about whether entrepreneurs are made or born. Either way, if a large number of people are let in on some of the key skills entrepreneurs need, then a company is increasing the pool from which innovative ideas might arise. In some cases the learning might fall on stony ground, but providing training has the two-fold advantage of uncovering some genuinely entrepreneurial staff, and educating other staff about the type of organisation management is wishing to develop, and how they can contribute in less direct ways.

Hamel (2001, p7) suggests how a staff member in an organisation can get an idea off the ground. His eight steps for starting a bottom-up revolution are:

1. Build a point of view
2. Write a manifesto
3. Create a coalition
4. Pick your targets and pick your moments
5. Co-opt and neutralise
6. Find a translator
7. Win small, win early, win often
8. Isolate, infiltrate, integrate.

These steps make sense – getting people on side and picking the ideal moment to pitch an idea are crucial elements, as is some demonstration of success.

2.5.5 Entrepreneurial Systems

Hamel (2001) argues that companies should recognise that not all good ideas come from the top of an organisation, and indeed foolish ideas that come from the top may receive attention because of the position of those advocating them, whilst ideas from the shopfloor have to be well thought through because their proposer may need to explain and sell the idea over and over before it reaches a level of influence. This sounds like common sense, but requires a system whereby good ideas can indeed move to a point where decisions can be made whether to resource them.

Hamel uses the analogy of quality. Quality has moved from the realm of the expert to something for which everyone in an organisation is responsible. So, Hamel says, it should be for innovation and entrepreneurship. They are not mystical attributes that employees can glance towards occasionally, instead they should be seen as a capability. However, he does acknowledge that entrepreneurship and innovation cannot be entirely systematic.

The challenge for large organisations is to be as innovative and manoeuvrable as small companies. Hamel (1999) uses the Silicon Valley example to suggest how companies might manage with the conflict between large size and quick responses. He advocates a shift from resource allocation to resource attraction, arguing that Silicon Valley has three interconnected markets: “a market of ideas, a market for capital and a market for talent...Resource allocation is about managing the downside. Resource attraction is about creating the upside”. It is about balancing the risk but also unleashing ideas. This needs an “amalgam of disciplined resource allocation and impromptu resource attraction. Hierarchies and markets must coexist” (Hamel 1999, p75).
Using the Silicon Valley model, Hamel suggests that to create an entrepreneurial system rewards and incentives need to be put in place, there needs to be more than one way of getting ideas up, and there needs to be acknowledgement that good ideas can come from any level of the organisation, not just from the top. An organisation needs to be able to talent spot talent from within its own ranks, and be comfortable with a level of inconsistency and flexibility rather than bound by strategy. He concludes that large organisations can be entrepreneurial, “if they can learn how to supplement risk-averse resource allocation with opportunity-focused resource attraction” (Hamel 1999, p84)

Von Hippel et al (1999) outline the 3M ‘lead user’ system, a systematic way of asking for ideas from people and organisations on the cutting edge. The system centres on establishing good relationships with the users of 3M products, and then systematically asking them for ideas and innovations that would help them in their work. It is an acknowledgement that cutting-edge ideas often come from users rather than manufacturers. 3M found that, rather than their end users wanting to keep their ideas to themselves and develop competitive advantage from them, they were happy to share ideas. Normally the end users were not direct competitors but came from other fields and industries, and simply wanted something developed.

Other companies put forward as best practice include Shell’s Gamechange initiative (Hamel, 1999) and Virgin, which Hamel claims has become a branded venture-capital company by creating a culture that expects people to come up with business ideas, and gives them a chance to speak up about those ideas.

Sherwood (2000, p35-36) advocates a system of “the unlearning organisation where “the existing component parts are bundled together in learning, knowledge and experience that must first be broken apart before a new pattern can be discovered”. He concentrates on promoting idea generation, and how a deliberate system can enhance the process. “Before new ideas can be generated, old ideas have to challenged.” He lists twelve features of the unlearning organisation, in that they should:

1. Make time to think, explore and innovate
2. Look for better ways of doing things even without an identified problem
3. Rules are for breaking / rules are constantly under review
4. Distinguish negligence from learning
5. Listen
6. Share  
7. Say yes more than no  
8. Don’t rush to judge  
9. Have a wise approach to managing risk  
10. Performance measures support innovation rather than discourage it  
11. Good at managing both the line and projects  
12. Don’t force closure.

2.5.6 What Does an Entrepreneurial Organisation Look Like?

In aiming to become an entrepreneurial organisation it is useful to have some pointers to recognising one. Prather (1996) suggests it is possible to quantify the climate for innovation, noting nine defined dimensions of the climate for innovation:

1. Challenge (How challenged, emotionally involved, and committed are employees to the work)
2. Freedom (How free is the staff to decide how to do their job?)
3. Idea time (Do employees have time to think things through before having to act?)
4. Idea support (Are there resources to give new ideas a try?)
5. Trust and openness (Do people feel safe speaking their minds and offering different points of view?)
6. Playfulness and humour (How relaxed is the workplace—is it okay to have fun.)
7. Conflicts (To what degree do people engage in interpersonal conflict or ‘warfare?”)
8. Debates (To what degree do people engage in lively debates about the issues”)
9. Risk-taking (Is it okay to fail?)

His belief is that there is consistency in the areas in need of attention in many organisations. “The dimensions in greatest need of improvement were: risk-taking, idea time, idea support, and trust and openness. Much less in need were: debates, absence of interpersonal conflicts, and playfulness and humour. Challenge and involvement and freedom were in good shape. You can see that dimensions in greatest need for improvement lie in each of the three arenas.”
2.6 Budgets, Power and Strategy

What are the links between allocation and strategy? How does institutional power affect allocations?

2.6.1 Strategic Planning

The development of strategy for organisations has crystallised into a number of different schools of thought. Mintzberg et al (1998, p6) divides the schools into three categories, grouped around prescriptive, descriptive, and configuration. As the names of the groupings suggest, the prescriptive schools attempt to outline how strategy ought to be arrived at, suggesting models which organisations could adopt and which, if applied correctly, should lead to the formation of strategy appropriate to the organisation. The descriptive schools concentrate on describing how organisations actually develop strategy, observing and relating processes and analysing those processes to understand what has already happened rather than dictate what ought to happen. The learning comes from a retrospective examination of what has occurred rather than trying to control how strategy is developed. The third classification, although Mintzberg et al have only one school within this category, is the configuration approach, which, it is suggested, takes elements from all the other schools and integrates them into an approach appropriate to stages in the life-cycle of an organisation.

At different times over the past several decades different schools have taken centre stage. Popularity ebbs and flows both in practical and academic environments as different schools become prominent or fade into the background, to be replaced by a new trend.

This section examines some of the difference strategic planning schools developed by three key authors, Porter, Ansoff and Mintzberg. The following section then examines how later authors have expanded strategic planning to encompass the idea of strategic thinking, adding value to the original school.
Strategic Planning Theories

The planning school was an influential school of strategy from the 1960s until the 1980s. It is a methodical, structured approach to strategy which enjoyed a great deal of popularity in its time, but which declined in influence and which has now evolved beyond its original boundaries. It advocated a separation of chief executive officer and strategic planners, and a framework within which information and data could move up the line and decisions and strategy move downward. The planning school is most easily remembered for the precise systems it suggested for organisations, with detailed timetables of information gathering, document preparation and strategy selection, often on an annual cycle. With such a methodical approach to strategy an organisation could be reassured that their strategies were being developed in a logical manner. But they were in danger of missing strategies that evolved spontaneously, and were tied to a ‘strategy by the calendar’ approach rather than allowing an unstructured environment which might lead to creativity, debate and strategy through this less structured approach.

Porter expanded strategic thought beyond the examination of competitor companies to the economic environment, and he developed “a practical model of competition based on economic principles” (Bell et al 1999, p40).

His five forces framework aims to provide a tool for analysis of the long-term profitability of an industry sector, rather than concentrating on individual companies. The five forces are:

1. The character of the rivalry amongst competitors in an industry
2. The threat of new entrants into the industry
3. The threat of substitute products or services
4. The bargaining power of suppliers
5. The bargaining power of buyers.

Porter advocated companies finding a strategy that would give them sustainable competitive advantage, and suggested companies could institute strategies that would influence the balance and impact of the five forces. Mintzberg et al (1998) place Porter in both the positioning and design schools, arguing that Porter took the basic premise of the design school and extended it beyond individual companies to the external environment. However, Porter kept the procedures of his model within the planning
school which perhaps gave his ideas more credence, given that this was the dominant school in the 1980s when his first major work was published.

Porter recommended companies make deliberate choices rather than trying to ‘be all things to all people’. Each company would decide on what basis it was going to enter a particular market – would it compete on low prices, by having a unique selling point, or by filling a niche demand? Key to Porter’s contribution is his work in “identifying and understanding competitive processes and to clarifying fundamental principles of competitive strategy” (Argyres & McGahan, 2002, p41).

As is noted in the next section, in order to make these strategy choices consistent and workable, an organisation also needs to communicate its strategies well, so that staff throughout the organisation make decisions that are consistent with the proclaimed strategy. It is the decisions made every day by staff in an organisation that determine whether or not an organisation’s strategy is applied.

Porter’s influence has gone beyond business since the publication in 1990 of “The Competitive Advantage of Nations” in which he suggests a theory for how nations, states and regions compete.

One of the planning school’s leading early authors was Igor Ansoff, who published *Corporate Strategy* in 1965 (he continued to publish in this area until the late 1990s). Mintzberg and Ansoff entered into personal debate on each other’s work via articles published in the *Strategic Management Journal* in 1990 and 1991. Some of the debate was rigorous. Mintzberg (1990) set out to “call into question some of the most deep-seated beliefs in the field of strategic management” while Ansoff (1991) wrote of Mintzberg’s “lack of coherence” and use of definitions that were “at variance with the current practice of management”.

In an article written to pay tribute to Ansoff, Hussey (1999, p377) set the context in which Ansoff’s *Corporate Strategy* was published, noting the 1950s were a seller’s market. “If you could make it you could probably sell it at a profit”. Europe was rebuilding after the Second World War and many consumer goods were in short supply. Rather than considering long-range strategy, companies generally planned using short to medium term budget forecasts. By 1965 when *Corporate Strategy* was published, some companies had begun to develop more formal strategy processes but there was little academic literature to support them. In his book, Ansoff introduced key
ideas such as synergy (ie added value) and competence profiles (now known as core competencies).

By 1976 Ansoff had developed his ideas to the point where he considered strategic planning just one of many components of strategic management, publishing *From Strategic Planning to Strategic Management*. Table 2.4 illustrates the development of thinking between strategic planning and strategic management. By adding dimensions such as internal elements of style and climate, together with social and political aspects, strategic management can take a 'planned learning' approach rather than a purely 'planned change' approach.

**Table 2.4: Strategic Planning to Strategic Management**

<table>
<thead>
<tr>
<th>Strategic Planning</th>
<th>Strategic Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>External linkages (eg products, markets, environment) to strengths &amp; weakness)</td>
<td>Adds internal elements (eg organisation, style, climate)</td>
</tr>
<tr>
<td>Strategy formulation to solve problems</td>
<td>Adds implementation and control</td>
</tr>
<tr>
<td>Focuses on the ‘hard’ aspects of the external environment</td>
<td>Adds the social and political aspects</td>
</tr>
<tr>
<td>Planned change of the firm to meet new situations</td>
<td>Adds elements of the adaptive approach to make a new concept ‘planned learning’</td>
</tr>
</tbody>
</table>

(from Hussey 1999)

Ansoff then developed his theories further, introducing the idea that the degree of change and turbulence that different companies faced created the need for a range of strategy responses. Table 2.5 shows the level of environmental stability or uncertainty and the type of reaction Ansoff suggests could be used by companies operating in that environment. For example, a stable, repetitive environment can accommodate a precedent-driven approach, while in an unpredictable environment a company could benefit from a novel approach, and perhaps a planning strategy making use of scenarios.
Table 2.5: Environments and Strategies
Source: adapted from Hussey, 1999

<table>
<thead>
<tr>
<th>Capability Responsiveness</th>
<th>Level 1 Repetitive (stable &amp; predictable)</th>
<th>Level 2 Expanding (slowly &amp; incrementally)</th>
<th>Level 3 Changing (rapidly but still incrementally)</th>
<th>Level 4 Discontinuous (some aspects discontinuous, others predictable)</th>
<th>Level 5 Surpriseful (discontinuous and unpredictable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Custodial Precedent driven</td>
<td>Production Efficiency driven</td>
<td>Marketing Market driven</td>
<td>Strategic Environment driven</td>
<td>Flexible Environment creating</td>
</tr>
<tr>
<td>Strategic Aggressiveness</td>
<td>Stable Precedent based</td>
<td>Reactive Experienced based</td>
<td>Anticipatory Extrapolation based</td>
<td>Entrepreneurial Observable opportunities</td>
<td>Creative Discontinuous novel</td>
</tr>
<tr>
<td>Organisational responsiveness</td>
<td>Stability Seeking Reverts change</td>
<td>Efficiency Driven Adapt to change after the event</td>
<td>Market Driven Seeks familiar change</td>
<td>Environment Driven Seeks related change</td>
<td>Environment Creating Seeks novel change</td>
</tr>
<tr>
<td>Optimum Strategic Process</td>
<td>Procedures, budgets Bottom up budgets, top down procedures</td>
<td>Financial control extrapolated budgets Tight performance targets, extrapolations</td>
<td>Formal planning based on patterns of success Top down / bottom up Planning formal process</td>
<td>Strategic Planning Stronger top down input, scenario planning, issue management</td>
<td>Fast Reaction Process Scenario plans, early warning systems</td>
</tr>
</tbody>
</table>

Mintzberg et al’s (1998) summary of the planning school describes a basic model with an annual schedule of several main steps:

- objective setting
- external audit
- internal audit
- strategy evaluation
- strategy operationalisation.

Mintzberg notes that these steps are brought together into a system of operating plans or master plans. He suggests that while this sometimes complex system is called planning, it is in fact a system of control, assigning budgets, objectives and actions onto particularly entities in an organisation. Indeed, the examples he uses in his chapter do seem complex with various levels of planning and ‘due dates’. He notes that these planning structures divide into two - one side aims at making decisions to drive future behaviour, the other looks at ‘after the fact’ performance assessment.

He summarises the premises of the planning school thus:
1. Strategies result from a controlled, conscious process of formal planning, decomposed into distinct steps, each delineated by checklists and supported by techniques.

2. Responsibility for that overall process rests with the chief executive in principle, responsibility for its execution rests with staff planners in practice.

3. Strategies appear from this process full blown, to be made explicit so that they can then be implemented through detailed attention to objectives, budgets, programs, and operating plans of various kinds.

Mintzberg et al (1998, p77) maintain that three component fallacies (those of predetermination, detachment and formalisation) lead to the grand fallacy of strategic planning, saying it ought to be called strategic programming and "it should have been promoted as a process to formalise, where necessary, the consequences of strategies already developed by other means."

However, Mintzberg et al (1998, p78) do allow that planning and planners can be useful in an organisation, acting as analysts, providing data, assessing the viabilities of strategies, communicating strategy and acting as catalysts “to encourage whatever form of strategic behaviour makes sense for a particular organisation at a particular time”. But those who are rigid in their processes, they assert, are only suitable for stable or predictable conditions. When organisations are operating in a climate of change, a less inflexible school of strategy making is advised.

**Strategic Thinking and Strategic Planning**

Mintzberg (1994, p107) writes that strategic planning fell off its pedestal because “strategic planning is not strategic thinking” but rather, is strategic programming. He argued that “strategic thinking…is about synthesis. It involves intuition and creativity” and noted these are more likely to develop in a flexible environment rather than as part of a strategic planning process.

Liedtka (1998) attempts to resolve the dispute between strategic planning and strategic thinking by linking their roles, arguing that each has a part to play in effective strategy making.

She suggests there are five major attributes of strategic thinking in practice:

- A systems or holistic view – a systems perspective
• A focus on intent – strategic thinking is intent driven
• Thinking in time – linking past, present and future
• Hypothesis-driven – asking “what if” and “if…then…”
• Intelligently opportunistic – where the system both furthers intended strategy and leaves open the possibility of new strategies emerging.

Liedtka (1998, p3) advocates a role for strategic planning in translating vision into corporate behaviour, as long as strategic thinking is also diffused through the organisation, but she too shifts to using the phrase ‘strategic programming’:

“A broadened view of the strategy-making process, then, would incorporate both strategic thinking and strategic programming as related activities, each valuable in its own right, in an ongoing process of creating and disrupting the alignment between an organisation’s present and its future”.

‘Strategic conversation’ between and through layers of an organisation is also an important area where strategic planning can make a contribution. Liedtka (1998, p3) points out that “strategic intent can’t ‘be told’. The new intent must make sense to those who must make it a reality”. Decisions made every day at all levels of an organisation drive its strategic direction, requiring individuals in all areas and at all levels need to be involved in the ‘strategic conversation’ to enhance the quality of those decisions.

Strategic planning, Liedtka (1998, p4) suggests, “can provide a powerful tool for the creation of these developmental strategic conversations” through:

• Creating a forum for dialogue
• Forcing a focus on dialogue around a particular set of issues (the important rather than the urgent)
• Introducing new ideas into the conversation
• Creating opportunities to share information.

She concludes that “Strategic planning, then, need not be the enemy of strategic thinking – traditional approaches based on outmoded models of management and leadership. Strategic planning, broadly conceived and refrained, can be part of the solution” (Liedtka, 1998, p5).
This planning background is useful in the context of the thesis because it examines a process that affects resource allocation. Ideally, strategy and budget should be linked, and given that budgets drive behaviour, it needs to be decided what behaviour is to be encouraged.

Also important are the strategic conversations in a university. Given that the Vice-Chancellors are not, in the case studies examined later, providing budgets at the grass-roots, the allocations by Deans need to be informed by strategy, as do those at school or department level in order to ensure that the ‘everyday decisions’ being made at those levels are in keeping with the overall strategy of the university.

### 2.6.2 Institutional Power and Resource Allocation

At first glance, resource allocation models based on formulae appear to remove the politics and power games found in more traditional systems. As previously noted, in the absence of transparent resource allocation models, and despite the ideal of collegiality, politically powerful factions tend to dominate budget allocation committees and, therefore, allocation decisions (Watts 1996, p55). However, Thomas (2000) found that even with a formula-based system of allocation, political activity and department power were factors in allocation outcomes.

The idea of ‘centrality’ is that the closer a unit is to the core business of the organisation, the more power it has to influence resource decisions. In a university, the most obvious distinction to be made is between academic units which undertake teaching and research (faculties, schools, departments) and support units which service academic staff and students (Finance, Human Resources, Student Administration etc). Through their research and teaching, the academic units attract funding to the organisation from a number of different sources, while the earning capacity of service units is far less developed. It is a commonsense assumption to suppose that the academic units, through their earning power, have a stronger influence in resource decisions than the service units.

Thomas’ (2000, p133) findings support this. “The evidence from the study is that the adoption of devolved, formulaic systems of resource allocation increased the power of departments that brought in valued resources”. Thomas (2000, p132) also notes that powerful individuals could be highly influential in resource allocation decisions despite
a formula-based system because of their influence in designing the resource allocation model in the first place, and then later by placing constraints on the rational model. For example, in one case-study university, the heads of academic units agreed on a rule that stated that no unit would suffer more than a 7% funding decrease in any one year. This rule meant that despite the rationality of the formula, a ‘buffering’ line was introduced to eliminate severe reductions in allocations.

Power accrues to units that bring in valued resources (Thomas 2000, p134). He found that the “implementation of devolved, formula-based systems increased the power of those departments that brought in valued resources”. Jarzabkowski (2002) supports this finding in her research, noting that devolved resource allocation models reduced the strength of the centre to set direction. Thomas (2000, p134) concludes that “the implementation of a devolved formula-based system generated micropolitical activity based on self-interest and created new powerful forces that gained their authority, not from a perceived closeness to the Vice-Chancellor, but through financial strength as reflected in the resource allocation model”.

Hackman (1985, p72) uses centrality as the pivotal concept in her research on power and centrality in the allocation of resources in colleges and universities, but also measured other factors, including environmental power (such as industry support and government priorities) and institutional power (such as strength of enrolments, history and visibility). Her study showed that “a unit’s centrality interacts with its environmental power and resource negotiation strategies to affect the internal resource allocations that it acquires from the organisation.” Hackman (1985) also notes that her study “reinforces the conclusion of others…that budgeting is a political exercise”.

It is important to remember these conclusions when examining resource allocation models and methodologies. The models are tools that operate within a political environment, and influences other than the rational affect decisions made about the models and their outcomes.

2.6.3 Government Power and Resource Allocation

It is interesting to look at the issue of power on a broader front. Smart (1997) argues that Australian universities, when they accepted the Whitlam Government’s offer to abolish student fees and fund public universities from Commonwealth monies,
unwittingly opened the door to increased external control over their internal activities. The shift in funding arrangements resulted in universities being far more dependent on a single source of income than before, and provided the Commonwealth Government a strong lever of control. But as Smart (1997, p3) notes “Not only had the universities and CAEs forsaken their diverse student and State government funding sources but in the process they had become a very large, highly visible, single line item of expenditure in a very vulnerable Federal Budget”. This change has allowed successive Commonwealth education ministers to increase scrutiny of individual university operations even whilst reducing financial commitments, with major increases in government intervention introduced through the Dawkins and Nelson reforms. The ‘Profiles’ exercise described in Chapter 5 is one example, where universities had to agree with the Commonwealth the number of students they would teach for their funding allocations. Under the Nelson reforms, universities could not change the number of students in particular disciplines without the agreement of the Commonwealth. Thus, despite a move to diversify funding sources and reduced reliance on Federal funds, the level of scrutiny by the Commonwealth increased rather than decreased.

In contrast, Burke & Modarresi (2000, p433) argue that in the United States context, performance funding led to increased institutional autonomy “Many states and their campuses struck a tacit bargain: states granted increased autonomy to public colleges and universities in return for credible evidence of improved performance”.

Performance funding for research is now an established part of the Australian system. The Learning and Teaching Performance Fund introduced in 2006, and the Research Quality Framework to be introduced in 2008 will see the shift of many millions of dollars in existing government funding into performance-based allocation programs. This increases the power of the Federal Government to influence internal university decisions, because the agency holding the right to change the performance indicators and data usage is the agency that can change the allocation of millions of dollars of funding.

Given the demonstrated importance of internal and external power on university resource allocation decisions, the next section examines performance funding and agency theory.
2.7 Agency Theory and Performance Funding

How does agency theory impact on resource allocation in universities and performance funding?

This section examines performance reporting and funding for universities by government and within universities for their own resource allocation purposes in the light of agency theory. At one level governments can be viewed as the principal while university systems or an individual institution can be viewed as the agent. Within the institution, the university management may be the principal and departments and faculties the agents. The increase of performance based contracts within university systems (and indeed, with the requirement to offer Australian Workplace Agreements as a condition of receiving funding tied to HEWRRs) brings universities to the heart of agency theory – the contract between the principal and agent.

2.7.1 Introduction to Agency Theory

Agency theory “is directed at the ubiquitous agency relationship, in which one party (the principal) delegates work to another (the agent), who performs that work”. (Eisenhardt 1989, p58) Eisenhardt’s overview of agency theory articulates the key issues:

Table 2.6: Agency Theory Overview

<table>
<thead>
<tr>
<th>Key idea</th>
<th>Principal-agent relationships should reflect efficient organisation of information and risk-bearing costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit of analysis</td>
<td>Contract between principal and agent</td>
</tr>
<tr>
<td>Human assumptions</td>
<td>Self-interest, bounded rationality, risk aversion</td>
</tr>
<tr>
<td>Organisational assumptions</td>
<td>Partial goal conflict among participants. Efficiency as the effectiveness criterion. Information asymmetry between principal and agent.</td>
</tr>
<tr>
<td>Information assumption</td>
<td>Information as a purchasable commodity</td>
</tr>
<tr>
<td>Contracting problems</td>
<td>Agency (moral hazard and adverse selection), risk sharing.</td>
</tr>
<tr>
<td>Problem domain</td>
<td>Relationships in which the principal and agent have partly differing goals and risk preferences (e.g., compensation, regulations, leadership, impression management, whistle-blowing, vertical integration, transfer pricing)</td>
</tr>
</tbody>
</table>

Source: Eisenhardt 1989, p59
“Agency theory reminds us that much of organisational life, whether we like it or not, is based on self-interest” (Eisenhardt 1989, p64).

In private companies, performance-based contracts and stock ownership are used to link the agent with the goals of the principal. It is also argued that information systems that allow the principal to verify agent behaviour also keep the agent working in the interest of the principal. According to agency theory, for example, the President of a company who has a substantial share holding in that company should have his or her interests more closely aligned with the interests of the owners.

Whilst most Australian universities are non-profit public organisations, there is nevertheless value in examining them through the frame of agency theory.

2.7.2 Universities and Agency Theory

Agency theory can be seen in every layer of resource allocation for universities. At the top level, governments and other funding bodies can be viewed as the principals, with the university system and individual institutions seen as the agents of those principals. In Australia this relationship has tightened since the 1970s with an increase in performance funding and organisational accountability (Smart, 1997). For example, in 2003 the Federal Minister for Education caused headlines by including in his educational reform legislation provision for the Minister to control what programs universities could offer (“Nelson aims the axe at 'cappuccino' uni courses”, The Age, October 14 2003). Liefner (2003, p477) agrees the ministry could be the principal, and that a number of people and bodies (such as Councils, the Vice-Chancellor and Deans) can have a dual role of both principals and agents. Academic staff in teaching and research roles, however, are primarily agents.

2.7.3 Performance Funding

Burke & Minassian’s (2002) sixth annual survey of US State Higher Education Finance Officers shows that performance reporting grew 76% in four years between 1999 and 2002, indicating US State Governments were keeping closer tabs on their publicly funded institutions. They also found a move away from up-front strategic initiative funding.
In their survey the authors attempted to distinguish among performance reporting, performance budgeting and performance funding:

- **Performance funding** ties specified State funding directly and tightly to the performance of public campuses on individual indicators. The relationship between funding and performance is tight, automatic, and formulaic.

- **Performance budgeting** allows governors, legislators, and coordinating or system boards to consider campus achievement on performance indicators as *one factor* in determining allocations for public campuses. It links State budgets indirectly and loosely to results (Burke and Minassians, 2002: p3).

- **Performance reporting** stresses accountability for results without paying for performance (p7).

**Table 2.7: Performance Measuring of Universities and Colleges by US State Governments, 1997-2002**

*Source: Burke & Minassian’s (2002)*

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding</td>
<td>20%</td>
<td>26%</td>
<td>32%</td>
<td>34%</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeting</td>
<td>32%</td>
<td>42%</td>
<td>46%</td>
<td>56%</td>
<td>54%</td>
<td>52%</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting</td>
<td></td>
<td></td>
<td></td>
<td>60%</td>
<td>78%</td>
<td>88%</td>
</tr>
</tbody>
</table>

However, it is interesting to note that performance reporting is not tightly connected with funding, as 45.5% of States in 2002 said they did consider performance reporting in the allocation of resources to colleges and universities compared with 54.5% which said they did not do so. This number had actually decreased from the 48% of States that made the link in 2001.

Consequently, in the USA, although scrutiny and accountability is increasing for publicly funded universities, the link between performance and funding is not so clear. Burke & Minassians (2002, p4) note that due to political pressures, individual members of the legislature were often not willing to decrease funding of their local institution despite performance reporting.
Maassen (2000) notes that of seven European countries surveyed in 1998 on whether their government funding (for teaching only) to universities was input (student/staff numbers) or output (graduations) based, four based funding allocations on input only (Flanders, France, Germany and UK) while two (Netherlands and Sweden) funded teaching on a mix of input and output measures.

In Australia, teaching and research funding for universities is calculated through separate mechanisms. Teaching grants still are largely input based despite the introduction of the Learning and Teaching Performance fund, while research funding is largely output based, using publications, graduations and grants awarded as performance indicators.

The question arises as to why governments are paying more attention to the performance of institutions. Performance indicators can have several roles other than funding – accountability, informing policy and decision making, leveraging improvement and informing consumer choice are other reasons to collect performance information (Ewell 1999, p193-194). Alexander (2000, p415) meanwhile, argues that there are two key factors in the increase in the interest of governments in university performance reporting: the massification of higher education systems and limitations of public expenditures for higher education

In his examination of performance based reforms in Europe and the USA, Alexander (2000, p427) concludes that “performance funding and budgeting policies have intensified the tension between policy makers and higher education administrators and faculty because of divergent objectives”. He continues “the nature of the state’s relationship with higher education has evolved from one of authoritative oversight, to one of active involvement in financial arrangements and economic decisions…Once it has been established that the primary purpose of higher education is to serve the economy, then it becomes the responsibility of the state to ensure that the institution is held accountable in successfully achieving this task” (Alexander 2000, p427). The principal / agent relationship is, therefore, reinforced.

### 2.7.5 Internal University Resource Allocation and Agency Theory

Within universities, resource allocation models can also be viewed through the frame of agency theory, with incentives to increase efficiency, diversify sources of income
and increase revenue. The shift towards individual performance-based contracts for senior managers emphasises the agent / principal relationship. But as Liefner (2003) notes, it is difficult for principals to measure the increased value the academic agents produce, because monetary profit is not their main objective. Consequently, “in order to avoid a situation where agents take advantage of the fact that their effort is hard to control and reduce their activity, a principal can link funding to performance (success)” (p478).

Leslie (2003, p83) studied eleven US universities to examine changes in institutional funding patterns and staff incentives. He found that ten of the universities were using financial incentives and/or disincentives, and that in the vast majority “heads (of management units) were more fearful about the incentives than they were positive or optimistic”. Leslie (2003, p84) suggests this could be attributable to the relative newness of some of the initiatives, but also because heads of department felt central administration was threatening the traditional nature of the university or decreasing departmental autonomy. He notes that legitimacy of the intervention (the incentive program) needed to be established to be accepted, and that “the implementation strategy was more important than the particular intervention itself.”

Examining the results of incentive interventions, Leslie (2003, p86) noted that while some appeared to “get results” others “seem to achieve very little”. He concludes that “the specific incentive selected may be less important than the skill with which it is administered”.

The lesson is that how a university goes about introducing incentives, whether through the resource allocation model or otherwise, and the acceptance of the implementation, are important considerations in establishing principal / agent relationships.

2.7.4 Performance Funding Options and Indicators

Ewell (1999) provides models for performance funding for government-to-institution funding, but some of his ideas can also be applied for internal resource allocation. He raises the issue as to how and when funding should flow in relation to performance measures. How and when should funding be upfront, and when should it be post-results?
Ewell (1999, p197) proposes “four basic conceptual dimensions to combine in a variety of ways to define quite different kinds of information-driven allocation mechanisms”.

Diagram 2.2: Classifying Funding Approaches as a Guide to Indicators’ Development Two ‘Views’ of the Problem
Source: Ewell 1999

‘Purpose’ by ‘Degree of Formalisation’

<table>
<thead>
<tr>
<th>Nature of Connection between $ and Measures</th>
<th>Tight</th>
<th>Loose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose of Incentive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reward Performance</td>
<td>Performance Funding</td>
<td>Information-driven Markets</td>
</tr>
<tr>
<td>Directed Action</td>
<td>Directed Funding to Achieve Targets</td>
<td>Competitive Grants</td>
</tr>
</tbody>
</table>

‘Time’ by ‘Direction of Allocation’

<table>
<thead>
<tr>
<th>Results and Allocation</th>
<th>After Reporting Period</th>
<th>Before Reporting Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positively Correlated</td>
<td>Performance Funding</td>
<td>Incentive Funding to Achieve Targets (Matching Grants or Bonuses)</td>
</tr>
<tr>
<td>Negatively Correlated</td>
<td>Directed Funding to Correct Deficiencies</td>
<td>Incentive Funding to Correct Deficiencies</td>
</tr>
</tbody>
</table>

These diagrams suggest there are choices to be made with regards to the timing and target of funding, before or after the event, incentives or rewards, tightly or loosely
configured. Ewell (1999, p204) then goes on to provide guidance on the measurement types that might be suitable to these funding mechanisms:

Table 2.8: Relative Suitability of Measurement Types in Different Kinds of Funding Mechanisms

<table>
<thead>
<tr>
<th>Measurement Types</th>
<th>‘Hard’ Statistics</th>
<th>Ratios and indices statistics</th>
<th>‘Second-order’</th>
<th>‘Judgement Calls’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Funding</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Competitive Grants</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Directed Investment</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Information-Driven Markets</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Periodic Base Adjustments</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

‘Hard’ Statistics relatively unambiguous direct counts eg student numbers
Ratios and indices based on ‘hard’ statistics eg retention and completion rates
‘Second-order’ measures underlying trait or condition that cannot be directly counted eg student satisfaction, learning outcomes
‘Judgement Calls’ difficult to measure eg good practice, equity

In his concluding thoughts Ewell (1999, p207) says that “as information-driven funding approaches become more widespread and as the component of institutional budgets that they govern expands, careful design and implementation is becoming imperative.”

His advice is:
- Be clear about purposes
- Tailor policy components to fit purposes
- Simple and robust may be better than elegant and precise
- Avoid approaches that punish for things that they cannot control
- Regularly review and revise the process over time
2.8 Conclusion to Literature Review

This review of literature relating to university funding and administration demonstrates the evolution of Australian universities from the preserve of the few to the expectation of the many, accompanied by increasing influence on programs resulting from heavy dependence on Commonwealth grants.

In the light of the withdrawal of State governments from major investment in their universities and the reduction of Commonwealth government grants as a proportion of total university expenditure, Australian universities are adjusting their policies and procedures to increase their role as entrepreneurial institutions.

This review of relevant literature illustrates this evolution over the past half-century to the point at which today Australian universities are manifestly integral parts of a major national domestic and export industry, ranking with wool and grain as overall import earners and in 2003 higher education was Australia's third largest services export (after tourism and transportation), as first expounded in the Jackson Report, 1984. In these circumstances, and given the frequent changes of government policies, incentive programs and rolling reappraisal as a basis for planning, programming and budgeting appears both appropriate and inevitable.

Specifically, against the background of existing literature this study seeks to demonstrate that a resource allocation model is an instrument within a university which requires regular maintenance and review.

A further useful outcome of this review of the literature is to support the study’s overall outcomes which aim to provide practical advice to university senior academic managers with respect to resource allocation both at the top level in the organisation and at faculty level.
Chapter Three: Conceptual Model

3.1 Introduction to Conceptual Model

What are some of the important questions a university needs to ask itself in relation to resource allocation?

Before considering changes to a resource allocation model, a university needs to ask itself some fundamental questions regarding its mission, values and principles. What does the university believe its role to be? How does this relate to the Federal Government’s policies, and to stakeholder and community expectations? What are its priorities, in the broadest terms? How does it want to measure success (for example, by its reputation, its service to the community, the profit it makes, its quality of teaching, the direct and indirect returns from its research?)

On an operational level, the university needs to develop an understanding of how each of its activities contributes to the organisation as a whole. In this thesis, the focus is on resource allocation, and therefore the focus is narrowed down to understanding how each of the university’s activities contributes to the resource model. Does it supply surplus to the university, or does it receive a subsidy? Does it have an intrinsic value to the university? Does it enhance the reputation of the university and hence its drawing power?

Once these basic questions have been answered thinking can begin on a resource allocation model that will provide a mechanism for an optimal flow of funds through the organisation.

This section provides a transition between the theory of the literature review and the practical application of that theory into the research methodology. It illustrates some of the key questions arising in the researcher’s mind in light of the reading, and the application of that theory to the practical research.
3.2 Conceptual Frameworks

What conceptual frameworks could a university consider?

3.2.1 Core Business vs Profitability

The first framework presented is a lens through which activities in the university can be viewed to determine their value to the institution. There are some activities that a university undertakes because they are core to what Australian society and government understands a university to be. For example, in March 2002 Melbourne University Private was reminded by the Victorian State Government that in order to quality for university status it needed to undertake a certain level of research.

The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) has National Protocols for Higher Education Approval. In 2002 MCEETYA Protocol 1 said that for an institution to be recognised as a university required “teaching and learning that engage with advanced knowledge and inquiry; a culture of sustained scholarship extending… to the creation of new knowledge through research,” and a “commitment of teachers, researchers, course designers and assessors to free inquiry and the systematic advancement of knowledge.”

The incident with Melbourne University Private indicates that governments, both State and Commonwealth, have certain expectations of what a university will, and will not do. The Higher Education Support Act (known as the Nelson reforms) that passed through the Senate in late 2003 allows the Federal Minister for Education to withdraw Commonwealth support from individual programs if the Minister believes the programs are not appropriate to be taught in a public university.

The policy environment, as noted in Section 2.2.1, is, however, under constant change. For example, the July 2006 Council of Australian Government (COAG) agreed to revisions in the National Protocols that included changes in the conditions under which new universities can be established, provision for institutions to be specialist universities, and pathways for university colleges to become full universities. It is

interesting to speculate whether Melbourne University Private would be considered differently in 2006 compared with 2002.

It is useful to have a simple illustration of where different activities fit into the university’s portfolio, and therefore why (or whether) they should be undertaken. Diagram 3.1 provides an illustration of the framework.

*Diagram 3.1 Core Business vs Profitability*

<table>
<thead>
<tr>
<th></th>
<th>Core Business</th>
<th>Non-Core Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitable</td>
<td>A: Core activity that provides surpluses</td>
<td>C: Undertaken for revenue generation purposes</td>
</tr>
<tr>
<td>Not Profitable</td>
<td>B: Strategic cross-subsidies for activities of intrinsic value</td>
<td>D: Should be limited to support services to core activities</td>
</tr>
</tbody>
</table>

As noted in Section 2.3.1, cross subsidies are more widespread in public services than in private industry (Lewis & Pendlebury 2002, p25), and have strategic implications Jarzabkowski (2002, p5). Decisions to undertake particular activities may be made on considerations other than financial, but with increasing accountability and performance management, universities need to balance their education and financial performance (Lewis & Pendlebury, 2002, p27-29).

Diagram 3.1 illustrates some of the possible combinations for a non-profit organisation such as a university:

**A: Core business + Profitable**

Activities within the core business of the university that can also supply a surplus are vital to the organisation. In Australian universities a substantial element of the core business comprises the teaching of Australian undergraduate students.
This, however, could be a controversial statement. Should Commonwealth Government funds supplied for teaching be available for other activities, such as research? This issue arises because in Australia not all Commonwealth funding is tagged. Universities receive some of their government funding as a lump sum which they can allocate within the institution according to that institution’s own priorities. Amounts to be spent on infrastructure, staffing, equipment and for other purposes are not prescribed by the government supplying the funding.

Another question is whether teaching of international full fee paying students should be included within this quadrant. Is teaching international students a core function of an Australian public university? Or does this activity more appropriately belong in quadrant C (non-core, surplus generating)? Would universities be accepting so many international fee paying students into their courses if there were other sources of funding available to those universities?

**B: Core business + Not Profitable**

That public universities undertake activities in this quadrant distinguishes them from for-profit private education providers.

A for-profit private education provider can offer a very narrow range of activities and be profitable. For example, a private institution may decide to teach only undergraduate business programs. That decision would be based on the financial bottom line. However, Australian public universities do not make decisions about activities based purely on profit and loss. There are activities that universities choose to do because they are valued in other ways. For example, research is rarely profitable in the short term. To provide the infrastructure and staff for research is a cost to a university. Although government and industry funds may be attracted, often these funds do not fully cover the cost of the research projects or they require cash or in-kind contributions from the university.

Activities such as funding scholarships, student and staff exchanges, visiting fellowships, and undergraduate and postgraduate projects are also included in this quadrant. They are important activities resourced by universities but are not money-making.
C: Non-Core business + Profitable

Activities undertaken to provide a surplus to the university.

Activities such as teaching international fee paying students and Australian postgraduate fee paying students could be included in this quadrant. As noted above, these two activities in particular could be classified as core business or non-core depending on the reader’s point of view. However, they are activities that are vital in increasing revenue to Australian universities and are therefore, at least for the time being, in this quadrant.

Other activities in this quadrant include consulting activities, and off-shore and interstate teaching programs. Trans-national programs (where Australian universities teach off-shore) maybe in a partnership arrangement with an overseas institution or company.

D: Non-Core business + Not Profitable

There is a limited number of activities that should be included in this section. Universities require a support infrastructure to operate. This includes departments such as Finance, Human Resources, and Student Administration. A key debate is what is a reasonable proportion of a university’s available resources to direct into meeting these operating costs.

Because of the constrained financial circumstances of most Australian universities, it would behove universities to regularly review the costs associated with activities in this quadrant. It also highlights the importance of understanding the costs of various activities. Without a good understanding of costing, an institution may unknowingly undertake activities that are not core and that are a cost burden.

Massey (1996; p80-81) notes the issue of what he calls the ‘lattice’ of administration growing at a greater rate than the teaching and research areas. The lattice refers to “the proliferation and entrenchment of administrative staff…and its effects on an institution’s operations and costs”. The problem is how to distinguish between essential and desirable administration and support services and how to balance these costs with activities that generate revenue for the organisation. Without sufficient support, services to students and other stakeholders will not be of sufficient quality to
sustain the organisation, but the danger is they grow to use a larger than necessary proportion of the resources. Massey calls this ‘function lust’, explaining that “Like a healthy vine, the growth of support staff often leads to more growth as professionals seek to expand their areas; yet another possible result is that professionals may perform tasks to a better degree – and consequently, at a higher cost – than an institution requires” (p81).

Keeping activities in quadrant D to an agreed reasonable size and focused on their support role is essential to prevent both function lust and what Massey calls the ‘ratchet’ of academic departments and individual academics, who may gradually lose their feeling of connection with the organisation as a whole and, instead develop an allegiance to their academic discipline. Massey suggests this increases the academic focus on research and publication, at the expense of teaching (p81).

### 3.2.2 Centralised vs Decentralised

As noted in Section 2.4.3, when developing resource allocation models there are two types of decentralisation or centralisation to be considered:

- The movement of revenue (whether all revenue is considered ‘university’ property, or whether it belongs to the earning area)
- Financial Responsibility and Accountability (where the responsibilities lie, at the centre or in the faculties)

### 3.2.3 Performance vs Formula Driven Allocations

A third conceptual framework through which a resource allocation model can be viewed is the proportion of resources that is allocated on a performance basis and the proportion allocated on some other basis. For example, a university may choose to allocate some funding on the basis of student enrolment numbers in a particular program, but may also allocate some funding based on quality measures for that program. The proportion of predictable funding against performance funding is a method through which strategy and accountability can be emphasised and department behaviour influenced.
3.2.4 Formula vs ‘Human’ Driven Allocations

Another consideration is whether a resource allocation model in the university should be driven entirely by predetermined formulae that have been agreed prior to running the model, or whether the model should be a tool in a ‘human’ decision making process. Is the model the final step in resource allocation, or is it a step along the way? This raises questions of how best to drive strategy in the organisation and ‘whose money is it anyway?’

An organisation could establish a resource allocation model and then agree to abide by the numbers the model produces. This requires agreement in principle to the share of resources that flow into various areas, perhaps examining different types of income (such as government teaching grants, local student fees, international student fees) and deciding what formula should be applied to each source of funds. Such a process provides certainty, and may provide a motivation to increase revenue into the university from particular sources of funds. It could, however, prove inflexible should the environment change quickly, and may not see resources integrated effectively with strategy.

An alternative is to have a process whereby the model provides some degree of certainty, but where people in the organisation, whether the Deans in a decentralised model or the Vice-Chancellor in a centralised one, have the final say in resource allocation. This requires good forecasting skills, a debate and decision making process and agreement that flexibility is important to the organisation.

All of the above elements are issues related to the Resource Allocation Model (RAM), but they need to be placed into a context. The diagram below summarises the data collected in the case studies, with the outer boxes providing the environmental information on the organisation, and the inner box providing specific RAM data.
3.3 Conclusion to Chapter

Chapter Three articulated some frames of reference that emerge from the literature review and are helpful in understanding some of the key concepts in resource allocation models. These concepts provide ‘pegs’ on which to hang observations that emerge during the data collection.

Chapter Four introduces the research methodology used in this study.
Chapter Four: Research Methodology

4.1 Introduction to Research Methodology

The methodology chapter examines how the research in this thesis is undertaken. It explains why case study was chosen as the appropriate methodology. The blueprint for the research is presented together with the case study protocol. Issues of reliability and validity are addressed, in line with Yin’s (2003) view that these are important considerations when using qualitative methods in order to improve the credibility of the project outcomes.

This research is being conducted for the degree of professional doctorate and therefore aims to provide useful, practical insights and tools for university managers who have responsibilities for designing and working with resource allocation models within universities. It does this by presenting three case studies describing the recent evolution of resource allocation models at two different levels in universities with particular attention to processes surrounding the model and the extent to which allocations are formulae- or ‘human decision’- driven. In the context of changing funding arrangements for publicly funded universities in Australia, the research examines the mechanisms chosen by three universities to distribute funding within the organisation, including how they have elected to address issues such as performance funding and incentives to increase non-government revenue.

4.2 Why Select Case Study Methodology?

What is the context for research methodology?

Research philosophy provides a frame of reference from which research is conducted, placing the researcher into a particular world view that in turn puts the research into a context. There is debate (e.g. Easterby et al, 1991; Guba and Lincoln, 1994; Perry et al, 1999) on how to divide the spectrum of thought into different paradigms, reflecting beliefs ranging from one extreme, that all phenomena can be measured independent of environment, to the other extreme, that all measurement is relative and subjective depending upon the context in which observations are made. Depending on the philosophy held, the researcher may be seen as an observer looking through a one-way mirror and not influencing the phenomena being observed, or a member of the
community actively influencing the phenomena being researched. All the authors mentioned above agree to three levels of research philosophy, moving from the broadest belief system of the researcher to the detailed methodology selected for a particular piece of research.

Diagram 4.1: Levels of Research Philosophy

Ontology

Epistemology

Methodology

The broadest level of research philosophy is ontology. This is the level at which the world-view of the researcher is articulated, helping to explain the decisions about an individual research project, particularly the research methodology and analysis of context. These beliefs carry through to research epistemology, “the theory of knowledge, especially with regard to its methods and validation” (Australian Oxford Dictionary, 1999, p439).

Both ontology and epistemology then inform the research methodology adopted for a particular piece of research, with different world views and theories of knowledge expected to lead to different choices of methodology. Positivists are likely to carry out ‘hard’, ‘traditional’ research, formulating a hypothesis and designing laboratory experiments to demonstrate whether the hypothesis is correct. Researchers farther along towards the subjective end of the scale may choose case studies, while those who believe the researcher should not be separated from the subjects of the research, and may indeed influence the outcomes, may conduct action research.

Easterby et al (1991) suggest two paradigms in research philosophy; positivism and phenomenology. Positivism reflects two assumptions: “firstly, that reality is external and objective; secondly, that knowledge is only of significance if it is based on observations of this external reality” (Easterby, p22). In contrast, phenomenology suggests “the world and ‘reality’ are not objective and exterior, but that they are socially
constructed and given meaning by people” (Easterby, p24). The divide between the two schools of thought is presented below:

Table 4.1: Key Features of Positivist and Phenomenological Paradigms

<table>
<thead>
<tr>
<th>Basic beliefs</th>
<th>Phenomenological paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>The world is external and objective</td>
<td>The world is socially constructed and subjective</td>
</tr>
<tr>
<td>Observer is independent</td>
<td>Observer is part of what is observed</td>
</tr>
<tr>
<td>Science is value-free</td>
<td>Science is driven by human interests</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research should:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on facts</td>
<td>Focus on meanings</td>
</tr>
<tr>
<td>Look for causality and fundamental laws</td>
<td>Try to understand what is happening</td>
</tr>
<tr>
<td>Reduce phenomena to simplest elements</td>
<td>Look at the totality of each situation</td>
</tr>
<tr>
<td>Formulate hypotheses and then test them</td>
<td>Develop ideas through induction from data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Preferred methods include:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operationalising concepts so that they can be measured</td>
<td>Using multiple methods to establish different views of phenomena</td>
</tr>
<tr>
<td>Taking large samples</td>
<td>Small samples investigated in depth or over time</td>
</tr>
</tbody>
</table>

The positivist paradigm appears uncontroversial (eg Easterby et al, 1991; Guba and Lincoln, 1994; Perry et al, 1999) but there is debate on how to define the more subjective and contextual research paradigms. Phenomenology, for example, is used by other authors in a more limited sense, as a sub-set of an interpretivist paradigm, reflecting inconsistency as well as overlap in terminology.

Guba and Lincoln (1994) provide four paradigms; positivism, postpositivism, critical theory (encompassing a number of paradigms) and constructivism. They suggest a dividing line between the first and second pairs, proposing that postpositivism is closely related to positivism as it still holds to the idea of reality outside of context, while critical theory and constructivism move away from the definitive and towards the importance of context.

Perry et al (1999) agree with the positivism label, and provide three further paradigms: realism, critical theory and constructivism. Perry et al (1999, p17) suggest “positivists separate themselves from the world they study, while researchers within the three other paradigms acknowledge that they have to participate in real-world life to some extent so as to better understand and express its emergent properties and features.”
Realism and postpositivism appear closely related in that both share with positivism an assumption that there is a ‘reality’ which a researcher can identify and describe, while differing on how closely that reality can be identified and generalised, and whether the researcher is a strictly an observer or may be a participant. Critical theory and constructivism, meanwhile, assume that reality is not necessarily a single truth but rather depends on the context, and suggest the researcher is an active participant in the phenomena being studied.

The table below summarises Perry et al’s (1999) approach to research paradigms:

**Table 4.2: Basic Belief Systems of Alternative Enquiry Paradigms**

*Source: Perry et al, 1999; p17*

<table>
<thead>
<tr>
<th></th>
<th>Positivism</th>
<th>Realism</th>
<th>Critical Theory</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
<td>Naïve realism: reality is real and apprehensible</td>
<td>Critical realism: reality is ‘real’ but only imperfectly and probabilistically apprehensible and so triangulation from many sources is required to try to know it</td>
<td>Historical realism: ‘virtual’ reality shaped by social, economic, ethnic, political, cultural, and gender values, crystallised over time</td>
<td>Critical relativism: multiple local and specific ‘constructed’ realities</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Objectivist: findings true</td>
<td>Modified objectivist: findings probably true</td>
<td>Subjectivist: value mediated findings</td>
<td>Subjectivist: created findings</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>Experiments / surveys: Verification of hypothesis: chiefly quantitative methods</td>
<td>Case studies / convergent interviewing: triangulation, interpretation of research issues by qualitative and quantitative methods such as structural equation modelling</td>
<td>Dialogic/dialectical: Researcher is a ‘transformative intellectual’ who changes the social world within which participants live</td>
<td>Hermeneutical / dialectical: researcher is a ‘passionate participant’ within the world being investigated</td>
</tr>
</tbody>
</table>

Given these definitions, this researcher places herself into the ‘realist’ paradigm, that is, attempting to identify some ‘reality’ whilst understanding that the context in which observations are made have considerable influence on the phenomena. Nevertheless,
I believe it is possible to provide some interpretation of a phenomenon that can be useful, by looking from a variety of different angles. This said, I also acknowledge ‘reality’ is not necessarily absolute, but is ‘probable’.

The second level of research philosophy, epistemology, reflects the researcher’s belief in the nature of knowledge; can and should the subject of the research be measured and counted to establish a ‘true’ answer, or are the research findings influenced by the environment and therefore perhaps only applicable in that and similar environments?

Whether findings can be generalised is an issue in the epistemology of all the paradigms. Surveys, for example, often assume that findings from a sample group can be generalised to a larger population. At the other end of the scale, constructivism seems to suggest that findings are dependent on their environment, and therefore it would appear difficult to generalise those findings except perhaps to a similar environment. However, while findings derived from a positivist approach may prove or disprove a hypothesis, those from realism, critical theory and constructivism can help to build theory and provide value through exploratory research and improved explanations that can then be generalised.

The third level of research philosophy is research methodology, how the researcher goes about a particular project. Research methodology is not selected in isolation, but is a result of decisions regarding ontology and epistemology. There is a range of research methodologies available, from surveys, modelling, simulations and experiments, which fit into the quantitative realm, to case studies, action research and focus groups, which are associated with qualitative methodologies.

4.2 Research Design

Is case study a legitimate research methodology? Is case study a suitable methodology for examining resource allocation in universities? How has this research been designed?

The methodology selected for a particular project depends on a number of factors. Some refer to the nature of the research to be undertaken, some to the strengths and preferences of the researcher, others to the pragmatic issues of resources and availability of data (Leedy & Ormrod, 2001; p112).
One ‘traditional’ divide between methodologies is the divide between quantitative and qualitative methods of enquiry. Generally, quantitative research is associated with positivist or traditional approaches, while qualitative approaches to research are associated with the non-positivist paradigms (Leedy and Ormrod, 2001; p101). While various authors (eg Easterby et al, 1991; Guba and Lincoln, 1994; Perry et al, 1999; Leedy and Ormrod, 2001) lay out the positives and negatives of qualitative versus quantitative methods, all agree both methods contribute to the growth of knowledge.

Table 4.3: Distinguishing Characteristics of Quantitative and Qualitative Approaches

Source: Leedy & Ormond 2001, p102

<table>
<thead>
<tr>
<th>Question</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the purpose of the research</td>
<td>To explain and predict</td>
<td>To describe and explain</td>
</tr>
<tr>
<td></td>
<td>To confirm and validate</td>
<td>To explore and interpret</td>
</tr>
<tr>
<td></td>
<td>To test theory</td>
<td>To build theory</td>
</tr>
<tr>
<td>What is the nature of the research process?</td>
<td>Focused</td>
<td>Holistic</td>
</tr>
<tr>
<td></td>
<td>Known variables</td>
<td>Unknown variables</td>
</tr>
<tr>
<td></td>
<td>Established guidelines</td>
<td>Flexible guidelines</td>
</tr>
<tr>
<td></td>
<td>Static design</td>
<td>Emergent design</td>
</tr>
<tr>
<td></td>
<td>Context-free</td>
<td>Context-bound</td>
</tr>
<tr>
<td></td>
<td>Detached view</td>
<td>Personal view</td>
</tr>
<tr>
<td>What are the methods of data collection?</td>
<td>Representative, large sample</td>
<td>Informative, small sample</td>
</tr>
<tr>
<td></td>
<td>Standardised instruments</td>
<td>Observations, interviews</td>
</tr>
<tr>
<td>What is the form of reasoning used in analysis?</td>
<td>Deductive analysis</td>
<td>Inductive analysis</td>
</tr>
<tr>
<td>How are the finds communicated?</td>
<td>Numbers</td>
<td>Words</td>
</tr>
<tr>
<td></td>
<td>Statistics, aggregated data</td>
<td>Narratives, individual quotes</td>
</tr>
<tr>
<td></td>
<td>Formal voice, scientific styles</td>
<td>Personal voice, literary style</td>
</tr>
</tbody>
</table>

A case study, according to Yin (2003, p13) is “an empirical inquiry that:

- Investigates a contemporary phenomenon within its real-life context; when
- The boundaries between phenomenon and context are not clearly evident; and in which
- Multiple sources of evidence are used."

Yin (2003, p9) notes that case studies have distinct advantages when ‘a ‘how’ or ‘why’ question is being asked about a contemporary set of events, over which the researcher
has little or no control.” In this research, the questions are related to how available funds are distributed and why they are distributed that way, with the researcher having no control over the events in the study.

It should be noted that case study research has been used previously in examining particular features of university operations. Clark (1998) used five case studies to explore what made some universities more entrepreneurial than others, Liefner (2003) used six case studies to examine resource allocation and performance, and Jarzabkowski (2002) drew on three case studies in her examination of strategic implications of resource allocation models in universities.

This thesis aims to explore and interpret one phenomenon specifically, resource allocation models, and thereby contribute to theory building in university operations and management. To this end, case study methodology has been selected. This is supported by Perry et al (1999, pp19-21) who suggest that major reasons for using case studies in business research may include theory construction and theory building (rather than theory testing and theory verification), the need to delve deep to gain an understanding of the phenomenon, and the classification into categories and the identification of inter-relationships among those categories.

Miles and Huberman (1994, p17) note that the conventional image of qualitative research is that it is not structured, but rather that the conceptual framework emerges during fieldwork. However, Miles and Huberman also note that a research framework is needed for the pragmatic reasons of keeping within time and resource constraints as well as for validity reasons, such as collecting data suitable for cross-case comparability. The research design needs to be flexible so as not to reduce case-sensitivity but nevertheless sufficiently rigid to ensure that the researcher remains within the boundaries of the research question, or at least to alert the researcher to any move away from the original question.

Chapter 3 of this thesis outlines this researcher’s conceptual framework at the start of the research project which helped to frame the design and questions for the data collection phase. It outlines some of the options the researcher was aware of through her work with resource allocation, and helped to clarify her thinking.

Diagram 4.2 illustrates the sequence of the investigation and the form of the report. Two sets of data were collected in an overlapping timeframe, with interviews...
conducted as interviewees made themselves available, while the third set of data was collected separately some months later because there was a delay in receiving permission to undertake the case study by this particular university.

**Diagram 4.2 Broad Research Approach:**

<table>
<thead>
<tr>
<th>Case Study 1</th>
<th>Case Study 2</th>
<th>Case Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Level 1</td>
<td>Level 1</td>
</tr>
<tr>
<td>- interviews x 2</td>
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<tr>
<td>- document examination</td>
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<tr>
<td>- interviewee confirmation of data</td>
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<td>Level 2</td>
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<td>- interviews x 2</td>
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<tr>
<td>- interviewee confirmation of data</td>
<td>- interviewee confirmation of data</td>
<td>- interviewee confirmation of data</td>
</tr>
</tbody>
</table>

Case Study Report 1 → Case Study Report 2 → Case Study Report 3 → Cross-Case Analysis → Research Conclusions

4.3 Information Required

**What information is sought during data collection?**

Missing from the literature available on the issue of resource allocation within universities is recent practical advice on multiple-level resource allocation models and processes, the elements that may be included, and the strengths and weaknesses of different choices as identified by those affected by the RAMs. This study therefore sets out to fill this gap.

In this thesis the study’s questions refer back to the original research question - what are the important factors a university needs to take into account when devising an effective resource model and process? The thesis examines resource allocation models in order to understand the models that have evolved in different universities
and what might be the advantages and disadvantages of different models might be. This involves investigating both the models themselves and the contexts within which they are operating.

Previous research (Jarzabkowski, 2002) suggests that rather than aiming for best practice in resource allocation models, individual universities should aim for best fit. This leads to the practical question: what possible elements and component parts are available to university managers to construct a best fit RAM for their own institution?

Data gathering, therefore, needs to concentrate on two elements; the details of any resource allocation model, and its ‘fit’ with the organisation (at the top level) or area (at the second level) in which it operates.

4.4 Data Collection Technique

What data collection techniques are used?

Data was gathered through interview, supported by document examination, with the methodology as follows:

- Pre-interview study – examination of documents available on the web, in libraries and offered by participants to enhance knowledge and place interview responses in context
- Conduct interviews
- Gather additional documents during and after interviews
- Transcribe interviews
- Code and analyse transcripts
- Request validation of transcripts by participants, where the participant agrees to do so.

A total of fourteen interviews were conducted, five each in two institutions, four in the third university.

The preferred method was an interview in person rather than by telephone or other means because, given the sensitivity of the topic, a higher level of trust could be established and therefore better quality data gathered through a direct exchange such as conversation. Although it was more time-consuming for the researcher, and
involved travelling to interstate, country and metropolitan centres, this effort was justified by the opportunity to interact with the interviewees. Due to scheduling difficulties and interstate travel, one interview was held by telephone.

The research design calls for two levels of resource allocation to be examined in each institution, so at least two interviews were conducted with key staff at each level of allocation. Once within the institutions further interview subjects were offered in two cases, in the interests of developing a fuller understanding of the resource allocation models. Each interview was conducted using the questions listed in the research protocol and ran for between thirty and sixty minutes. With the permission of the interviewees, interviews were recorded and then transcribed. Transcripts of interviews were stored securely, in accordance with the relevant code of conduct of research.

By conducting interviews with people filling roles at two levels in each university the data provide a cross-section through the organisation and a view on the differences or similarities in resource allocation at different levels within the same university.

As Yin (2003, p92) notes “interviews are an essential source of case study evidence, because most case studies are about human affairs. These human affairs should be reported and interpreted through the eyes of specific interviewees, and well-informed respondents can provide important insights into a situation”. An important precursor to collecting relevant data is identifying the key people in each university to interview. Preliminary contact and discussions with the universities assisted with identifying these key people.

In order to increase the reliability of data, document examination is used in this research. Relevant documents were sourced through key staff in each institution, resulting in a collection of budget documents, policies, strategy documents and other resources.

Because of the sensitive and confidential nature of resource allocation discussions in universities, direct observation of resource allocation discussions was not available as a source of data to the researcher.
4.5 Sample Selection

How are the case studies selected? Which universities provide the case studies?

The case study universities are not a random selection but a deliberate targeting of particular institutions. They were selected for their diversity, and also for the pragmatic reason that access could be gained for data collection. The three selected are from two different Australian states, with different missions, historical roots, discipline ranges, geographic ranges, size and budgets.

University Alpha is a multi-campus regional university, with campuses both in regional and rural areas and in capital cities. A majority of its students are enrolled off-campus, studying in distance mode. Founded in 1989 via the amalgamation of two colleges it has a student population of 40,000. University Alpha was selected because its resource allocation needs to take into account diverse campuses with different missions as well as supporting a large number of distance education students and programs. With its regional location, it also has particular responsibilities to its local communities and expectations from them.

University Beta is a member of the Group of Eight research universities, and was selected because of its comprehensive nature, its research intensity, and its size. Also, in 2005 it introduced a revised resource allocation model. I felt it would be particularly interesting to include a university case study where a conscious and considered change had taken place.

University Gamma gained university status in 1992 after a long history as a technical college serving a large city’s inner suburbs, and is a dual sector provider offering both TAFE and university programs. The university sector is regarded as small and focussed, enrolling about 12,000 students, most of whom are on-campus. With the exception of one campus in Malaysia, all other campuses are in the wider metropolitan area. University Gamma was selected because it was at that time the researcher’s employer university, and the research problem grew out of direct experience of resource allocation models at work. More information on the characteristics of the case-study universities is provided in Section 5.1.
Prospective interviewees were identified initially through examination of university organisation charts and public information, and then through discussion with the Vice-Chancellor to confirm that interviewees had been correctly identified, given the slightly different structures and titles in each institution.

4.6 Development of the Instrument

How was the research instrument developed?

Some propositions were developed first, arising from the literature review and readings, and highlighting the key issues that have been identified for examination and analysis. By having some propositions in mind, the researcher can identify key data to collect and strategies for analysing the data (Yin, 1994; p 36) but still have the flexibility to change initial ideas and propositions as the data and analysis suggest. Propositions are a starting point, not an absolute.

Propositions before the data were gathered were:

1. university resource allocation models and methods should aim for ‘best fit' with the individual university, rather than an industry ‘best practice'  
2. university resource allocation models may be different between universities and between levels within an individual university  
3. university and faculty level allocations of budgets do not automatically align with the sources of the funds available  
4. universities treat different sources of revenue differently within their RAMs.  
5. universities need to balance incentives for profit centres with cross-subsidies for cost centres  
6. the revenue flow and the power flow in the organisation are related  
7. the change in funding environment has produced changes in internal resource allocation models  
8. organisational behaviour can be modified and driven through resource allocation  
9. in making resource allocation decisions universities recognise their core business.

These propositions led to development of the instrument. The questions were written in the knowledge that there may have been reluctance to speak openly about resource allocation, given it is a sensitive topic in universities. The questions were designed to
be non-threatening and began with a simple question. Later questions were designed to be open-ended and allow interviewees to expand upon their thoughts once the interviewee and interviewer had time to establish a rapport.

The instrument was refined after feedback from academic advisors and a pilot interview with a senior academic colleague, putting the fact-gathering questions first and the opinion questions later. This sequence also expands the interviewer’s knowledge of the case study model and processes before moving into questions surrounding the history and effectiveness of the model and process.

Research Protocol

A. Researcher to introduce herself and the research project.

B. Interviewee asked to read and sign the interview consent form.

C. Questions to be asked:
   1. What revenue streams does the university have? (at the second level interviews, this question is adapted to ‘What revenue streams does your area have?’)
   2. How do you make decisions on resource allocation? What process do you use? Who are the key players?
   3. Do you use a resource allocation model (RAM)? What are the details / elements of the model?
   4. What type of revenues pass through the model and on what basis are funds allocated? What categories of data are included in the RAM? What performance indicators or other measures are used? How are incentives incorporated (if at all)?
   5. How much are final allocations driven by RAM and how much by human decision? How do RAM calculations fit into the allocation process?
   6. Why has the RAM and the process surrounding it been designed or evolved this way? How has it changed from past models? Why?
   7. What is the context within which the model operates (organisational structure, power structure, strategy etc)
   8. How well do you think your current model and process supports your university’s objectives? (or, at the second level interviews, your area’s objectives? Are there ways in which the model and/or the process hinders achieving those objectives?

D. Conclude interview with thanks.
4.7 Research Instrument

How was the research instrument implemented?

The research instrument is a series of questions designed to delve deeper into propositions developed as a result of the literature review in order to build theory regarding resource allocation models.

Interviews were held in person, one-on-one with a number of senior staff of each of three case study universities. As noted above, prior to the interviews, formal permission was sought from each Vice-Chancellor for their university to be involved in the study, and to confirm that relevant staff had been identified for interview.

Each participant was sent a copy of a letter of introduction to the study, a copy of the research protocol, and a confirmation of consent form in advance of the interview time.

4.8 Collection of Data

How was data collected?

Data were collected primarily through interviews of senior staff at the selected universities, and through reference to relevant documents.

Web searches were made of each case study university website to locate relevant documents and provide background information. In at least one case, the university publishes its budget document for internal and external access. In the case of University Gamma, the researcher had access to historical documents including budget process reviews and was party to many committee meetings where budgets were discussed. Further documentation was provided by interviewees at each institution at the time of interview or afterwards having been identified as pertinent to the research during the interviews. Interviewees granted permission for particular documents to be tracked down and the researcher to obtain copies.

Interview times were established by contacting the personal assistant or other office personnel of each prospective interviewee, and an interview time set. The nature of the interview was explained, and preliminary permission to record the interview was sought.
Each interview was conducted as a one-on-one meeting at a place selected by the interviewee, normally at their own office on their campus. All interviews were conducted according to the research protocol with questions asked in the order that appeared on the interview, although asides and discussions varied with each person. Interviews were recorded and transcribed, and each interviewee was invited to check the transcript of their own interview and provide corrections or clarifications.

In most cases the interviewees saw the questions in advance, as the letter of introduction, interview protocol and permission slip were provided prior to the meeting time. Indeed, two of the case study universities asked to see the research protocol before deciding to participate in the project.

Interview data was collected over a seven-month period between March and September 2005.

4.9 Access to Case Study Universities

How was access to the case study universities obtained?

A total of ten Australian universities were approached to take part in the case studies. Of these:

- four agreed in principle. Of these four, three provided general access and one provided a list of interviewees. Two of the four were in the same category (Group of Eight) and so one only was selected for the thesis, leading to three varied studies.
- one contacted the researcher for further information but did not provide a final response.
- three refused permission on grounds that included concern regarding confidentiality and concern about the time involvement of senior staff.
- two did not respond to the written requests to participate.
4.10 Confidentiality

Confidentiality was assured for individuals and institutions taking part in the case studies, and the researcher gave explicit assurances that no information would be attributed without the express consent of the individuals and institutions involved. As a result, case study universities are not identified, and comments are attributed to a level of role but not to individuals.

As required by University Gamma’s Code of Research Practice, interview tapes, transcripts and other research material are secured in a locked filing cabinet. Only the researchers have access, and the transcripts were coded to maintain the anonymity of interviewees.

4.11 Limitations of Approach

What are some of the identified limitations to this research approach?

Reliability and validity in qualitative research is supported through a credible research design that demonstrates construct validity, internal validity, external validity and reliability (Yin, 2003: p34). In this study, the robustness of the research is supported by the following actions:

- the research design is fully documented in the research protocol so the study can be repeated by another researcher
- triangulation is performed via interviews and document examination
- interviewees are asked to provide respondent validation of data
- case study descriptions are thorough and based on confirmable data.

This research is designed with multiple cases and multiple levels of attention in each case. The cases are not samples, are not representative, and are not designed for development as a general theory. Presumption 1 in Section 4.6 above states that university resource allocation models and processes should aim for ‘best fit’ with the individual university, rather than an industry ‘best practice’. The researcher cannot then have a preconceived idea of what is ‘best practice’ but instead needs to identify the elements of the model that tie in with the stated strategy of the university being studied. Broadening and deepening the understanding of RAM in universities and how
two levels of resource allocation link together in a single institution are central to this thesis.

Through the use of case study protocol, any move away from the standard questions, or shifts in emphasis in the research is noticeable rather than unintended. As Yin (1994, p52) notes, shifts may be justifiable but they “should not come as a surprise to the investigator”.

4.12 Limitations of the instrument

What are the limitations in using this instrument?

A limitation of this research is relying on people to disclose what they may want to keep confidential – resource allocation and budgets are highly sensitive areas of university operation. Also, Australian universities are operating in a time of rapid change and are competing against each other for resources, which leads to a reluctance to provide full descriptions of internal processes.

The questions were devised as non-threatening and general in order to reduce anxiety regarding confidentiality and commercial-in-confidence issues. This approach, however, required the researcher to delve farther when confidence and a rapport has been established. There was naturally a variation in the level of trust and the degree of rapport established with different individuals.

The researcher has worked extensively in the area of resource allocation for more than a decade and had to ensure that answers were heard rather than assumed. Basic questions needed to be asked and not omitted solely because the researcher thought she might be familiar with the answer already.

4.13 Data Presentation

How is the data to be examined and presented?

It is important to understand and define exactly what the case is (Yin 2003, p22). The unit of analysis clarifies what is the core of the study and what is the context. In this study the unit of analysis is the resource allocation model (RAM). Context is provided
by the process within which the RAM operates and, more broadly, the organisational structure within which it operates. The timeframe is limited by the scope of time and resources, and examines a snapshot of current RAMs in use, with a brief look at the historical development of the RAM where this provides further understanding on the current model.

Transcripts of the interviews were examined for common themes and practices through the individual cases and across the cases. This was achieved with the aid of NVIVO, which allows for the coding and organising of text.

Jarzabkowski (2002, p29) concludes that “RAM is less a matter of best practice, neatly transferable between institutions, than one of internal fit”. So this analysis does not look for a general theory that fits all universities, but instead widens the range of information available to university managers about components that might be included in RAMs so as to make the creation of ‘best fit’ models less of a hit and miss affair.

An examination of RAMs includes the type of revenue included and performance indicators used, in order to demonstrate similarities and differences in models.

Three case study reports have been developed that describe the data gathered from each university. Because two levels of resource allocation are being explored at each university, the reports have two major sections, outlining the allocation methods at each level. These reports also contain single-case analysis.

After the single-case reports have been developed, broader cross-case analysis is undertaken and a cross-case report composed.

This research aims to examine Jarzabkowski’s proposition on best fit in order to expand upon it or provide an alternative view. However, as noted previously, in a DBA research project the practical outcomes of the research are also in themselves an important result. Providing additional information and options for university managers to consider when devising and refining internal resource allocation models is an important part of the study.
4.14 Conclusion to Chapter Four

This chapter has examined why case study methodology has been selected for this particular project. It has also outlined the research design including some of the propositions and thinking that has led to the research being undertaken. It is important to note these are starting points for the investigation that will be explored through the data collected.
Chapter Five: Case Study Reports

5.1 Introduction to Case Study Reports

Chapter Five contains the case study descriptions. There are two main sections to this chapter. The first provides a brief introduction to each case-study university and describes, compares and contrasts the three universities in terms of student numbers, staff numbers, and financial sources and resources. This provides a picture of each university within which their individual resource allocation takes place, and also allows the reader to understand the similarities and differences between the case study universities.

Some of the similarities that will be identified include:

- Federal Government funding model
- National Protocols that define what a university is
- Common sets of income streams.

Some of the differences include:

- Organisation structure
- Organisation mission
- Organisation history
- Geographical setting and location
- Links with their communities
- Breadth of offerings / research intensiveness.

The second section describes the resource allocation model and process used in each university. Each one is described in detail. The case report for each university examines the first level allocations and the second level allocations, where, as the case studies show, different methods are applied. Within-case analysis is contained in each case-study report, while cross-case analysis and commentary are contained in Chapter Six.
5.2 Introduction to Case Study Universities

Which institutions were used as case studies and what are their key characteristics?

Three universities were identified for case studies. As noted in Chapter 4, they were chosen to represent a spread across different types of university within the Australian system – newly established or older, metropolitan or country, research or teaching tradition, on-campus or distance education student profile, focused or comprehensive course profiles. There are also pragmatic reasons for the selection, in that the Vice-Chancellors of the case study universities granted access to their organisations, while others approached either did not respond or refused such permission.

The case study universities are:

- University Alpha
- University Beta
- University Gamma.

5.2.1 University Alpha

University Alpha was created in 1989, when a former College of Advanced Education and a former Institute of Higher Education were combined into a new single institution. As a result, University Alpha has become a major higher education provider for rural areas of its state, with campuses in at least four regional centres. It has also spread its operations to offer programs to students in metropolitan centres, and is a major provider of distance-education programs to students who cannot, or choose not to, attend on-campus studies. In 2005, more than 23,000 of its 33,560 students (headcount) were enrolled in distance education programs. It has also entered into partnerships with third-party providers both in Australia and overseas, with more than 6,000 students enrolled in this type of program.

University Alpha describes its organisation as “an integrated, multi-campus structure in which the major academic units, the faculties, are represented on at least three campuses of the University and the administrative divisions have University-wide rather than campus-specific responsibilities.”

(http://www.Alpha.edu.au/handbook/handbook05/index.htm#origin accessed 05/05/05)
Prior to becoming a university, Alpha’s predecessor institutions belonged to the CAE (college of advanced education) sector, and were in consequence valued for their teaching rather than their research activities. Like many of the universities created as a result of the Australian higher education reforms of the late 1980s, Alpha has put emphasis on building its research profile.

University Alpha is subject to the same Unified National System resource allocation process as all Australian public universities, and operates a top-level resource allocation model to direct resources into faculties. Faculty Deans undertake the next-level allocations. In 2005 it had an annual operating revenue of $237M.

5.2.2 University Beta

University Beta was established as an institute by an Act of the New South Wales Parliament in 1949, although its origins can be traced to a mechanics institute of 1843. Declared a university in 1958, it had 15,000 students by 1968 and in 2005 enrolled just under 40,000 students. The University has three campuses in two metropolitan centres. Two other Australian universities began as entities within University Beta before they became universities in their own right.

University Beta now offers some 200 undergraduate and 500 postgraduate programs across a broad range of disciplines. It has an academic staff of more than 2,300 (EFT) and a general staff of almost 4,000 (EFT). In 2005 it reported revenue from continuing operations of over $773M.

5.2.3 University Gamma

University Gamma was established as a technical college, enrolling its first students in 1909. By the 1970s the Victorian Institute of Colleges (VIC) had been created, and while Gamma could not issue degrees in its own name because it was an institute rather than a university, students could study for degree-level programs and graduate with a VIC degree. Following a change of rules, University Gamma was able to issue its first degrees in its own name in 1981. In 1992 University Gamma was created through an Act of the Victorian Parliament, and Gamma became a fully fledged
university, able (indeed, expected under the National Procotols) to enrol students through to PhD level and to conduct research.

Gamma’s university sector enrolled over 16,000 students (headcount) in 2005 (10,500 undergraduate students, 4,500 postgraduates in coursework programs and 560 postgraduate research students). The University had a total operating revenue in the region of $277 million in 2005. By Australian university standards, the Higher Education sector at Gamma is small and focused, with the narrowest discipline profile of any UNS member.

The Higher Education sector was restructured in 2004 from eight schools to five faculties, and in 2006 a split between two higher education divisions was removed and an additional Faculty created. In 2005 when the data collection was conducted, the Higher Education Division comprised five faculties and one overseas campus. The university sector of Gamma operates across three of its six Australian campuses (the others being exclusively TAFE) and the campus located in Malaysia.

Gamma is one of only four Australian intersectoral universities, delivering both university and technical and further education (TAFE) programs. Being intersectoral puts Gamma in an interesting financial position. Proclaimed under a State Act of Parliament, the university sector is nevertheless funded through the Commonwealth Government. In contrast, the TAFE sector is a State Government responsibility so that Gamma’s TAFE activities are funded through the State Government. In both sectors, the proportion of government funding in the total budget is reducing and there is a corresponding rise in the importance of attracting non-government revenue.

Gamma’s higher education sector is currently subject to resource allocation at several levels:

- Commonwealth Government (through mechanisms administered by the Commonwealth Department of Education, Science and Training)
- University-level (at Vice-Chancellor level)
- Division-level (at Deputy Vice-Chancellor level)
- Faculty-level (at Dean level).

These key characteristics are summarised in the table below:
**Table 5.1: Characteristics of Case Study Universities**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Alpha</th>
<th>Beta</th>
<th>Gamma</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Established</td>
<td>1895 (agricultural college)</td>
<td>1843 (mechanics institute)</td>
<td>1909 (technical college)</td>
</tr>
<tr>
<td>University Status</td>
<td>1989</td>
<td>1949</td>
<td>1992</td>
</tr>
<tr>
<td>Location</td>
<td>Rural</td>
<td>Metropolitan</td>
<td>Metropolitan</td>
</tr>
<tr>
<td>Number of Campuses &amp; Study Centres 2005</td>
<td>11</td>
<td>3</td>
<td>4 (3 higher education in Australia, 1 overseas)</td>
</tr>
<tr>
<td>2005 EFTSL</td>
<td>18,656</td>
<td>27,051</td>
<td>10,854</td>
</tr>
<tr>
<td>On campus (internal)</td>
<td>21%</td>
<td>92%</td>
<td>99%</td>
</tr>
<tr>
<td>Full-time</td>
<td>41%</td>
<td>61%</td>
<td>66%</td>
</tr>
<tr>
<td>2004 Total Staff FTE</td>
<td>1,757</td>
<td>4,949</td>
<td>1,140</td>
</tr>
<tr>
<td>Faculties (2005)</td>
<td>5</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>
5.3 Institutional Characteristics Comparisons

How do the case-study universities compare in their characteristics?

This section provides some comparative data on the three case study institutions, in order to set the scene for the case study descriptions later in the chapter. Contrasting statistics from 1994 and 2004 illustrate the rate of change in universities in this decade.

5.3.1 Student Profile

In 2004 the Unified National System (UNS) of universities in Australia enrolled almost one million students, with an equivalent full time load of 661,206 (944,977 headcount).

*Table 5.2: University Enrolments 1994 and 2004*

<table>
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<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>10,543</td>
<td>16,368</td>
<td>19,377</td>
<td>35,899</td>
</tr>
<tr>
<td>Beta</td>
<td>21,777</td>
<td>26,295</td>
<td>27,907</td>
<td>40,421</td>
</tr>
<tr>
<td>Gamma</td>
<td>6,859</td>
<td>8,831</td>
<td>10,163</td>
<td>15,068</td>
</tr>
<tr>
<td>UNS</td>
<td>453,308</td>
<td>585,396</td>
<td>661,206</td>
<td>944,977</td>
</tr>
</tbody>
</table>

The figures above show that University Alpha enrols a greater proportion of part-time students, which is consistent with its large distance education enrolment. University Beta is the largest of the case study universities, with a high proportion of students studying full-time.

*Table 5.3: University Enrolments % Increase from 1994 to 2004*

<table>
<thead>
<tr>
<th>University</th>
<th>EFTSL - % increase 94-04</th>
<th>Headcount - % increase 94-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>84%</td>
<td>119%</td>
</tr>
<tr>
<td>Beta</td>
<td>28%</td>
<td>54%</td>
</tr>
<tr>
<td>Gamma</td>
<td>48%</td>
<td>71%</td>
</tr>
</tbody>
</table>

The growth in universities in the past decade is reflected in the student numbers. In 1994 the UNS had an equivalent full-time load of 453,308 and a headcount total of 585,396. In 1994, EFTSL accounted for 77% of headcount, by 2004 this had dropped to 70% indicating more part-time students in higher education.
University Alpha has grown the most in terms of student numbers, more than doubling its number of students (headcount) in those ten years. University Beta showed the slowest growth, perhaps reflecting its earlier maturing as a university.

The graph below illustrates the proportion of load enrolled at the different program levels. As would be expected of a research-intensive university, University Beta has a much higher proportion of load enrolled in research higher degrees (Masters and PhD). It is interesting to note the larger proportion of EFTSL enrolled in postgraduate coursework programs at Gamma compared with the other case study universities and the UNS. Many postgraduate coursework programs require domestic as well as international students to pay full fees, and the graph indicates Gamma has tapped into this revenue stream.

**Graph 5.1: 2004 Proportion of Enrolled EFTSL by Level of Program**

*Source: 2004 Student Statistics: Selected Higher Education Statistics, DEST*

The biggest contrast with 1994 is in the proportions of undergraduate and postgraduate coursework student load. In 1994 83% of enrolled load was at undergraduate level, while in 2004 this had dropped to 73%. In 1994 10% of enrolled load was in postgraduate coursework programs but by 2004 this had increased to over
15%. The change was particularly marked at Gamma which had 10% of load in postgraduate coursework programs in 1994 and 21% in 2004.

Fee revenue from local postgraduate students in the UNS rose from $54,826,000 in 1994 to $186,175,000 in 2004 (see Section 5.3.4 for detailed revenue analysis)

All the universities have tapped into the international student market, with a consistent proportion between international and domestic students enrolled. Gamma is a little above the UNS average of 24.5% (8.7% in 1994) with international enrolments comprising 28% of total load (compared with 12.1% in 1994). Both Alpha at 24.9% (6.5% in 1994) and Beta at 25.5% (14.4% in 1994) are close to the UNS average.

International student numbers in the Australian university system rose from 39,580 in 1994 to 162,220 in 2004, a period when local student numbers rose from 413,728 to 498,985. The value of international student fees rose from $384,517,000 to $1,946,611,000 in the same period.

This means that in one decade fee revenue from two key sources increased from $439M to over $2 billion across the UNS. Such a large increase in the focus of universities towards revenue earning has meant shifts in thinking about how to resource, reward and provide incentives for revenue generating activities, and how that revenue should be distributed within organisations, how much returned to the earners in rewards and incentives, and how much used to cross-subsidise other activities.

### 5.3.2 Discipline Profile

There are twelve broad discipline areas in the Department of Education, Science and Training (DEST) statistics. Of the case study universities, Gamma has the narrowest profile with over 90% of its students contained within five of the discipline areas. As would be expected from a comprehensive research university, Beta has the same proportion spread across seven discipline areas, while just over 90% of Alpha load is across six of the discipline areas.

As befits its mission, Gamma has a high proportion of its students studying in the engineering and related technologies disciplines. However, its highest proportion of students is in the Management and Commerce discipline grouping, a characteristic it
shares with Alpha and Beta. University Beta also shows a small spike of load in the engineering discipline and has a high load in the Society and Culture discipline.

**Graph 5.2: 2004 EFTSL by Broad Discipline Group**
*Source: 2004 Student Statistics: Selected Higher Education Statistics, DEST*

![2004 EFTSL By Broad Discipline Group](image)

Student load was less concentrated in 1994, with students spread more evenly across broad discipline areas. Also very noticeable is the smaller number of students overall in the university system (graphs are to the same scale). It should be noted there are some changes with regards to the discipline groupings used between 1994 and 2004.
Graph 5.3: 1994 EFTSL by Broad Discipline Group  
Source: Selected Higher Student Education Statistics, DEET

![Graph 5.3: 1994 EFTSL by Broad Discipline Group](image)

5.3.3 Staff Profile

Table 5.4 shows the Equivalent Full Time (EFT) staffing of each of the case study universities and the Unified National System in 2004. This gives a further indication of the size of each institution. The EFT are shown by academic classification, plus a figure for all general staff (including technical and laboratory staff)

Table 5.4: 2004 FTE for Full-time and Fractional Full-time Staff by Current Duties Classification  
Source - Staff 2004: Selected Higher Education Statistics, DEST

<table>
<thead>
<tr>
<th>Academic Classification</th>
<th>Alpha</th>
<th>Beta</th>
<th>Gamma</th>
<th>UNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic D+E</td>
<td>82</td>
<td>500</td>
<td>106</td>
<td>7,540</td>
</tr>
<tr>
<td>Academic C</td>
<td>123</td>
<td>531</td>
<td>111</td>
<td>8,269</td>
</tr>
<tr>
<td>Academic B</td>
<td>290</td>
<td>534</td>
<td>160</td>
<td>11,099</td>
</tr>
<tr>
<td>Academic A</td>
<td>52</td>
<td>290</td>
<td>99</td>
<td>6,134</td>
</tr>
<tr>
<td>Sub total</td>
<td>548</td>
<td>1,854</td>
<td>476</td>
<td>33,043</td>
</tr>
<tr>
<td>General Staff</td>
<td>960</td>
<td>2,404</td>
<td>464</td>
<td>45,146</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,508</td>
<td>4,257</td>
<td>940</td>
<td>78,189</td>
</tr>
</tbody>
</table>
In terms of total staff size, it is clear that University Beta is a far larger operation than Alpha and Gamma universities. Overall, Alpha and Gamma combined account for just over 3% of EFT staff employed in the UNS, and the same proportion of academic staff in the UNS. The staff of Beta equate to approximately 5.4% of staff in the UNS (both overall and share of academic staff in the UNS).

Table 5.5: 2004 Headcount for Full-time and Fractional Full-time Staff by Current Duties Classification

Source - Staff 2004: Selected Higher Education Statistics, DEST

<table>
<thead>
<tr>
<th></th>
<th>Alpha</th>
<th>Beta</th>
<th>Gamma</th>
<th>UNS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic D+E</strong></td>
<td>5.4%</td>
<td>11.7%</td>
<td>11.3%</td>
<td>9.6%</td>
</tr>
<tr>
<td><strong>Academic C</strong></td>
<td>8.2%</td>
<td>12.5%</td>
<td>11.8%</td>
<td>10.6%</td>
</tr>
<tr>
<td><strong>Academic B</strong></td>
<td>19.2%</td>
<td>12.5%</td>
<td>17.0%</td>
<td>14.2%</td>
</tr>
<tr>
<td><strong>Academic A</strong></td>
<td>3.4%</td>
<td>6.8%</td>
<td>10.5%</td>
<td>7.8%</td>
</tr>
<tr>
<td><strong>General Staff</strong></td>
<td>63.7%</td>
<td>56.5%</td>
<td>49.4%</td>
<td>57.7%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>99.9%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Headcount figures show that University Beta has a high proportion of academic staff working part-time compared with University Alpha, where almost all are full-time. Alpha and Beta show similar levels of part-time work for general staff, while Gamma has a larger proportion of part-time general staff.

The graph below illustrates the proportion of staff at each classification by case study university and for the Unified National System. Some points of interest are:

- University Alpha has only 14% of staff at senior academic levels (from senior lecturer to professor) against a UNS average of 20%. It has a larger number of staff classified as non-academic (64%) compared with the UNS average (58%)
- University Beta has a high proportion of staff in senior academic ranks, as does University Gamma.
- University Gamma has a lower proportion of staff classified in non-academic roles than the UNS average.
5.3.4 Financial Profile

5.3.4.1 Income

The following table records the sources of income for the case study universities and the Unified National System. It should be noted that the Gamma financial profile is based on Gamma’s higher education operation and excludes sources of income for its TAFE Division. University Gamma’s higher education income is directed to university teaching and research and to support services (that may be shared with TAFE staff and students) but not to TAFE teaching and development activities.
Table 5.6: 2004 Sources of Income ('000)

Source - Finance 2004: Selected Higher Education Statistics, DEST

<table>
<thead>
<tr>
<th>Source</th>
<th>Alpha</th>
<th>Beta</th>
<th>Gamma HE</th>
<th>UNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Government Grants</td>
<td>69,979</td>
<td>339,123</td>
<td>60,492</td>
<td>5,325,757</td>
</tr>
<tr>
<td>State Government</td>
<td>54</td>
<td>8,150</td>
<td>0</td>
<td>590,490</td>
</tr>
<tr>
<td><strong>Government Sub-Total</strong></td>
<td>70,033</td>
<td>347,273</td>
<td>60,492</td>
<td>5,916,247</td>
</tr>
<tr>
<td>HECS</td>
<td>59,408</td>
<td>81,650</td>
<td>26,874</td>
<td>1,983,104</td>
</tr>
<tr>
<td>Government Contribution</td>
<td>48,419</td>
<td>61,199</td>
<td>23,715</td>
<td>1,634,582</td>
</tr>
<tr>
<td>Student Contribution</td>
<td>10,989</td>
<td>20,451</td>
<td>3,159</td>
<td>348,522</td>
</tr>
<tr>
<td>Commonwealth Loans Programs (inc PELS)</td>
<td>5,259</td>
<td>18,507</td>
<td>6,849</td>
<td>240,918</td>
</tr>
<tr>
<td>Fees and Charges</td>
<td>46,485</td>
<td>204,634</td>
<td>58,555</td>
<td>3,001,762</td>
</tr>
<tr>
<td>Investment Income</td>
<td>5,036</td>
<td>25,996</td>
<td>3,770</td>
<td>452,867</td>
</tr>
<tr>
<td>Consultancy and Contract Research</td>
<td>2,254</td>
<td>46,524</td>
<td>9,040</td>
<td>645,771</td>
</tr>
<tr>
<td>Other Sources</td>
<td>24,679</td>
<td>52,363</td>
<td>2,824</td>
<td>1,207,704</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>213,154</td>
<td>776,947</td>
<td>168,404</td>
<td>13,448,372</td>
</tr>
</tbody>
</table>

There are several points worth noting in the figures:

- Federal government grant funding accounts for between 33% and 44% of university income, although once Commonwealth contributions to HECS are included this percentage rises to at least 52% UNS wide, with Gamma the lowest at 52% and University Alpha the highest at 61%.
- Fees and charges account for between 22% and 35% of revenue. Gamma appears particularly reliant on fees and charges, with 13% more of its income recorded from this source than the system average.
- Funds sourced from students, including through HECS contributions, the Federal Government’s loan schemes or directly through fees and charges account for, on average, 27% of revenue. At Gamma, however, these sources account for a much larger proportion of income (41%). It could be surmised that the case study universities have been adept at coping with the change from Government funded to student funded education.

The graph below summarises these percentages across the case study universities.
5.3.4.2  Expenditure

The largest item of university expenditure is that of salaries - academic and general staff costs combined account for 58% of expenditure system-wide. This reflects the fact that the main resource and asset for universities is people – while facilities such as lecture theatres, laboratories and research space are essential, the main cost for universities is staffing. It is interesting to note that the newer universities in the case study spend proportionally more on salaries than the older, research universities. This may be because research intensive universities are more successful in attracting large capital and equipment grants.
5.3.5 Research Profile

Expenditure on research shows the material difference between the research intensive Group of Eight case study university, which spent $246,160,000 on research activities in 2002, compared with the two new universities in the study, which spent a combined total of $63,091,000 on research that same year.

Table 5.7: Expenditure on Research and Experimental Development by Source of Funds for Expenditure, 2002 ($'000)


<table>
<thead>
<tr>
<th>Source of Funds</th>
<th>Alpha</th>
<th>Beta</th>
<th>Gamma</th>
<th>UNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC Commonwealth</td>
<td>3,585</td>
<td>38,168</td>
<td>2,625</td>
<td>507,405</td>
</tr>
<tr>
<td>ARC Non Commonwealth</td>
<td>19</td>
<td>1,352</td>
<td>266</td>
<td>12,514</td>
</tr>
<tr>
<td>State and Local Government</td>
<td>615</td>
<td>5,553</td>
<td>769</td>
<td>104,494</td>
</tr>
<tr>
<td>Other C’wealth Government</td>
<td>2,100</td>
<td>22,667</td>
<td>8,133</td>
<td>397,169</td>
</tr>
<tr>
<td>Business Enterprises</td>
<td>116</td>
<td>15,497</td>
<td>1,065</td>
<td>174,093</td>
</tr>
<tr>
<td>General University Funds (GUF)</td>
<td>12,064</td>
<td>143,885</td>
<td>29,025</td>
<td>2,033,319</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>2,400</td>
<td>1,544</td>
<td>85,974</td>
</tr>
<tr>
<td>Overseas</td>
<td>219</td>
<td>16,639</td>
<td>932</td>
<td>114,629</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18,732</td>
<td>246,160</td>
<td>44,359</td>
<td>3,429,597</td>
</tr>
</tbody>
</table>

2002 University Expenditure 178,191 658,804 136,413 11,118,551
The graph below illustrates where research expenditure funds were sourced.

**Graph 5.7: Source of research expenditure funds, proportion to total research expenditure**  
*Source: 2002 Research Expenditure: Higher Education Selected Statistics, DEST*

It is interesting to note that for all the universities, general university funds (GUF) make up a large proportion of research expenditure, indicating perhaps that research is cross-subsidised by general university funds.

In the Unified National System, the proportion of general university funds allocated to research as a proportion of total university expenditure in 2002 was 18.3%. University Alpha allocated only 6.8% of general university funds to research, which perhaps reflects that it places funding for research lower in its priorities. University Gamma and University Beta, interestingly, allocate almost identical proportions of general university funds to research (about 22%). Gamma has made plain its strategic aim of becoming a research intensive university, and this level of spending of general university funds indicates it is putting funds into supporting that aim.

Graph 5.8 shows the differing types of research undertaken within the research expenditure at each institution. It illustrates that Alpha and Gamma universities place
their emphasis on applied research, undertaking more than the UNS average. Beta has a higher proportion than the UNS of pure basic research. This is to be expected, given the differing missions of the institutions.

Graph 5.8: Research Expenditure by Type of Research

5.4 Sources of revenue for Australian public universities

What are the sources of revenue for Australian public universities?

Revenue for Australian public universities comes from a variety of sources, with these sources likely to be similar for all the universities in the Unified National System. The sources can be divided into government and non-government. Intersectoral universities receive funding from State and Commonwealth Governments, the Commonwealth being responsible for university funding whilst TAFE funding is a State responsibility. Funds are provided in two major categories, for teaching and research. Funds may be performance or non-performance based. Non-government revenue is derived predominantly from international and Australian student fees, but may also come from commissioned research, consulting, investments and intellectual property rights. This section looks primarily at the university sector, touching only on TAFE where it interacts with the higher education sector in the university funding model.
The Commonwealth Government, in consultation with individual universities, provides an amount of funding to universities in return for enrolling a target number of undergraduate students. Since 2005 this number has specified discipline targets as well as overall targets. The Government publishes the Commonwealth Grant Scheme funding cluster rates, and the maximum student contribution amounts for each cluster (the actual level is decided by individual universities). Once the overall and cluster targets are known, universities can calculate their income. The Commonwealth Government employs this undergraduate education funding mechanism to provide universities with income for teaching purposes. It also provides some specific targeted grants.

In 2003, for example, Gamma received Commonwealth funding under the following categories:

- Recurrent grant
- Additional Places
- Superannuation Supplementation
- Equality of Opportunity
- Over-enrolments (Discounted base HECS)
- Indigenous Support
- HECS Administration Assistance
- Research Training Scheme (RTS)
- Institutional Grants Scheme
- Workplace Reform Program
- Capital and Equipment
- Research Infrastructure block grant

Main teaching grant
Competitively won places under the Government’s ‘targeted places’ program
For each student enrolled above the number agreed in the profiles exercise
Research student allocation agreed in the profiles exercise
Competitive research funding
Tied to demonstrable productivity gains
Capital works and equipment grant
Competitive funding between all UNS universities

Technical and Further Education (TAFE) is funded through State governments, and through categories including:

- State Government recurrent grant
- State Government specialist centres
- State Government equipment grant.
In addition, universities generate their own revenue through a variety of activities. These income streams include:

- International Student Fees
- Local Fee Paying Student Fees (postgraduate and undergraduate)
- Research
- Consulting
- Gifts and bequests
- Interest / dividends.

Raising additional funds from non-government sources and performing well in performance relating funding are key issues in Australian universities, given that Federal Government grants accounted for 40% of university revenue in 2004, a significant reduction from 81% in 1989.

5.5 Case Study Report – University Alpha

As noted previously, University Alpha is a multi-campus regional institution created in 1989. It has a large number of distance education students and campuses spread through rural and regional areas.

Of the five faculties, the Faculty of Commerce supports the greatest number of enrolments, with the Faculty of Arts the next largest, followed by the Faculty of Science and Agriculture, the Faculty of Education and the Faculty of Heath Studies. In 2004, 77% of all EFTSL were at undergraduate level, with 18% in postgraduate coursework programs and 1% in postgraduate research programs. Table 5.8 contains these 2004 enrolment figures:

Table 5.8: University Alpha EFTSL Enrolments 2004

Source: University Alpha Planning and Audit Website

<table>
<thead>
<tr>
<th>Faculty</th>
<th>2004 EFTSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>7,889</td>
</tr>
<tr>
<td>Commerce</td>
<td>11,212</td>
</tr>
<tr>
<td>Education</td>
<td>4,983</td>
</tr>
<tr>
<td>Health</td>
<td>4,967</td>
</tr>
<tr>
<td>Science and Agriculture</td>
<td>7,045</td>
</tr>
<tr>
<td>Other</td>
<td>2050</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of Study</th>
<th>2004 EFTSL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students were enrolled through one of fifteen administrative locations, illustrating the diverse geography of Alpha's operations: 64%, however, were administered through its two main campuses. Alpha had a total equivalent full time (EFT) permanent staff of 1471, of whom 534 are classified as academic and 937 as general staff.

5.5.1 Financial Information

In 2004, Alpha's total revenue from ordinary activities was $213,514,000. The sources of this revenue are listed below in table 5.9.

**Table 5.9: 2004 Revenue from Ordinary Activities**  
*Source: DEST Financial Statistics 2004*

<table>
<thead>
<tr>
<th>Source</th>
<th>$'000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Government Grants</td>
<td>69,979</td>
</tr>
<tr>
<td>State Government</td>
<td>54</td>
</tr>
<tr>
<td><strong>Government Sub-Total</strong></td>
<td>70,033</td>
</tr>
<tr>
<td>HECS</td>
<td>59,408</td>
</tr>
<tr>
<td><strong>Government Contribution</strong></td>
<td>48,419</td>
</tr>
<tr>
<td><strong>Student Contribution</strong></td>
<td>10,989</td>
</tr>
<tr>
<td>Commonwealth Loans Programs (inc PELS)</td>
<td>5,259</td>
</tr>
<tr>
<td>Fees and Charges</td>
<td>46,485</td>
</tr>
<tr>
<td>Investment Income</td>
<td>5,036</td>
</tr>
<tr>
<td>Consultancy and Contract Research</td>
<td>2,254</td>
</tr>
<tr>
<td>Other Sources</td>
<td>24,679</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>213,154</td>
</tr>
</tbody>
</table>

It is interesting to note that of the HECS revenue, 23% (about $11 million) comprised student contributions while the remaining $48 million were Commonwealth Government payments. Of the fees and charges, fee paying overseas students contributed nearly $14 million.

5.5.2 Summary of Allocation Processes at University Alpha 2005
5.5.3 Top Level Resource Allocation

Revenue credited centrally

University Budget Committee decisions

Equipment Fund

Lump Sum Allocation - (support) Divisions

Process of negotiation based on previous annual allocations and specific bids

Divisional allocations

Academic Funding for Allocation to Faculties

RAM Elements include weighted student load, research and teaching performance, calculated at School level

Faculty allocations provided to individual Deans

Dean process for allocations to Schools within Faculty

School allocations provided by Dean to individual Heads of School

Research Funding for Allocation by PVC (R&T)

Pro Vice-Chancellor (Research and Training) Allocation process Board of Graduate Studies / Research Management Committee

Allocations provided at different levels (from individual staff and students to groups and centres) for various projects in research support and research training

Enhancement Fund

Divisional allocations

Lump Sum Allocation - (support) Divisions

Process of negotiation based on previous annual allocations and specific bids

Divisional allocations

Academic Funding for Allocation to Faculties

RAM Elements include weighted student load, research and teaching performance, calculated at School level

Faculty allocations provided to individual Deans

Dean process for allocations to Schools within Faculty

School allocations provided by Dean to individual Heads of School

Research Funding for Allocation by PVC (R&T)

Pro Vice-Chancellor (Research and Training) Allocation process Board of Graduate Studies / Research Management Committee

Allocations provided at different levels (from individual staff and students to groups and centres) for various projects in research support and research training

Enhancement Fund
In 2005 during the case-study period, Alpha operated a centralised system, in that revenues were received at the centre of the university and then dispersed. This section describes the process and resource allocation model used at the top level of the university.

As noted in the framework diagram 5.1 above, an initial split of budget was made as the first step in the allocation process, with three key sums set aside for separate allocation processes. The first of these was the funding for the divisions (in Alpha the divisions are the support service areas such as Finance and Human Resources). A second sum was set aside for allocation by the Pro Vice-Chancellor (Research and Training). This sum could be more than the actual sum earned through research activities, indicating high-level cross-subsidisation for research, demonstrating it was a strategic priority. The third sum was set aside for operational purposes for the academic faculties, and it was this part of the budget that was subject to a resource allocation model.

The resource allocation model provided one-line allocations to the level of divisions and faculties. In this context, faculties were the organisational units undertaking teaching and research and divisions were the support organisational units such as Finance, and Human Resources. Deans, Division Heads and the Pro Vice-Chancellor were provided with one-line allocations and were then responsible for managing those allocations within their units of responsibility.

5.5.3.1 Committees

Oversight of the resource allocation process rested with the University Budget Committee comprising the Vice-Chancellor, Deputy Vice-Chancellor (Administrative), Pro-Vice Chancellor (Research and Graduate Training), Executive Director Financial Services and the Executive Director Human Resources. This was the same membership as the regular Senior Executive Group, but operated in budget mode during the resource allocation process.

The Deans linked into the process through the Deans’ Group which was chaired by the Deputy Vice-Chancellor (Academic). This group received an annual briefing from the Finance Department regarding the financial position of the University plus advice on managing their faculty finances.
A Budget Review Committee met monthly and had the responsibility of reviewing performance, receiving requests for additional funds during the year, and advising the University Budget Review Committee on financial and resource allocation policy. The group comprised members with financial expertise, including the Executive Director, Financial Services, the Director, Finance, the Financial Accountant and the Management Accountant.

5.5.3.2 Process

Two points are worthy of notice about the top level process that preceded the distribution of revenue figures through the allocation model:

- A majority of research operating funds (as well as direct grants) were set aside at the top level, and were allocated through a process operated by the Pro Vice-Chancellor (Research)
- Staffing numbers were tightly controlled from the top. All areas of the University had to seek permission before creating new positions. This was because creating an ongoing role creates an ongoing liability, and salary costs were a major component of the budget.

In the first instance, the University Budget Committee determined the proportion of revenue that would go to:

1. Faculties
2. Divisions (the support and corporate areas of the university)
3. Research (the majority of research income including RTS and RIBG)
4. Equipment Fund
5. Enhancement Fund (strategic initiatives and capital development)

Non-faculty allocations were made either through allocations based on historical allocations (where the department did not wish to request additional special funds) or through submissions to the Budget Committee (where a department requested a change from ‘steady-state’). The senior executive felt that it was not necessary for every department to go through a zero-based budgeting exercise each year to decide allocations, and that instead it was reasonable to make allocations based on past history unless the department put forward a budget submission. During the budget formulation process there were a number of key dates for submissions, such as
requests for equipment funding or for minor building works, when departments could put forward bids. Non-faculty allocations, therefore, were made on a combination of previous allocations and specific requests.

For both faculty and non-faculty areas the budget process was linked with performance review and strategic planning. Each year the Deans and other Heads were interviewed individually by the Budget Committee about their faculty or department’s performance in the previous year against the university’s strategic plan. They were also asked about their planned activities for the upcoming year and how these would contribute to the University’s strategic plan. The budget and planning calendars were linked in order to make a close connection between resource allocation and the university’s overall strategic direction, with allocations made in close proximity to performance reviews.

While the Deans were not part of the Budget Committee, they did receiving annual briefings on the financial state of the university. The Executive Director, Financial Services, attended one Deans’ Meeting each year to ‘paint a picture’ about the financial health of the organisation, and provide information and advice about financial management, such as developing benchmarks. Financial Services also gave individual Deans information about expenditure patterns in their faculty (for example, expenditure on travel per staff member) but this information was shared between Deans only if the individual Deans agreed.

5.5.3.3 RAM

A resource allocation model was applied to the funding set aside for the faculties. Alpha’s Planning and Audit Office was responsible for operating the resource allocation model that provided a distribution of funds among the faculties. The key data in the model was the amount of actual weighted load taught by each of the faculties, calculated on a subject by subject basis. A description of the RAM follows.

A two-dimensional matrix was created to provide a weighting for each subject taught by the University. Two weightings were applied to each subject, a field of education weighting and a level of course weighting. For example, a business studies subject taught at undergraduate level would have a different final weighting to a similar subject taught at postgraduate level. The weightings that were applied derived from DEST’s
Relative Funding Model (RFM) developed in the late 1980s. Only taught load was put through the model, with research load funded separately through the office of the Pro Vice-Chancellor (Research and Training)

All subjects were allocated to schools, while all courses or degree programs were allocated to faculties. This meant that within each faculty, Heads of School knew exactly the proportion of the faculty’s total teaching load they were responsible for delivering, and therefore their nominal revenue allocation through the RAM.

Rather than using projected data for the coming year, the allocations for the following year were based on current year enrolments. The model used DEST Submission 1 data, that is, actual or true load for semester 1 and a best estimate of enrolments for the second half of that year. There was the flexibility, however, to project some development load into the following year where, for example, a new program was being introduced and the faculty could therefore be provided with seed funding. In the past the model used a two-year average of data, but at the time of the case study used a single one-year snapshot.

**Allocation Model Elements**

1. Base teaching funding calculated on weighted taught load
2. Allowance for Distance Education costs, allocated on the proportion of Distance Education load in each faculty
3. Loading for clinical placements and practicums. Acknowledges the additional costs in providing these to students and goes to the relevant faculties
4. Strategic initiatives in faculties
5. Research outcomes. In 2005 a $1 million pool was allocation proportionally according to research outputs.

The Deans could influence the model by requesting reviews of weightings although in practice this did not occur often.

**5.5.3.4 Performance and Incentives**
While the model used had been consistent for about ten years, a major change was introduced in 2004 when a performance component was established. Performance based funding was introduced at school level through declaring 15% of school allocations as vulnerable if performance targets were not met. Schools needed to meet performance targets in research development and in teaching development.

This decision reflected the strategic direction of the University. The Vice-Chancellor’s stated aim for the University was to develop its research profile and weight was added to this declaration by setting targets for schools and outlining financial penalties should those targets not be reached. A one-year ‘warning’ system was part of the process so schools had a chance to keep their funding by introducing strategies to meet their targets.

Performance targets for teaching were uniform across faculties, and took into account measures such as student evaluation of teaching as well as student evaluation of subjects. The process was public in that all staff could see how much individuals had contributed to achieving a school target.

Performance targets for research development were tailored for each faculty, with the faculty figure a consolidation of the targets set for each school. Research targets were tailored to take into account the different starting points and current different levels of research activity. The number of research active staff was critical to the performance target, and lists of research active staff were made public so staff were aware of who was (and who was not) contributing to achieving each school’s target.

In addition to the research development ‘at risk’ funds the University set aside $1 million in the 2005 allocation round for research performance. This funding was ‘off the top’ of the university budget and, reflecting the increasing importance of research to the university’s strategic development, had increased from $100,000 and $200,000 in previous years. The Vice-Chancellor was considering doubling this to $2 million for the following year. The research performance funding was administered by the Pro Vice-Chancellor (Research) and was allocated on a competitive basis on research inputs (grant dollars received) and outputs (publications).

University Alpha was also putting in place strategies to improve the quality of its research outputs. To this end a pool of $100,000 was to be distributed to designated research centres on the basis of an annual quality portfolio. The portfolio was to be
considered by an expert panel each year and would describe the ten best research outputs from the centre members from the previous year, with no more than two works presented by any single member. This scheme anticipated the research quality framework (RQF) exercise but also emphasised the importance of research groups and collaborations as well as individuals to the University.

‘Enterprise’ activities were those that were undertaken outside the operating budget. These activities were required to present annual business plans and budgets to the Finance Review Committee. Risk management was a major issue for the management of these enterprises, and Financial Services worked closely with them to ensure budgets and plans being proposed were satisfactory before enterprise figures were consolidated with the University budget and forwarded to the Budget Committee. This revenue was not, however, subject to resource allocation modelling.

### 5.5.4 Faculty Process

The resource allocation process in one faculty was examined as part of the case study. This process occurred below the line indicated on Diagram 5.1, in other words as a separate exercise to the first level allocations. The faculty included in the study had six schools across a very broad range of disciplines. Teaching and research activities were not evenly spread across the faculty because some schools had a much stronger research focus than others, while the student load also varied considerably among schools. In addition, the trend in the faculty had been for a slightly falling student load over recent years.

The Dean of the faculty received an allocation via the RAM for his faculty and schools which he was then able to allocate according to his own process. The university resource allocation model, however, used schools as the basis for faculty calculations, calculating allocations for each school which were then consolidated into a faculty allocation. These figures were public so that any shifts away from these RAM-produced allocations were transparent. This meant that the Dean’s decisions were also transparent as any cross-subsidies and ‘top slicing’ were immediately apparent.

The university budget model described above introduced a 15% ‘at risk’ performance element in 2004. As noted above, targets were calculated on a school by school basis, but consolidated at faculty level.
Also as noted above, the staffing establishment and profile were tightly controlled with an authorisation process at senior management level required for the approval of any new general or academic positions. With salaries a major component of any university budget, this kept a tight rein on one of the costlier elements of the organisation.

The faculty was provided with some certainty regarding its revenue streams in that the model provided for 70% of fee revenue to be returned to the faculty. This provided a direct incentive for attracting international students and local fee paying students into the faculty. Fees, though, were determined by a Fees Advisory Committee and not by individual Deans. The Fees Advisory Committee reviewed all the fees in the University and advised the Vice-Chancellor on suitable charges. Members of this group were drawn from marketing and international offices rather than faculties.

The model provided incentives for Deans to understand how competitive their course profile was by funding them on the students they had rather than the students they might have in the future.

The faculty listed its sources of income as:

- The operating grant from DEST delivered to the faculty via the university’s funding formula. The Dean noted the relative funding values were based on the RFM but had been ‘tweaked’ for local conditions.
- Fee paying activities such as offshore and onshore cooperative and partnership arrangements. In these cases the fees were received centrally and passed on to the faculty on a proportional model. The faculty argued in previous years that the proportion it received was too low to provide incentive to grow this area of the business, which led to the 70/30 faculty / central split in use during 2005.
- Fee for service arrangements. This was a small revenue stream and was subject to a 15% infrastructure levy by the centre.
- Research stream. The Pro Vice-Chancellor (Research) undertook an allocation process to allocate funding sourced from RTS and IBGS funds.
- Equipment funds.

The Dean noted research funding was an area of contention because in his view the faculty was not receiving a fair share of the research revenue it was attracting into the University. The University as a whole had made the strategic decision to strengthen...
research by diverting research revenue from being directly returned to the areas that earned it to allow a holistic, strategic approach to research growth. The Dean of the faculty, however, believed the balance had tipped too far away from returning revenue to those who earned it. He believed his was the most research-intensive of the University’s faculties; it had put considerable investment into the research area but this was costing the faculty an unreasonable amount given the lack of return it was receiving. Nevertheless, changes in the past two years meant that this problem had been reduced. For example, the faculties received a salary and an operating component for each postgraduate student being supervised. It was also the major beneficiary of the $1 million research performance allocation.

The 15% ‘at risk’ for teaching and learning performance was accountable at the level of individual staff members as well as at school and faculty levels. The Heads of School within the faculty met to decide how to achieve the targets and the contributions that could be made by each school. It was noted that no faculty had yet lost money through this scheme.

5.5.4.1 Faculty Process

The Deans Group met with the Director of Financial Services to discuss non-Government income estimates and target enrolments. The Deans were then provided with a figure from the resource allocation model. A reconciliation was undertaken towards the end of the financial year.

Once the Dean knew her/his allocation she/he moved from a funding model to a costs-based model to allocate funds to the individual schools within his faculty.

The Heads of School provided the Dean with individual budget submissions detailing their bids for the coming year. Thanks to ‘bare-bones’ cost-based budgeting exercises in previous years that had been undertaken to address debt, the Dean believed he had a reasonable idea of the minimum operating requirements for a school. This provided him with a benchmark to assess budget submissions by Heads of School.

The Dean met with the Heads of School as a group to discuss issues and the likely funding available to the faculty. Heads of School then negotiated their budgets with
the Dean on an individual basis and did not see the bids being made by other Heads of School.

With a diverse range of disciplines in the faculty, there was also a range of earning abilities, with some disciplines seen as teaching ‘cash cows’ and others seen as research intensive. This led to a diversity of expectations as well as a need to have risk management in place to deal with downturns in student demand in particular areas, or the loss of key researchers and their grants. It was important to ensure that all contributions were valued and to understand how different areas were ‘paying their way’.

Major equipment funding was provided as a separate line item to the faculty and schools while research centres could submit a bid for funding.
5.6 Case Study Report – University Beta

Diagram 5.2: University Beta Resource Allocation Framework

Revenue identified centrally
Revenue attributed to Faculties

RAM
Elements include attribution of revenue and costs, performance factors

Attribution of central costs

Lump Sum Allocation - (support) Divisions

Process of negotiation based on previous annual allocations and specific bids

Divisional allocations

Strategic reallocations based on performance, cross-subsidies

Faculty allocations provided to individual Deans

Dean process for allocations to Schools within Faculty

School allocations provided by Dean to individual Heads of School
University Beta adopted a new university-level budget model for the 2005 allocations moving from a centralised pooling of revenue to a process where all revenue can be traced to its source. In its 2005 Beta Budget and 2006-2007 Forward Estimates document, the University outlined the problems identified in the previous model.

### 5.6.1 Top Level Allocation Model

#### 5.6.1.1 Previous Top Level Model

The previous model meant it was difficult for individual faculties to trace either their contributions to the University budget or the rewards flowing from the revenue generated by a faculty, which may have resulted in less incentive to increase revenue. It also meant the central and corporate areas of the University appeared to have ‘first claim’ on funds, with the teaching and research areas receiving their funding from the balance remaining. This could lead to the appearance of central areas taking priority over academic areas, with resulting disquiet in the teaching and research areas. In addition, faculty funds were allocated on historical weighted equivalent student loads, and all central costs were allocated on this same basis.

The 2005 budget document outlines other problems with the previous model (p2):

- it did not take into account that, with Federal Government changes in funding, students as well as staff could now trace the value of their enrolment to the University. With this increased transparency came an increased accountability that a reasonable amount of ‘their’ money would be forwarded to their faculty for their education
- the previous weightings system was no longer related to funding, and therefore “continuing to distribute funds on the basis of the previous weightings is applying an implicit subsidy to some faculties over others” (p2)
- there was no direct relationship between consumption of central resources and the contribution made by faculties to those central costs. Costs were spread across all faculties regardless of whether they were the chief consumer of a service or never used it at all
- with no explicit value assigned to central costs such as space occupancy, there was no incentive to value space, even though it was a considerable central cost. Charging for space encourages a more thoughtful use of the resource and a better distribution by current need rather than past occupancy
• “budget unit heads had very limited control over major budget drivers including revenues or their share of central costs. The former were pooled and allocated based on metrics other then the revenue attracted, while the latter were allocated based on weighted load rather than consumption within the budget unit.” (p2)

5.6.1.2 University Allocation Model, 2005

Diagram 5.5 illustrates the flow of revenue through University Beta’s General Fund Budget. Before revenue was put through the model, however, some was isolated for allocation through other processes. This included revenue received through the Research Infrastructure Block Grant, DEST earmarked funding, investment income (a departure from the previous model) and other miscellaneous income. Note also that, as in most universities, research grants and other tagged income was not included.
The first step in the resource allocation model was to assign income to faculties. This transparency allowed each faculty to understand its monetary value to the University both in total and in comparison with other faculties. All members of the University could see clearly which faculties were the key revenue generators. Income included came from the Commonwealth Government, from HECS contributions paid by students, from international and local fee paying students, from the Research Training Scheme and Institutional Grants Scheme (both of these are Commonwealth funding schemes).
It is interesting to note that the RTS funding was not assigned to faculties on the same basis as that on which it came into the University. The University’s distribution “provides incentives that emphasise HDR (higher degrees research) completions within a two-year and four-year period and research publications” (p40).

Deductions were then made from the gross revenue attributed to faculties to support overheads, academic services and activities and non-faculty areas. These were calculated according to cost drivers as indicated below (table from p42):

Table 5.10 University Beta Cost Drivers

<table>
<thead>
<tr>
<th>Basis of sub-allocation to faculty</th>
<th>Initial determinate of cost allocation based on</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching &amp; scholarship revenues (DEST, ISFEE &amp; LFEE)</td>
<td>Gross revenue</td>
</tr>
<tr>
<td>Research revenues (RTS &amp; IGS)</td>
<td>Gross revenue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bank charges &amp; revenue collection</th>
<th>Gross revenue</th>
<th>Gross revenue</th>
<th>Gross revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>International alliances</td>
<td>$150 per ISFEE EFTSL</td>
<td>$150 per ISFEE EFTSL</td>
<td>nil</td>
</tr>
<tr>
<td>Student support and marketing</td>
<td>$1,000 per ISFEE EFTSL or $500 if via Foundation Studies</td>
<td>$1,000 per ISFEE EFTSL or $500 if via Foundation Studies</td>
<td>nil</td>
</tr>
<tr>
<td>All other overheads</td>
<td>Gross revenue</td>
<td>50% gross revenue &amp; 50% taught EFTSL</td>
<td>Gross revenue</td>
</tr>
<tr>
<td>Buildings &amp; Grounds</td>
<td>m2 net useable floor area</td>
<td>50% gross revenue &amp; 50% taught EFTSL</td>
<td>Gross revenue</td>
</tr>
<tr>
<td>CATS (Centrally Allocated Teaching Space)</td>
<td>Avg S1 &amp; S2 ‘03, S1 ‘04 hrs used</td>
<td>50% gross revenue &amp; 50% taught EFTSL</td>
<td>nil</td>
</tr>
<tr>
<td>Library, Academic Services &amp; Other Academic Activities</td>
<td>Gross revenue</td>
<td>50% gross revenue &amp; 50% taught EFTSL</td>
<td>Gross revenue</td>
</tr>
<tr>
<td>Student Administration Department</td>
<td>Gross revenue</td>
<td>Taught EFTSL</td>
<td>Gross revenue</td>
</tr>
<tr>
<td>Human Resources</td>
<td>FTE academic &amp; general staff</td>
<td>50% gross revenue &amp; 50% taught EFTSL</td>
<td>Gross revenue</td>
</tr>
<tr>
<td>All other non-faculty</td>
<td>Gross revenue</td>
<td>50% gross revenue &amp; 50% taught EFTSL</td>
<td>Gross revenue</td>
</tr>
</tbody>
</table>

The next set of deductions were for capital projects (a 7% charge on gross Commonwealth course contributions, student contributions, international and local fee revenue), IT projects such as upgrading and renewal of systems and infrastructure (2%...
on the same revenue) and scholarships ($1,000 per EFTSL from local fee paying undergraduate revenue).

University Beta aimed to reward faculties that attracted students through their reputation and marketing even though those students might be taught some subjects in other faculties. It also discouraged the ‘cottage industry’ practice of faculties creating subjects to keep students within the faculty instead of using the expertise of other faculties. A ‘generated load redistribution rate’ was calculated and then applied to faculties “by multiplying the generated load redistribution rate by the net of generated undergraduate EFTSL less taught undergraduate EFTSL” (p43). Further redistributions were made for the General Education Program and Exchange Load based on taught load and actual load respectively.

20% was deducted from Commonwealth course contributions, student contribution and international and local fee revenues to support strategic and performance initiatives, a 2% Safety Net and Faculty Sinking Funds. A ‘faculty sinking fund’ was identified for those faculties which under the new budget model benefited from a significant increase in funding. Whilst each individual faculty would retain full access to all of the funds set aside in the “faculty sinking fund”, the intent of the “faculty sinking fund” was to ensure that the Dean worked closely with the Vice-Chancellor and senior management in deciding upon the purposes for which the “faculty sinking fund” would be used within the faculty.

A safety net was designed to ensure that, with the introduction of a new model, individual faculties would not receive less than 98% of their 2004 allocation.

5.6.1.3 University-Level Incentives

As noted, University Beta introduced a new resource allocation model for the 2005 academic year. It was based on the principle of revenue being returned to the areas that earned it, and with cost elements being removed from those earnings.

For the first time, the University charged for space. The Vice-Chancellor made clear in his interview that he did not see this as a rental charge but as a service charge, and consequently all spaces were charged at the same rate regardless of the quality of the building. The service charge aimed to cover costs such as cleaning, electricity and
security, but also has the strategic aim of encouraging faculties to think about the space they occupy and use it wisely. Space is a cost to the University, in terms of servicing and maintenance, and encouraging sensible, even frugal use of this resource was expected to help to contain University costs. When there was no direct link between ‘off the top’ costs to faculties and the space they occupied it was more difficult to get faculties to think strategically about the space they occupied. Once the costs were presented clearly to them on a spreadsheet they were able to understand that the total cost of running the faculties consisted of more than salaries and direct costs.

With the introduction of a new resource allocation model in 2005, University Beta also introduced some clear performance funding, in the form of two research performance funds and one teaching and learning fund.

A total of $59 million was set aside for 2005 to be allocated to the faculties on a competitive basis. $20 million was allocated on the basis of research performance, $20 million on the basis of research active staff, and $19 million on teaching and learning indicators.

All faculties contributed a proportional amount to the competitive pool from their operating grants. For example, the larger Faculty of Engineering contributed more in dollar terms than the smaller Faculty of Law. Each faculty was assessed on a number of performance measures, and received either more or less than the amount it had contributed into the pool depending on whether it was above or below the University average.

The ‘research activity’ redistribution was based on the proportion of research-active staff weighted by each faculty’s proportional contribution to the $20m (2005 budget p44).

‘Research Output’ funding was distributed to faculties based on RTS and IGS funding. RTS funding was (p40) distributed on a basis different from that on which it was earned from the Federal Government. The University wished to emphasise the importance of research completions, and therefore RTS funds were distributed with the following percentages applying: Higher Degrees Research enrolments 60%, Higher Degrees Research completions 20%, Research income 10%, Research publications 10%. IGS funds were distributed using the same percentages as those used by DEST (30%
Higher Degrees Research enrolments, 60% research income and 10% research publications).

In addition to the $40 million distributed on the basis of research performance, an additional $19 million was distributed on the basis of teaching and learning performance.

5.6.2 Second-Level Allocations

University Beta clearly stated that it does not prescribe how Deans should allocate funding to activities within their faculties and the budget document noted “it is solely at the discretion of the Dean or Head of Division whether budgets, and their management, are further devolved below faculty or divisional level” (p37). With this devolution also comes responsibility: “It is also the responsibility of the Dean or Head of Division to monitor, report on and manage budgets that have been devolved below faculty or divisional level”. Support was also offered as “the Division of Resources provides systems and support that assist this devolved management”.

Two Deans were interviewed for the purposes of this research. The processes used in each faculty were quite different and are outlined in this section. Both Deans started from the basis of earned revenue, to provide guidance and information on how their school budgets might be allocated, but then applied different processes to achieve final allocations. While one held salaries centrally, providing tight control over the largest type of expenditure, the other devolved this to school level.

5.6.2.1 Faculty 1

The key feature of the faculty’s budget model was that all continuing salaries were paid centrally. In reality, this left little for dividing among the schools.

The Faculty compiled a ‘virtual budget’ using a model similar to that of the central University model. The Faculty calculated the revenue attributable to each school, and then deducted overheads as with the University budget model. In Faculty 1 additional revenue is earned from business activities, GATSEC (gifted and talented students extension classes), short courses and training programs, and research grants. An
additional 15% contribution to the Faculty for various expenses such as travel, dealing with occupational health and safety issues and contingencies was also deducted.

Salaries were then attributed to schools and deducted from the net revenue, leaving an operating amount for each school, which was often relatively small. These operating amounts were not allocated automatically; each Head of School was required to put forward to the Dean a budget of how this amount was to be spent. This method was adopted because previously, when schools received the funding as a lump sum, it was found their practice was to put much of the funding towards casual teaching costs to free up the time of tenured academics for activities other than teaching. This was a practice the Dean wished to discourage, hence the requirement for budgets.

The 15% overhead for Faculty purposes supported funding for travel, as travel would not be approved from school funds. The Dean found that individuals were bypassing the committee approval system for faculty travel, and spending school funds on trips that might not have been approved had they been scrutinised by the Faculty.

Nevertheless there were some restrictions on the Dean. For example, the Enterprise Agreement gave control over workload models to the schools.

The Dean of the Faculty 1 was appointed three years previously as an outside appointment. She designed the model used in the Faculty, changing it from the previous model that was based on student load. She noted that the process was ultimately a human one, as there were specific circumstances at Faculty level that needed to be dealt with, and strategies that as Dean she wished to emphasise.

The previous model embedded divisions between schools which competed for students. There was a proliferation of subjects that occurred because each school wanted to teach as many students as possible, given this was the way to increase funding. This was despite the University having a policy that a certain amount of each student's program had to be undertaken in another area. Given that academic accreditations were the responsibility of Curriculum Committees reporting to the Faculty Education Committee, the Dean found it difficult to intervene directly in this behaviour. She also found that some schools had managed to acquire major surpluses where others had none.
The Dean reviewed the budget model and used a change in model to encourage change away from these behaviours. The Dean talked about the degree of resistance she encountered in introducing change; she brought in changes to bring the budget under control but met with some resistance from her Heads of School.

5.6.2.2 Faculty 2

In Faculty 2 the Dean also used a broad principle of allocating faculty funds to schools on the basis of their earnings. Faculty 2 differed from Faculty 1 in that salaries were not paid centrally by the faculty, but by schools out of their allocations. As in most universities, salaries comprised a very large proportion of expenditure, and the Dean discussed the difficulty of reducing this percentage when the responsibility for employment decisions was devolved to the schools. It meant the Dean taking a strong leadership role in working with schools to manage their budget allocations in a time of tight financial constraints.

The Faculty had financial issues that needed addressing, and a business case had been drawn up to reduce expenditure by about $7 million over the following two to three years. Because salaries were a large component of the expenditure, this was naturally causing some anxiety amongst faculty staff. While in a delicate financial situation, the budgeting processes required that all major expenditures by schools be approved by the Dean.

The Dean described an iterative process whereby Heads of School crafted a budget and then worked with the Dean and each other to resolve final allocations. It was not a zero-based budgeting process because this would have been a very large task; instead all parties examined the expenditure from the previous year, looked for possible variations on that and decided whether these were justified or not. Budgets were considered by the Faculty Executive and at school level within their senior management groups. Key staff included the Dean and the Heads of School.

As with Faculty 1, in Faculty 2 the Dean kept a percentage of between 5% and 10% before making allocations to schools. He described in general terms the issue of making strategic decisions including, for example, providing a cross-subsidy to one school that was not bringing in enough revenue to cover its costs while working concurrently with that school to reduce its dependency on this subsidy.
An additional problem for the Dean was that workload models varied between schools in the faculty, so costs presented in budgets by the Heads of School could be difficult to compare. This is in contrast to the University Gamma second-level process which had managed to agree on a set of ‘rules of engagement’ so valid comparisons could be made.
5.7 Case Study Report – University Gamma

Gamma University changed both its university level and next level resource allocation models in 2004 for use with the 2005 allocations. The changes were made for a number of reasons, including improving transparency and incentives (particularly at the university level) and because a restructure meant that performance data used in a previous model was not available. Both the new and previous models are described briefly in this case study report.

5.7.1 Summary of Allocation Processes at University Gamma, 2005

The diagram below maps the resource allocation process at Gamma, with key points discussed in the sections as marked.

Diagram 5.4: University Gamma Resource Allocation Framework
5.7.2 Top Level Resource Allocation

5.7.2.1 Description of Previous Model

Prior to 1999 University Gamma used a resource allocation model based on the Commonwealth Government’s 1990 Relative Funding Model, commonly referred to as the RFM. The RFM assumed that students in different academic disciplines cost a university different amounts to teach. A Commonwealth costing exercise in the mid-1980s was used to determine how much a student in each discipline cost to teach relative to other disciplines. Business students, for example, were assumed to be less expensive to teach than engineering students because of differing equipment and laboratory needs. Put simply, the amount of funding allocated for teaching to each public university in Australia was based on an agreement (a ‘profile’) of the number of students in each discipline that each university was expected to enrol.

The University resource allocation model mirrored the Commonwealth funding model, allocating funds to the higher education schools on the basis of the RFM and the number of students in each particular discipline that the school was actually teaching. Prior to these allocations an ‘off-the-top’ amount was removed to support corporate areas (such as Human Resources, Finance, Registrar’s Department, Library, IT Services and Facilities) and to pay for university-wide costs (such as cleaning and electricity).

The model operated as a centralised revenue model, with funds generally being received at the centre of the organisation and then allocated out. Some research and consulting monies were excluded; these were generally ‘tagged’ funds, assigned by outside bodies to particular projects. The model operated on a decentralised responsibility and accountability basis whereby it was the responsibility of managers within schools and divisions to ensure they operated within their allocations and did not accumulate deficits.

In 1998 the University recognised that the resource allocation model was no longer fit for purpose.

Deficiencies identified in the Gamma model included:

- The allocation model was not adequately linked to the strategic direction of the university
The basis of strategic allocations (also taken ‘off the top’) was not clear
The Commonwealth Government was moving towards performance based funding to universities and it was felt this ought to be reflected in the university’s internal funding model
The RFMs no longer accurately reflected actual teaching costs, given the changes in teaching methods, particularly with the adoption of new technologies
The model did not take into account the different mix of activities in different schools. For example, the model assumed that all academic staff in every school were undertaking the same mix of research and teaching activities, although in reality research activities were more heavily concentrated in some areas
Schools with small student numbers were particularly vulnerable to funding fluctuations
There were few incentives to increase the amount of self-generated (non-government) revenue
There was a lack of transparency, particularly with regards to ‘off the top’ amounts and allocations to corporate and university-wide costs.

In consequence a review of the University funding model was commissioned in 1998 and in 1999 the first phase of a new model was introduced (Review of University Funding Model, September 1998, p4).

The structure of University Gamma needed to be reflected in the University funding model. In 1997 the University structure changed with a reorganisation of higher education activities and the appointment of Divisional Deputy Vice-Chancellors (DDVCs). The reorganisation resulted in the creation of two higher education divisions, a TAFE Division and a Corporate Division. Divisional Deputy Vice-Chancellors were appointed to the three teaching divisions and they took up their positions in late 1997.

From 1998 to 2000 the DDVC of the Higher Education Division (HED) used the university funding model to allocate funding to the eight schools comprising the Higher Education Division. This changed for the 2001 allocations, when HED moved to a process whereby the DDVC received a block grant and the discretion to make his own internal allocations.
The work done in 1998 for 1999 helped to set the framework for the following year, when phase two of the review of the University funding model took place. The aims of this second phase were to address three main areas that had not been fully addressed previously:

1. The allocation of costs for corporate services between TAFE and higher education funding streams
2. Differentiation between the missions of the various schools in the HED
3. Introduction of a performance element into allocation of the teaching and learning streams in schools.

(Review of University Funding Model Phase Two, October 1999, p1)

The first issue looked at the total revenue earned by the higher education and TAFE sectors and then worked out how much from each stream should be diverted from the teaching divisions to the support areas of the University. One of the major tensions and balancing acts in a university is the balance between paying for corporate and support services and channelling funds to the core academic functions. In this model a series of discussions would take place to decide the total amount allocated to University services, after which this total amount would be debited against TAFE and higher education according to a cost driver model.

As in the previous year, the University service costs were decided first, then the remaining funds allocated through a revised model. Course development was included with course delivery funds, as it was agreed basing funding on subject numbers did not encourage efficiency gains.

A number of modifications were suggested, and some were adopted, regarding the detailed weightings for particular disciplines and level of program, and for the particular missions of different schools, differentiating between those which were deemed to have more emphasis on research and those with an emphasis on teaching. In addition, three research institutes were included within the HED original allocation, although their funding was based predominantly on research performance rather than teaching performance.

A detailed performance model for allocating available teaching funds was produced, using output measures such as subject evaluation data, student progress, retention rates and graduate employment rates to divide teaching funds between the eight HED
schools. Research funding was based on performance measures that included research income earned, publications, research degree completions and the number of active researchers in each school. The first three of these measures were also used by the Commonwealth Government in determining some of the research funds to the university, while the last measure was designed to increase the number of active researchers at Gamma.

In the event, this system was used for one year only (for budget allocations for 2000) as the HED developed its own internal budget model for 2001.

5.7.2.2 Critique of Prior University Model

By late 2002 a number of problems were becoming apparent with the then-current university funding model:

- Lack of transparency. Rather than being a problem with the model itself, this was an issue of communication and disclosure. Moves were made to increase transparency by providing all University Gamma staff with detailed spreadsheets of the 2003 budget allocations.

- Lack of incentive to raise self-generated revenue. As noted previously, above-target revenue was felt to be unpredictable because of factors such as increasing targets and calls on the above-target funding pool significantly reducing incentive payments. There were also difficulties reconciling the student administration and finance information systems.

- There was a blurring of corporate and university-wide costs, and lack of clarity on the cost-drivers for the university-wide costs (which determined how costs were debited against income and the contributions made by the revenue generating areas of the organisation).

- Difficulties with determining TAFE contributions given their complex funding system and need to compete with TAFE institutions that are stand-alone rather than part of a university.

- The increasing percentage of revenue allocated to ‘strategic initiatives’ (ie allocated for specific purposes rather than mainstream activities).

- Unclear financial data making management decisions difficult.

(adapted from unpublished paper by the Deputy Vice-Chancellor, December 2003)
5.7.2.3 Description of Current Model

In response to these concerns, the University Gamma university-level model introduced for the 2005 allocation was one that provided given percentages for disbursement of funds depending on the sources of the funds. The University split funds into two key types, growth and non-growth. In order to provide incentives for the revenue generating areas of the University (essentially the teaching and research areas), the resource allocation model provided a greater rate of return to the revenue generating areas on funding streams with the potential to grow than those with less growth potential. Three-year forecasts were made in all revenue categories in order to provide some longer-term indications of budget allocation.

Most government teaching-related income was regarded as non-growth, including the DEST recurrent grant and some specific purpose DEST grants such as equity funding, indigenous support and some workplace reform funding. Growth funds were primarily student fees from both local and international students, but also included off-shore programs, and consulting and commercial activities, including the development of research into applied uses.

The non-growth funds were split on a 53/47 basis between central or corporate activities and the teaching divisions. This meant that for each dollar into the University, the ‘core business’ areas received 47c while the support areas received 53c. However, the return of growth revenue was higher for the teaching and research divisions, with 65% of local growth revenue and 55% of international revenue being returned to the divisions that earned it. By having these rates known in the University, the model aimed to be predictable and transparent.

The university model also needed to deal with funds that did not come through the central University allocation system. While some funds went into the centre first and were then disbursed around the University, there were some funds that went directly to the teaching or research areas and a contribution from those funds was then transferred to the centre. Other sources of revenue were given special status for a period of time whereby they were levied at a lesser rate than might otherwise apply for a predetermined period of time.
For example, research funding was paid directly to research areas by companies and grant organisations. In this case, where the organisation providing the grant allowed it, a 10% infrastructure contribution was provided to the central pool.

In other cases a program with fee paying students could be provided a special arrangement whereby a larger percentage of funding was returned to the teaching area. This was normally a strategic decision and made, for example, to support the development of the program or to support a strategic development elsewhere in the same faculty. These arrangements were normally made for a limited period of time, such as three years, after which the university resource allocation model percentages applied. By having these exceptions to the model, individual faculties or departments were encouraged to develop revenue generating activities.

Once the resource allocation model applied the percentages to the sources of revenue, these were then split between the divisions in the central and corporate area and the faculties in the teaching and research areas.

While the percentage model applied to forecast revenue, funds earned in addition to those forecast were not allocated automatically according to formula but were instead subject to strategic decisions and bids. The Executive Group of the University (the Vice-Chancellor, three Deputy Vice-Chancellors, two Pro Vice-Chancellors) plus the Director Finance comprised the Budget Committee. This met during the second half of the year to agree the University budget. While the percentage allocations made the funds for teaching and research faculties fairly clear, there were strategic decisions to be made regarding the use of some discretionary funds, and for the use of funds within the corporate and support areas. By this means the process combined both a ‘mechanical’ allocation approach and a strategic decision approach.

5.7.3 Division Level Process and Model

Rather than allocating funding directly to the faculties, the University funding model provided a one-line budget allocation to the Deputy Vice-Chancellor (Higher Education Division) who then had a budget allocation process of his own to decide how the Higher Education Division allocation would be shared across divisional activities.
In late 2004 a new resource allocation model and process was introduced. The change was made for two key reasons:

1. The Division underwent a reorganisation that transformed eight schools and three research institutes into five faculties. The resource allocation model used in previous years relied heavily on data collated for school and institute performance. Historical data could not be reorganised to reflect the new faculty structure.

2. The previous Divisional resource allocation model had been in operation for four years and some flaws were becoming apparent.

Prior to 2000, school and institute budgets were allocated at Vice-Chancellor level through the University allocation model. In 2000, the Deputy Vice-Chancellor of the Higher Education Division requested a change in the budget process so the DVC was provided with a one-line budget for the Division that could then be allocated among schools and institutes at his discretion.

### 5.7.3.1 Previous Second-Level Model

In the second half of 2000 a spreadsheet was designed to allow a transparent process for HED disbursement of funds. Lack of transparency had been highlighted as a major flaw in the previous process.

The first Higher Education Division model had a number of performance indicators and incentives built into it that reflected the strategic decisions of the time. The initial allocation was split into two sums. The greater part of the allocation was described as ‘in-target’ and took into account the amount of revenue the Division was certain to raise in teaching DEST, local fee paying and international fee paying students. A second smaller amount of ‘above-target’ funding was allocated at the beginning of the year. This was a return of revenue on the more ambitious targets for international and local fee revenue. A reconciliation later in the year would determine whether the Division had performed up to these expected targets. Should the Division perform beyond these targets, it could expect a further allocation, but if it had not performed to those targets, some return of funds to the centre could be required.

Initially, allocations were made from in-target funds for operating the Divisional Office and the three research institutes. This funding was negotiated and agreed by the key
management group of the Division comprising the DVC, the Heads of School and the directors of research institutes. Initially the research institutes had been given a 5.6% share of the in-target funds, but in later years this percentage split was set aside in favour of a negotiated lump sum. Also taken out of in-target funds was a lump sum ‘overheads’ amount for each school to pay for the salaries of the Head of School, the School Administration Manager and a Personal Assistant to the Head of School. It was agreed that, regardless of the size of the school, these were three essential positions.

The remaining in-target funds were then split as follows:

- 1% allocated according to enrolled load, acknowledging that while the majority of funds were allocated according to taught load, the enrolling school carried the responsibility for student and program administration
- 5% to teaching quality based on student feedback surveys, to indicate the importance of teaching in the Division
- 19% to research performance, reflecting the importance the Division and the University placed on developing research
- the remainder of funds allocated on the basis of weighted taught load in each school.

The ‘above-target’ funds were allocated on a proportional basis, according to the proportion of the total ‘above-target’ revenue each school was forecasted to earn.

The 1% pool of funds for student administration was allocated on a simple proportional basis, dividing the amount of funding available by the number of enrolled EFTSL in each school.

The teaching quality pool was allocated on relative performance among schools over the previous three semesters of pre-existing student feedback results and the percentage return rate of surveys. This encouraged schools both to improve their teaching quality but also demonstrated the importance of conducting the feedback surveys. Each of the three semesters was weighted equally.

Increasing the research intensiveness of the University was a stated goal from the time of the achievement of university status in 1992. To this end a large pool of funding was set aside for allocation on the basis of relative research performance between the schools. Notwithstanding the role of the research institutes, a great deal of emphasis
was placed on grass roots researchers in the schools developing the research profile of the University, and the resource allocation model was designed to reflect this. It stated clearly which categories of research performance would be rewarded, and the amounts allocated on the basis of performance.

Research performance was based on a number of categories, and in order to take into account annual fluctuations in resource outcomes and to mirror the Commonwealth Government funding model, the HED model weighted three year’s worth of research outcomes, with the more recent outputs more heavily weighted. The available pool of funds for research performance was divided into several smaller pools and then allocated on relative performance between the schools in:

- Publications and (for the Design discipline) exhibitions
- PhD & Masters thesis completions
- National Competitive Grants and other research grant income
- Number of National Competitive Grants submitted in past year
- Number of ‘research active’ staff.

The pool of funding for in-target taught load was allocated proportionately across schools on a target weighted EFTSL figure. These target numbers were calculated using projection models and ‘best estimates’. It was considered more strategic to allocate on target load rather than actual load for the current year because it allowed for expected shifts in load between disciplines and for the introduction of new programs.

A number of elements went into the weighted EFTSL figure including actual taught load figures for previous years, relative funding model weightings, and additional weightings for type of student (international or local) and level of enrolment (undergraduate, postgraduate coursework and research).

The HED model had a ‘buffering’ line that, in effect, made explicit the cross-subsidies that occurred across the Division. Initially it was agreed that no school should suffer a greater than 7% decrease in the budget allocation in any one year, and the buffering line was used to implement this policy. For the 2004 allocations, the buffering line was used to ensure that, as agreed between all Heads of School, all schools would receive a minimum 4% increase in budget.
In addition to the allocations received through the HED model, schools and institutes had other sources of income throughout the year that were allocated according to different guidelines depending on the source of funds:

- DEST over-enrolment income
- DEST equipment budget
- international over-target income
- domestic fee-paying over-target income
- carry-forward of unspent funds from the previous financial year
- other self-generated revenue, such as short-course income
- fee-income from a number of tagged courses outside the pooled funds, as agreed by Chancellery.

Finally, schools also received income throughout the year in the form of research grants from industry or government bodies. These funds were usually tagged to a specific research project and could not be expended outside that project.
5.7.3.2 Problems with Previous Second-Level Model

There were problems with the model:

- It was seen to disadvantage business and other disciplines with low RFM weighted subjects
- It was difficult for schools with lower research performances to envisage ever receiving an increase in research funds because while they were improving their performance the stronger research schools improved even faster
- The buffering line meant allocations were not in fact reflecting the outcomes of the model.

There were also some advantages of the model:

- It built up a useful set of performance data for all the schools
- It was transparent and communicated clearly what the Division considered to be strategically important
- It was predictable.

5.7.3.3 Second-Level Model for 2005

With the reorganisation of the Higher Education Division in late 2004, a new model was required for 2005 allocations. While the previous model had used data sorted by school and institute, these data were not available sorted by the new faculty structure, so that only a pared-down performance model was possible.

In the event, a number of simple model calculations were made and then faculty allocations were decided during a number of meetings between the DVC, Deans, the Director Operations and Planning and the Divisional Finance Manager.

The first set of calculations looked at how much revenue in each category each faculty was likely to earn, and then using the University percentages (47 / 55/ 65 as noted in Section 5.7.2.3) calculated how much revenue each faculty might receive on this basis. The second set of calculations looked at the amount of weighted taught load in each faculty, and divided the available funds according to the proportion of weighted load in each faculty. The third method employed was a zero-based budgeting approach, where the costs of operating the faculty were calculated. This involved devising salary
spreadsheets, calculating sessional costs, and then developing a number of common expenditure categories for all faculties and estimating the budget needed in each one.

The three methods used yielded results that were broadly similar so that once the initial figures were calculated, the final allocations were made as a result of negotiation and agreed strategic aims. The revised resource allocation process was therefore a human-based process with some modelling to inform the process, rather than one that relied on a resource allocation model.

5.8 Chapter Summary

Chapter Five has provided the case study accounts of the selected Australian universities, providing an outline of their resource allocation methods at University and Division / Faculty / College level. This provides the background to the analysis that is provided in Chapter Six.
Chapter Six: Discussion of Findings

6.1 Introduction to Chapter Six

Chapter Six provides discussion of the case studies described in Chapter Five.

It is divided into two main sections:

- 6.2 offers the within-case discussion, examining each of the case studies
- 6.3 provides across-case discussion, and is divided into two key sections, examination of the resource allocation models themselves, and then the processes and framework surrounding the model.

6.2 Within Case Analysis

6.2.1 University Alpha

The issue of research funding at University Alpha illustrates the difficulties of balancing
1) The rewarding of current performers against the encouraging of prospective performers, and
2) when the available funding is received predominantly on achieved performance measures it can involve the subsidising of potential from funds won by actual performers, with the danger of putting the latter off-side.

The Vice-Chancellor, with the support of Council and through the efforts of the Pro Vice-Chancellor (Research and Training) was aiming to broaden and deepen participation in research activities throughout the University, encouraging areas with little tradition in research to become actively involved. In order to do so, funding was set aside at the top level for encouraging research development.

Indeed, the Vice-Chancellor had identified non-participation in research as one of the University’s major risk factors. Given the choice between teaching only, and investing in research, the Council supported research in order to secure the University’s future. The Vice-Chancellor’s own assessment was that , within the UNS
“we accept that we need to get into the middle third because the bottom quartile is gone, the third will disappear, highly likely. The middle third may survive. And we’re on the border of the third and the fourth quartile”.

From a strategic point of view investment in research was important, but one faculty with a history of research achievement felt it was going unrecognised, and was not receiving a return on its investment in research.

This problem was addressed to some extent by the introduction of increased performance funding for research. The faculty was able to negotiate from a position of strength for a larger share of research funding, and achieved some of this increase through its share of an increasing performance-based pool of research funding. That scheme was established in such a way as to reward current, rather than potential, performers.

Sourcing funding for incentives is difficult where budgets are tight, because it means not returning fully the rewards to those who directly earned them. The interviews indicated that participants were happy to cross-subsidise their colleagues and indeed saw this as important, but nevertheless expected to see a reasonable return on their own investment in research. In this case, 70% of earned funding coming through to the area that earned it was said to be reasonable.

Managing conflicting demands of potential against demonstrated achievement in research requires transparency of process, support for and clear communication of the priorities of the organisation, and the management of the expectations of the people involved.

An interesting tactic was that of offering two types of incentive. The $1million fund was a straightforward ‘competition’ between the faculties based on research performance. If a faculty accounted for 10% of research performance (completions, funds attracted and so on) then it took 10% of the performance fund. The 7½% ‘at risk’ factor in the operating budget aimed at encouraging research active staff was, as their Deputy Vice-Chancellor (Academic) noted “not so much contestable as kind of losable if they (the faculties) don’t meet performance based funding criteria”… “it’s designed to make people reach certain minimum standards”.

The DVC (Academic) also referred to one of the problems of competitive funding among faculties – that when one or two faculties weaken in the competition “they would really be on a slippery slope, because they start to lose funding and then find it harder to catch up”. He spoke of using targets and competitive funding to underline priorities and give legitimacy to intervening in a school:

"Use that as an opportunity to intervene and say what the heck's happening...why aren't you able, you know, to deliver on these sort of minimal kind of research targets, all these teaching performance tasks”.

It is interesting to note that University Alpha has a centralised process for approving staffing positions. Given that a large proportion of expenditure in universities is on staff, this is a simple strategy for keeping a tight rein on costs. Putting in place a process requiring active sign-off for on-going positions means that continuing costs have to be considered before a commitment is made.

In the Vice-Chancellor’s view, the model was helping to drive change “but not fast enough.” He wanted to introduce efficiencies: “I need to put some disincentives in there for the number of subjects we teach”, but did acknowledge that changes introduced into the model, particularly performance funding, was driving the behaviour he wanted to encourage: “they’re now comparing between schools who is research active and who is not”. Other efficiencies under consideration included better aligning the teaching and research disciplines, and reducing the number of subjects in a program (by increasing enrolment numbers in subjects and decreasing the number of subjects, a university may find efficiencies in subject and program administrative costs. It may also, though, limit flexibility and student choice in programs).

He believed that, while the model and process used had remained reasonably consistent, the transparency associated with the budget process had increased: “I say ‘this is the money that comes through the formula’ ...I tell them how it gets there”.

All the interviewees at Alpha spoke favourably about transparency in the resource allocation process. They saw it as important and useful, and solving more problems than it caused. For example, the Deputy Vice-Chancellor (Academic) noted that all Heads of School could track the revenue they generated for the University, and compare this with the funding they were given, to see to what extent they received or paid for cross-subsidies.
“We don’t have any secrets. So.. and as I say there were some.. people thought, you know, there would be blood in the streets but it hasn’t happened at all, but people.. because I think generally speaking, and I think it’s actually enhanced the communication between Deans and Heads of Schools because they really then have to share responsibility for all the subsidies and instead of having everybody going around whispering ‘Oh well, that school’s been funded at our expense’, the Heads of School are now saying, ‘Well, you know, there’s a reason for that... it’s been a good process.”

The evolutionary rather than revolutionary nature of the Alpha process and model meant that the ‘rules of engagement’ were well understood, even if some of the details were ‘tweaked’ from year to year. This consistency in the model has been maintained despite considerable strategic change in the University, and it is commendable that the model has stayed reasonably consistent in this environment of change:

“University Alpha has been a new university with significant development and so we almost routinely consider issues of developmental funding as opposed to, if you like, steady state funding. And that’s very much part of our ethos but the model copes with all that.” (Deputy Vice-Chancellor, Academic)

The ability to make strategic allocations at the very beginning of the budget process is key to this. Before funding is put through any allocation model, there is human intervention to decide splits at the highest level. This provides for a strategic approach. One Dean noted the change in direction brought about by a new Vice-Chancellor emphasising research over the previous incumbent who had emphasised entrepreneurial activities. Allocations had changed to reflect these new priorities, but the process and model itself had been adapted rather than being completely redesigned.

Particular challenges for University Alpha include its distance education profile, and one interviewee spoke about how allocating funding in that environment is quite different to a university with predominantly on-campus students. The model needed to be designed to take into account costs associated with distance education such as educational design, printing and library services.

Alpha imposed a limit on the level of cross-subsidisation permitted by Deans between schools in their faculties. The Deputy Vice-Chancellor (Academic) noted the risks of large cross-subsidies: “If the IT operations offshore fell over, half the School of A would
be redundant”. While Deans had a great deal of discretion regarding the allocation of funds among schools in their faculties, they did need to work within a maximum of 25% cross-subsidy for any one school. Providing this discretion meant that different faculties emphasised different priorities, whether it was improving research performance or improving staff:student ratios.

Overall there was a high level of satisfaction with the model used at University Alpha, and no plans were expressed to make major changes to it. Instead, interviewees noted it was fit for their purposes, and that they would continue to ‘tweak’ and adapt the model and process, for example by continuing to increase the funding available for research performance in order to support the university’s strategic objectives. At the faculty level there were also no plans to change the process used, although the differences in the purposes of the models was noticeable – the first level model was about setting strategy and priorities, the second level model was about making the most of available funding.

6.2.2 University Beta

The University Beta model is particularly notable for attributing earnings and costs so clearly. The model and process began with all income attributed to the area that was deemed to have earned it. A series of central costs were then attributed to the income according to different cost drivers. For example, student-related costs were attributed by proportion of student load, staff-related costs by proportion of staff load, and revenue costs by proportion of revenue earned. It was through this process that the non-revenue generating divisions were supported. In turn, the budgets in the support divisions tended to be historically based.

During the interviews, a follow-up question was posed asking whether this transparent attribution of revenue earnings led to any change in how ownership of revenue was perceived. In the previous model when revenue was more difficult to track, there was less opportunity for individual faculties to know exactly how much they were contributing to the University, whereas under the new model, this was very clear. Did the Deans feel they were seeing ‘their’ money being redistributed through the process? It was conceded that the increased level of transparency could lead to a change in perception of ownership of funds, with the Vice-Chancellor and leadership group
needing to remain clear about their role in steering the organisation, and using budget allocations as a way of doing so.

University Beta’s faculties had a great deal of autonomy and, while the Deans were accountable for the results of their faculties, the university did not prescribe how the Deans should operate. The two Deans interviewed for this study demonstrated very different methods of operating – one centralised salaries at the faculty level and used the University’s calculations of school earnings to provide schools allocations for non-salary items, while another of the Deans provided one-line budgets to schools after removing a ‘slice’ off the top for faculty-level operations and strategic projects that schools agreed would be better as faculty-wide initiatives.

As the Vice-Chancellor explained:

“Now.. and once again this is where accountability comes in. Different faculties then redistribute on a different basis. Some have a much more centralised approach to running their faculties and we don’t mind that, say some faculties may have a central student administration whereas at others the schools within the faculty may administer the students and things like that. We’re not prescriptive in how each faculty operates. What we’re concerned about is that they do improve their research performance, they do improve their teaching and learning and their student satisfaction and so on but we’re not prescriptive on how they do it, as long as I’m satisfied that their approach to budget allocations meets the objectives of the faculties’ operational plans and strategic directions…”

There was a sense at the top of the organisation of providing both accountability for and control of costs to the Faculties through this new resource allocation model, although this was not necessarily a view shared by the Deans. In theory the system allowed Deans to control costs by adjusting the level of services and space used, although in practice it was not a ‘free market’ where services could be sourced from competing suppliers. To reduce student service contributions, for example, would require reducing the number of student enrolments, but reducing the number of student enrolments would reduce income. While the model was transparent it was not immediately apparent how it could be used to reduce costs, except by reducing the amount of space occupied.
This issue of the cost of space was a reason cited for a change in resource allocation model. Charging for a resource that had previously not been reflected in the budget allocations or expenditure certainly 'concentrated the mind' of the Deans with regards to space. But there was concern that reducing cost would be at the expense of undertaking the sort of activities the faculties should be doing. It was noted that research tended to be a cost burden to the faculty, with a less direct revenue flow than for student enrolments, and with longer lead times. And yet research often required dedicated space and larger areas of space. There was also some consternation that the requirement for space, particularly for research, in different disciplines did not directly correspond to that discipline or faculty’s ability to earn revenue and therefore pay for space occupied.

Incentives and rewards were also an issue in the University Beta resource allocation model. The model was based on the principle of returning revenue to where it was earned. This is in line with the resource attraction principles of establishing an entrepreneurial system. Problems arose, however, where costs were claimed from the earned revenue in a manner that while transparent in terms of amount and process, was not agreed to by all those affected. The effect of the model was therefore diluted.

As noted in Section 2.7, the way incentives are introduced into a system and the acceptance of that implementation are important considerations in establishing principal / agent relationships. It may be that University Beta’s newly introduced resource allocation system had seemed reasonable in theory, but that it had been ‘imposed’ from above, and that the process, data and elements were not yet accepted. It may be that the RAM needed time to be ‘bedded down’ and perhaps the undertaking of some information dissemination and consultation with those affected before faculties could fully engage with the incentives and rewards contained within it.

It is interesting to note that University Beta explicitly tightened the connection between level of Government funding for individual disciplines and the funding of its faculties. Indeed, this was stated as a reason for a change. Like most Australian universities, there was a fundamental assumption that the Government rates of funding, or at least the level of differentiation between the disciplines was correct. As noted in Section 2.4.2, in a previous policy era it was made clear universities were not required to make this link. It is also notable that the revised cluster funding levels introduced through the Nelson reforms directly correlate with the relative funding model levels of the 1980s, indicating that disciplines remain funded at equivalent levels despite any changes in
teaching practices, learning and teaching technology or even discipline content. It would be a courageous decision, however, to uncouple income and allocations. Recoupling of weightings to funding may reduce the incidence of implicit subsidies, but it also reinforced that Commonwealth funding levels between disciplines would be reflected in internal funding allocations.

6.2.3 University Gamma

University Gamma changed both its top level and second level allocation models more than once in the past five years, with key drivers being increased transparency and predictability.

At the top level, the RAM moved from a system of data inputs based on student numbers and subject weightings that was seen as opaque, through to a more certain model based on pre-determined sharing of income.

The original model mentioned in the case study was not well understood. It was based on data inputs and cost allocations that were unclear and open to debate. This lack of transparency was a major source of disquiet. With a new Vice-Chancellor came a new model, one based on transparency.

The income types were split into ‘growth’ and ‘non-growth’. In consequence the University was signalling strongly which sources of income it believed should be the focus of attention. Gamma identified that Government income for student places was not likely to grow, but was a reliable source of base income. Consequently, a larger proportion of this income was directed towards corporate and support costs, rather than core teaching and research. For the teaching and research areas, there were higher rewards in ‘growth’ income, where a much larger proportion was returned to the earning unit and a much lesser amount directed to corporate and support services.

The researcher was involved in a ‘costing’ exercise that determined what the percentage splits between central and return to earner should be in the three identified revenue categories when this model was being introduced. These splits were designed to ensure gradual rather than sudden change. A principle was agreed that the support and corporate areas of the University should not grow faster in budget share than the core business areas, and that by moving to agreed portions of types of
income, this would ensure that each side of the university grew in predictable proportions as the university grew. The next step was to decide the proportions or split of income. This researcher was involved in a costing exercise that determined the current spending of the different divisions, and worked from there to determine proportions that would result in similar allocations for the following financial year. For pragmatic reasons, the then current state was accepted as a reasonable starting point, and change would be from the current rather than from any ‘ideal’ base.

The second level model has also been through some changes. Prior to 2000, school allocations were determined at the top level with some input from the Deputy Vice-Chancellor. In 2000 a change was introduced so the DVC received a single line budget for allocation to schools as the DVC determined. As one Dean said:

“…the way we do it was a reaction against the obscurity of the way before and an attempt to make it more transparent and an attempt to get everybody within the Division on side and to make sure we all understood that we were all pulling the same cart, so to speak.”

In other words, if Division staff could not understand what was happening above them, they could at least have a process amongst themselves that they all did understand.

It is interesting that in the second-level process used for 2006 allocations, where Deans submitted budget requests based on what they felt was needed to run their faculties, the initial requests submitted totalled 8% more than the funding available. This demonstrated that the Deans were taking the process seriously, and were not making large ambit claims on the Divisional budget allocation. Perhaps this was a reflection of strong leadership (the Deans knew not to try to get away with extravagant claims), trust amongst the group (that all were working from the basis of wanting to find a good solution for all their faculties), and / or a clear set of ‘rules of engagement’. It meant that, while there was some negotiation and checking of consistency across figures submitted, the process was one that yielded a manageable starting point for those negotiations.

The Deans did note some weaknesses and strengths in the new approach, including that the outcomes depended on their negotiating skills and that they needed to be able to estimate their costs accurately. There was also the danger of decreasing the effectiveness of incentives. On the strength side, the new model did provide a realistic understanding of costs in faculties and provided a consistent approach and structure
for faculty budgets, leading to a simplified reporting and monitoring system in the Division. It also meant that faculty budgets were developed during the allocation process rather than as a separate administrative process.

One Dean noted the influence of the leadership:

“And the reason I think that that's worked well is because I have to say, this particular DVC has brought a sense of purpose and understanding and clarity that was not there before he got there frankly.”

Another Dean liked the strategic nature of the discussions:

“…it's a model that has aspects that I liked because at least it basically asked the question, ‘What do you need to deliver the objectives of the faculty?’ and historically models at Gamma and many places don't ask that question.”

The same Dean also noted that resource allocation models based on formulae (whether performance / incentive or actuals based) are designed for ideal institutions, and cannot take into account all the nuances that exist in universities. For example, the RFM made assumptions about costs of teaching science and engineering programs, and many universities carried these assumptions in their own models. Adjustment negotiations do allow some subtleties, but ultimately decisions have to be made on priorities, and on the levels of delivery (in research and teaching) the university is willing to accept and fund:

“…but it's interesting that in all models you find that there will always be some schools or faculties that can't exist on a budget generated by the models so there needs to be an adjustment line. And the interesting thing for me is that when you have adjustment lines that are consistent and the same every year it suggests that either there is a faculty not operating effectively or there is actually something wrong with the model, or both.”

Another issue with performance-based models noted by the same Dean was that different areas of the university are strong in some activities (for example research, or attracting international students) but weak in others. A university needs to decide whether it wants all its academic areas involved in all activities or whether it wants them to specialise, and then adjust any performance model so that a weak performance in a non-priority area does not adversely affect the budget allocation.

“The expectation from Government and the experience from overseas is that revenue has to find its way to those who earned it. I think at the same time
there will be from some other areas whose research is not so strong, an absolute determination that if they brought the teaching money in then they should get that money. So the Centre for A at Gamma brings in masses of research money. They should get it. The Faculty of X brings in masses of international student revenue. They should get it."

A danger noted by the Dean is that returning revenue to the area that earned it may lead to a change in culture from one that accepts cross-subsidies to a survive-on-your-earnings ‘silo’ culture that hinders the driving of strategy:

“But also of course, if all the money comes in and is then distributed according to who earns it, you lose the ability for the senior management of the institution to steer the organisation in particular directions.”

6.3 Cross-Case Discussion

6.3.1 Comparison of Models

The processes used in the three case-study universities varied in some basic respects. Some of these differences were as a result of organisation structure, but others reflected different ways of going about a common task.

In two universities, the first level of allocations was made from the Vice-Chancellor to the faculties, with the involvement of Deputy Vice-Chancellors representing groups of Deans (see Diagrams 5.1 and 5.2). Deans then ran their own allocation processes to provide budget allocations to schools. In the third case-study, the first allocation was made to a Division level Deputy Vice-Chancellor (see Diagram 5.4) who then ran a second allocation process to provide faculties with their budgets, but those faculties were the smallest budget unit (there were no schools within faculties). In all cases, therefore, the Vice-Chancellor was at least one allocation model removed from the ‘coal face’.
The potential exists for the Vice-Chancellor’s message about priorities, strategies and objectives to be lost between the first and second level of allocations, given that those delivering the teaching and research core business are subject to an intervening process. But without this hierarchy, the Vice-Chancellor would have a far more complex task in his/her own role while removing some of the authority from his/her senior staff.

All the top-level models contained some form of performance incentives and rewards, although it appeared these were relatively recently introduced elements to allocations. ‘The old days’ when allocations were made solely on actual student numbers have been replaced by systems that demonstrably value performance in research and teaching in addition to student numbers.

6.3.1.1 Entrepreneurship and Incentives

While performance incentives help to drive the academic agenda of the university, the aim of encouraging entrepreneurial behaviour and providing incentives for entrepreneurial activities is to contribute to the revenue base of the university. Revenue is the tool that underlies university activities and improvements. As non-profit organisations the aim is not to improve the bottom line for the sake of profit, but to improve the bottom line in order to provide, for example, increased academic staff numbers to reduce the student / staff ratio, and improved faculties and equipment to provide an environment conducive to learning and research. Massey (1996, p4-5) noted Bowen’s Law, that “universities will raise all the money they can and spend all the money they raise”.

Diagram 6.1: Budget Processes for Academic Areas

- Gamma
  - Chancellery
  - Divisions
  - Faculties

- Beta
  - Chancellery
  - Faculties
  - Schools

- Alpha
  - Chancellery
  - Faculties
  - Schools

○ = Budget Process
Being entrepreneurial means not only providing the environment within which entrepreneurial activities can thrive, but also providing incentives for success. The question posed for those designing resource allocation models is how to balance the incentives for those areas earning revenue with the 'socialist' nature of a university where cross-subsidies are part of the culture. It is a case of needing to feed the 'cash cows' enough to encourage their continued production, while not permitting a culture that claims every cent for the unit that earned it. There is also the issue of encouraging traditional 'receivers' of subsidies to consider whether they might indeed be more entrepreneurial.

In the example below, the Vice-Chancellor of University Gamma spoke of encouraging an engineering faculty to be more inventive about its revenue-raising capacity by thinking more seriously about its international prospects, as a similar faculty in a different university had done. He noted the importance of incentives that go to those incurring the costs of the entrepreneurial activity

“...it was really interesting when I first came here, I was told, well, engineering can't possibly do well out of a model like this and I'd just run an engineering faculty where people would have said, well it's all right for engineering, they just pour in international students. ... I think the incentive actually very significantly encourages people to be innovative and do those things.

Incentives to change behaviour might need to be more than can be provided through the resource allocation model, requiring negotiations for revenue to be 'outside' the allocation model. This is particularly useful where a unit has shown entrepreneurial spirit but does not have the reserves to get ideas off the ground. University Gamma provided an example of a 'start up deal' where a new activity was given dispensation from paying the normal rate of revenue into the centre for a couple of years, in order to give that unit both a chance to establish that particular activity on a sound financial footing, and to provide a revenue stream for other entrepreneurial activities to help the unit 'get ahead'.

“Well at the moment we have certain, our post-graduate students for instance - the money is out of the hopper....Which means we get 80% of the total rather than something like 55%.” (Dean, University Gamma)

Where these deals are done there needs to be transparency, they need to be well-documented and with a clear end-date, and they need to be available across the
university. They also need to be granted sparingly otherwise the proportion of revenue outside the model may distort the intentions of that model’s design.

One university senior executive spoke of transparency being a key to driving behaviour.

“So revenue visibility to everyone as far as I’m concerned. And that’s because they can see that as the top line and they can see how costs are deducted, hopefully they can say well what can I do about... what can I do about improving the financial position of my faculty. I can increase my revenue, I can reduce my consumption of central resources which means if I’m occupying five floors of a building and I really only need to occupy four then I can actually save costs. or… and the other thing I can do is improve my relative performance in terms of research and teaching and learning and then do better out of the strategic reallocation.” (Deputy Vice-Chancellor (Resources), University Beta)

6.3.1.2 Data

It is not surprising to find similar types of data being used in resource allocation models in each of the three case study universities. The Federal Government Department of Education, Science and Training (DEST) requires the collection and reporting of some standard data sets from all Australian public universities, and it is logical to make use of data already available. Data such as student load, progression and retention and staff load and function are provided to DEST for statistical purposes (and, increasingly, for performance funding purposes), and may as well also be used for internal funding and performance purposes.

Similarly, exercises such as the Course Experience Questionnaire and Graduate Destination Survey are common across all universities, and have been used by DEST for performance funding purposes through the Learning and Teaching Performance Fund. However, the case study universities preferred to use their own internal student satisfaction questionnaires rather than the data collected through the Graduate Careers Council of Australia process. This is understandable, because GCCA data is gathered from graduates, whereas learning and teaching feedback is sought by universities from current students. Data from individual subject evaluations can be aggregated and inform performance evaluations and target setting for academic units responsible for subject delivery.
The data put into models must be accepted by those affected by the model in order for allocations to be accepted. This means the collection methodology and accuracy of data need to be conducted at a level of practice that engenders faith in the data and the process. Some ability to verify data or cross-check may increase trust, given the comment of a Dean, University Beta:

“We find ourselves commonly challenging the information we get coming down the road, and right at the moment we are having some deep and meaningful discussions with central about trying to be certain that the numbers they have are the same ones that we have access to”.

The issue of trust is an integral part of transparency. Transparency in the operation of the model can be cancelled out by distrust in the data being used for the modelling. Transparency is discussed further in Section 6.4.2.2.

The timing of the availability of data also can affect models, and may end up with the tail wagging the dog. To give some chance for forward planning and certainty, it is preferable that allocations be given to managers at least a couple of months before the start of the financial year (although some institutions have moved or are moving towards three-year forecasts and rolling allocations). However, the availability of some data is independent of the financial timetable. For example, current year detailed and accurate enrolment data may not be ‘clean’ until the DEST reporting date in second semester. In consequence, universities either have a late-operating RAM, or work with data and forecasts that may have room for improvement.

University Gamma, for example, has a budget timetable that asks for forecasts for following year full-fee student enrolments before mid-year enrolments of the current year are finalised, which reduces accuracy, because fluctuations in demand revealed by mid-year enrolments are not included in preliminary budget modelling.

6.3.1.3 Allocating Costs

Deciding how, and whether, to attribute costs is an issue at different levels of resource allocation. For example, in the University Alpha model (Diagram 5.1), there is an initial decision made on how much will be allocated to support non-academic divisions before remaining revenue is then put through an allocation model for academic functions. In the Gamma model (Diagram 5.4), a cost-driver process is used to attribute support costs to Higher Education or TAFE revenue, but the divide between support and
academic allocations is determined by the percentage split of types of revenue. In the Beta model (Diagram 5.2), revenue is first allocated to the area that earned it before costs are applied according to particular drivers and income redistributed to support areas.

University Beta had an explicit costing model. Details are provided in Table 5.10 in Chapter 5 where it can be noted that there was an effort to link the type of cost driver with the type of support activity. For example, charges to faculties for university bank charges and revenue collection were based on gross revenue, while student support and marketing costs were collected by means of a student load calculation. University Beta explicitly collected charges based on space occupancy, calculated on square metres occupied by each faculty. The DVC (Resources) noted this charge was based on the cost of maintaining space (such as cleaning, electricity) and should not be interpreted as a rental, as it was not based on the type or quality of space occupied.

In the Gamma and Alpha models the funding allocated to support services was decided through a percentage method (in the former) and a human-decision process (in the case of the latter). Decisions on allocations among support services were then made, in both cases, taking into account historical allocations, future needs and strategic directions. A formula or resource allocation model was not used to decide, for example, the budgets for marketing, or human resources. Once allocations were made it was then the responsibility of the relevant managers to deliver the services expected within their allocated funding.

Does allocating costs explicitly help to drive behaviour? University Beta claimed that it did, with space their prime example. Since introducing a charge per square metre occupied, there had been some voluntary giving up of space by faculties. On the negative side, it was claimed that the charge was biased against faculties which conducted a great deal of research. In some cases they were hosting research centres which did not contribute to faculty income but for which the faculty paid for space occupied. There were also claims that it discriminated against research requiring laboratory and workshop space compared with, for example, research that could be conducted sitting at a regular computer. A third problem claimed for space-charging was that research intensive faculties found the cost of research space could not be paid from research grants, and was therefore taken from teaching allocations, which inevitably left less for the delivery of teaching programs.
The issue of charging for space highlights the difference between ‘what is good for the university’ and ‘what is good for the faculty’. At university level, a space charge makes excellent sense. It attributes costs to the areas incurring those costs, it brings to ‘front of mind’ the costs of occupancy and therefore helps to change attitudes and behaviour towards an expensive asset. But for faculty management, it is seen as a problem because it drives behavior (for example, reducing research space) that appears contrary to the mission of the organisation.

6.3.1.4 Centralisation and Decentralisation

All three case study models fit a centralised style of resource allocation model. In all cases, the decisions about the allocation of resources were driven by the senior executive of the university, with the faculties on the receiving end of those decisions. At the top level, in no university were the Deans included in the senior budget committee that made decisions based on allocation model figures.

In each case the senior executives were aware of the power of resource allocation to drive behaviour, and looked to build into their models factors such as performance incentives that would persuade faculties and other units to perform in certain ways. The most common of these was providing allocations for teaching and research linked to targets or performance.

It is interesting to note that the ostensibly least centralised of the three case-study models was the one used at the research-intensive, traditional-style university. University Beta explicitly attributed revenue to the unit that earned it, and then applied cost drivers to draw back revenue into the centre to pay for centrally provided services. But even in this model the locus of control was very clearly at the centre, with the senior executive driving the model. This was illustrated, for example, by the Dean expressing concern about his inability to verify data used in the model.

One theory is that seeing the revenue earned by a faculty or school, and then seeing the costs associated with the provision of services to the faculty or school may drive faculty and school managers to ensure those costs are kept to a minimum. In practice, however, the faculty does not have direct control over the level of costs incurred. The only way a faculty or school can guarantee reducing its costs is to reduce the unit numbers of the cost-driver (for example, staff or student load). This is clearly not the result intended by the designer of the models, because these solutions would have a
negative impact on the performance of the faculty, and therefore of the university as a whole. In practical terms, a faculty or school would need to persuade the university community, perhaps with the support of other faculties, to reduce the level of support provided (for example, reducing the number of staff in the service departments).

It would be difficult to argue that any Australian university, in the current context of falling government funding and increased reliance on self-generated revenue, should move to a decentralised resource allocation model. Jarzabkowski's (2002) analysis suggests that a centralised resource allocation model is more in keeping with one of the key components of an entrepreneurial university, the ‘strengthened steering core’ (Clark 1998). Given the need for entrepreneurship by Australian universities to raise non-government revenue, it seems reasonable to expect them to employ resource allocation models that help them become more entrepreneurial.

There is not an automatic flow-through, however, from having a centralised model to having one that encourages entrepreneurial activities in the organisation. A second step that provides incentives is needed.

The case study universities do seem to have recognised some common problems with centralised systems (Jarzabkowski 2002, Geiger 2003) - the lack of connection between revenue, budget allocation and expenditure in departments and faculties, and the resulting lack of incentive to earn increased revenue or reduce expenditure. University Gamma, for example, tried to overcome this by showing to its internal stakeholders how different revenues were treated, and providing a greater return on those revenues it believed it could grow. Demonstrating that connection between revenue and allocation should provide incentives to grow revenue where incentives are clearly documented.

6.3.1.5 Performance Funding and Models

Incentives in the case study universities were identified in three key areas:

- Research performance
- Teaching performance
- Revenue generation.

Incentives were identified in the following forms:
• Guaranteed returns on particular revenue sources
• Funds allocated on the basis of comparative performance against internal university competitors
• Funds allocated on the basis of comparative performance against external university competitors
• Funds at risk if pre-set targets were not achieved.

It is not surprising that research performance is included in allocation models, given that performance is a key determinant of allocations from the Commonwealth to universities for non-specific research income. There are a number of peer-reviewed competitive research grant programs (operated by bodies such as the ARC and NH&MRC) where grants are provided for specific projects. Success in national competitive grants schemes, the number of research outputs such as journal publications, and the number of students graduated from research higher degrees are used, or have been used, in calculations for the allocation of funding through programs such as the Research Training Scheme, the Research Infrastructure Block Grant and the Institutional Grants Scheme. For example, RIBG is determined on each university’s share of the Category 1 Australian Competitive Grants Income over the most recent two years for which data is available, while IGS funding has been calculated using research income (60%), student load (30%) and research publications (10%).

The Research Quality Framework, due to be introduced in 2008, will distribute research funding according to a set of competitive performance measures comparing university outcomes against others in the UNS; this is likely to have a substantial impact on universities. It is expected, therefore, that universities will implement performance funding of their own to encourage behaviour that aims to place the university in the best possible position in a competitive environment.

Performance rewards for teaching and learning are a recent feature of the Federal Government’s funding to universities. In 2006 $54 million was distributed across fourteen universities as a reward for teaching performance through the Learning and Teaching Performance Fund. Prior to this, all teaching funds were allocated to universities on inputs (for example student load and discipline profile) not on ‘outputs’.

While the amount being distributed was relatively small across the sector, and the methodology employed and reliability of the outcomes have been questioned, the distribution of funds through this mechanism nevertheless broadcasts a clear message that the Government is interested in outcomes as well as inputs.

Indicators used for allocations from the Learning and Teaching Performance Fund included graduate destination data (employment or further study), graduate satisfaction data (overall satisfaction as well as satisfaction with teaching and generic skills acquired), and student progression and attrition rates. Within the case study universities, the CEQ and GDS data was not used for resource allocation, but internal student satisfaction was used, for example at University Gamma. It seems likely that as the funding available through the Learning and Teaching Performance Fund grows, universities will refine their internal models to encourage success in the external funding program.

Generating revenue is a necessary role for universities. In 1981 the Unified National System of universities received 89% of funding from government sources, by 2000 this had reduced to 45%. Revenue is raised from sources such as student fees through local and international fee paying programs, cooperative ventures on- and offshore and other entrepreneurial activities. Resource allocation models contained explicit and implicit incentives for schools and faculties to raise revenue, although the flow-through of funds was a point of contention.

One Dean noted the shift towards looking to the future when deciding allocations rather than basing them on the past. This included a change from formula-driven to performance-based funding, and from using actual student load achieved in previous years to target student load. Even within performance funding there are options to provide competition between units, or against past or expected performance figures within the same unit. Both these systems were found in the case-study universities. For example, one university calculated individual performance targets in research for individual schools, while another used a comparison between schools of past performance to calculate performance allocations.

The problem with the latter system is that where a university has strong performances from one or two schools or faculties, and relatively weaker performances from others, there may in fact be a disincentive for the weaker areas. If the strong performers always dominate funding, then why bother trying? It may be more of an incentive to
link funding to improvements within an area rather than relative to other areas. Although this in practice would require negotiation of targets, it may be a more effective driver of desired behaviour.

### 6.3.2 Strengths and Weaknesses of Models

In each of the case studies the resource allocation model was used to inform allocations, but the final decision was a human one. This is an important element in the process, because it illustrates the need for room in the process for strategic decisions. In an unchanging environment it might be possible to use an automated allocation process, but in a dynamic context where resources are limited, formulae cannot always be applied. Resource allocation becomes an art as well as a science. As one interviewee noted:

“And the area where I think there’s a lot of human tweaking needed is picking up the different sort of developmental stages of things.” (Deputy Vice-Chancellor (Academic), University Alpha)

A weakness apparent in all the case studies was the lack of connection between the first and second level allocations. At the top level, strategy and intent were clear. But at the next level, in some cases there was uncertainty about how allocations had been reached, and the messages inherent in the top-level allocation systems could be lost in the second level system.

In the Gamma case study, there was little connection between the first and second level processes. The one-line budget provided to the Deputy Vice-Chancellor was allocated to faculties in a process that was not well connected with the first-level allocations. In the model used prior to 2004, there was no connection at all between the processes, with the second-level model introducing load targets, weightings, and performance rewards in research, teaching and revenue generation that simply did not exist in the first-level model. The 2005 process did make some reference to first-level processes, in that calculations were provided to indicate how much revenue each faculty brought into the University, and how percentage splits might be applied at the top level, but the final decision was reached through discussion rather than application of first-level principles.
The Alpha process did allow some continuity between first and second levels. In this process, allocations and targets for schools were produced, but Deans received a single line budget that was a sum of the allocations calculated for the schools within their faculty. This meant that they had the information required to continue the pattern of allocation if they wished. But as one Dean noted, in practice this did not occur. Instead, he asked each Head of School to produce a budget request, and then discussed these individually. They had done an exercise in cost-based budgeting to determine the baseline budget of operating a school, and were able to use this as a credibility test for budget requests. The Dean noted that different schools contributed differently to the overall performance of the faculty, and therefore it seemed to him fair to deal individually with each one. Some schools contributed through revenue generation, others through research performance, and some cross-subsidies were justified. The Dean noted that, while on the face of it revenue generation was of the most value to the faculty, it was in his opinion the research work also constituted a long-term strength of the faculty, and in consequence he was justified in cross-subsidising the latter with the former.

While the Beta model is transparent at the first level, at the second level this transparency was not as apparent. One Dean felt that the data were difficult to verify. However, he did use the first-level allocations as a method for school allocations, retaining a percentage for faculty level activities and passing the rest to schools. Another Dean in the same university had centralised salaries within the faculty, so salaries were removed from each school’s nominal allocation by the faculty, and only the remaining non-salary budget was provided to the Head of School. This provided a strong central control on staffing levels.

While competitive performance funding within a university was used in all the case studies, some systems are more effective than others. Where performance was based on relative strengths across faculties, a single strong faculty was found to dominate, leaving others discouraged from competing. In the 2004 second-level Gamma example, the School of X was discouraged from competing for research performance dollars because, despite strong growth in its research performance, it was unable to match the relatively better improvements of more research-established disciplines. Despite being strong earners of revenue, it lost this potential income because other schools were stronger in research, and the model favoured research performance over revenue performance. University Alpha overcame this problem by setting school-specific targets. Tailored targets require more work because they need to be pitched
carefully and fairly (too low and a school and faculty may be rewarded without having put in effort, too high and they may be discouraged from trying), but if done well can create a level playing field.

Balancing the demands between ‘core’ academic funding and support allocations is a constant theme in resource allocation. Gamma addressed this by having defined percentages that kept the ratio of allocations consistent as revenue grew, while the Beta model used cost-drivers to allocate funding for support services such as facilities and human resources.

The major problem for universities was summed up by a Dean:

“I think we’re at a point now where the University is dispersing its income reasonably and to the best of its ability. The University simply doesn’t have enough income.” (Dean, University Gamma)

### 6.3.2.1 Committee Structures

All three case study universities had a top level budget committee that mirrored their senior executive team, chaired by the Vice-Chancellor.

In University Alpha the Budget Review Committee comprised the six-member Senior Executive Group chaired by the Vice-Chancellor – two Deputy Vice-Chancellors, the PVC Research and the Directors of Finance and Human Resources. Deans were represented by the DVC (Academic). The group met several times between about August and November after the Vice-Chancellor had seen a first cut budget. The Committee’s second role, once budgets had been allocated, was to monitor spending against budget during the year, and reallocate for contingencies or divergences from the initial allocation where necessary. This Senior Executive Group kept a tight control on the university’s salaries bill by requiring permission to be sought to create new positions.

There was also a Budget Review Committee which comprised four senior people in the Finance Department who met monthly to review actual performance against budget and examine any request for supplementation. It was this group which had the responsibility for keeping the finances on track once budgets had been allocated, and which did the preparation for the full budget committee.
Gamma also used its Senior Management Group as its most senior budget committee, going through items to determine which would or would not be supported within relevant funds. Deans were represented by the Deputy Vice-Chancellor.

There was a similar situation at Beta, with the Senior Management Group, chaired by the Vice-Chancellor, taking principal responsibility for the development of the budget, supported by a budget group which brought together the data, spreadsheets and modelling.

Other committees in universities also had a role to play in the budget process. At University Alpha the Academic Senate, the most senior academic committee in the organisation, played a role in setting minimum standards against which performance targets could be formulated, for example setting the definition for ‘research productive’, teaching criteria and professional activity criteria. The research criteria set the minimum standard for what a staff member needed to achieve to be counted as research active. The Vice-Chancellor consulted with Academic Senate, for example, regarding the component of the budget that was performance based, but regarded the final decision as vested in the Vice-Chancellor.

The Deans did not have direct input into first level allocation processes at any of the case study universities. However, one Director Finance believed the Deans had ownership of the model. He stated that, while the Deans regularly asked for reviews, which had occurred only once or twice in ten years, they accepted the relativities of the final allocations, if not the actual amounts. Further research would need to be conducted to investigate the extent to which Deans in other universities do, or do not have, direct input into first-level allocations.

At University Alpha the Vice-Chancellor reported that once a year senior Finance staff attended a Deans Meeting to talk about budget and finance, where a picture of the financial health of the university was presented. In addition the Deans received an analysis of their own faculty’s spending, but it was left to them to decide whether to share that information among themselves.

At University Beta the Vice-Chancellor’s Advisory Committee did give Deans some input into budget allocations. It comprised the four Deputy Vice-Chancellors, a Pro Vice-Chancellor, the President of Academic Board and the nine Deans. The PVC
(Resources) talked about the interaction between this group and the Senior Management Team (which excluded the Deans).

“In reality a lot of the discussion and debate occurs in the first instance in the Senior Management Group, then the drafts of the budget are all taken to the Vice-Chancellor’s Advisory Committee and discussed and debated there, so they do play an important role in terms of providing feedback to the Vice-Chancellor about the budget that’s proposed but the development and proposals really come from the Senior Management Group.”

The Deans in the other two case study universities did not have the opportunity to sit down with the Vice-Chancellor to debate the top-level budget.

6.3.2.2 Transparency and Collegiality

Transparency was the most common concept mentioned through the interviews. All the university staff interviewed with the exception of one Dean talked about the element of transparency. It was striking how senior university staff felt their allocation systems should be clear for all to understand (although whether in fact they are understood is a different matter and will be touched on later).

There are a number of elements within the concept of transparency. There is the physical documenting and publication of material about the model, the budget allocation process and the results of the process. Does the university produce information about how decisions are reached and what those decisions are? And who can access this information – senior staff only, all university staff or is it publicly available? Then there is the aspect of clarity and understanding of the model and its outcomes. Is the model understood in its design and intentions? Do participants all understand the ‘rules of the game’ and what they might need to do to improve their position? Are the data used for modelling accurate and available for checking? How far does that transparency run through the organisation – do all those affected understand how and why decisions are made? There are also issues of transparency during the decision making process – do all Heads of School in the faculty, for example, see what each other receives from their Dean? Is it a ‘round table’ process or does the Dean hold discussions with individual Heads?

Two of the case-study universities had Vice-Chancellors who had taken up their roles within the past couple of years, and who had introduced deliberate major changes to
the resource allocation model at the university level with the stated intention of increasing transparency. The third Vice-Chancellor was longer serving but had been instrumental in introducing a greatly changed resource allocation model for 2005 allocations.

From this it is clear that lack of transparency in university-level allocations was no longer acceptable to Vice-Chancellors. Whether the ‘new breed’ or longer established, they recognised that changes were required. University leaders recognised that their staff wanted to understand allocations, to see the rationale behind them and to see the ‘rules of the game’. By making resource allocation transparent, Vice-Chancellors have a tool that can be applied across either the whole organisation or major sections (such as faculties) to drive behaviour. Resource allocation models are tools for illustrating clearly what strategies and objectives are important to the university as an organisation.

Transparency was spoken about by Vice-Chancellors in various ways. One Vice-Chancellor used transparency to bring his senior academic team together to support his strategy and have his Deans understand why certain decisions were being made:

“Now if we have to subsidise a faculty I now make that transparent, so what I do is say... we’re putting (new program) in so we’ve put in a bulk... a big heap of money into Faculty Z above what their taught load needs. But we’re saying, here’s your subsidy, or here’s your developmental cost. And the other Deans look at it now. If Faculty Z misses its target, in IT students or something, they owe it back to the university but we get a payback and the other Deans around the table can see why and if they miss their target, we’re all going to suffer, what’s the payback? You’ve got to... try to get them to work together as a group.” (Vice-Chancellor, University Alpha)

That this was an improvement on a previous regime was supported by a Deputy Vice-Chancellor in the organisation noting:

“I suppose we’ve been operating in as I said a fairly broadly stable architecture which people understand because there aren’t many opportunities to do odd deals. And certainly the current Vice-Chancellor is strongly into transparency. That has not necessarily always been the case but it is now.”
Another Vice-Chancellor talked about transparency in terms of breaking down internal barriers and increasing trust:

“The other thing that I think is important is actually transparency in the process as well because if the process isn't transparent, you can be absolutely certain that everyone else has got more money than you, and that creates... within the organisation it creates internal barriers as well... I mean in any transparent model you can argue about the parameters of the model but at least you know what you're arguing about, rather than the intangibles...” (Vice-Chancellor, University Gamma)

A third Vice-Chancellor talked specifically about encouraging transparency at different levels of the organisation, not just in the first level allocations process. In this case study university, a budget document explaining top-level allocations and process was produced and available freely on the internet. However this level of transparency did not necessarily cascade down through the organisation:

“I'm on a mission at the moment where we get other faculties to have documents that are just as clear to go down, so that everyone in the organisation knows you know, where the budget... how the budget is derived and allocated and at a school level you know, we've got sixty-seven schools... and within the ten faculties - so that you know, the people do need to know, and they have every right to know how the money is being allocated.” (Vice-Chancellor, University Beta)

Chief Financial Officers and those charged with advising on the development of a resource allocation model and ‘cranking the handle’ had a different take on transparency, concentrating on process. One pointed out that managers were able to call up figures from a central finance system to check actual expenditure against budgets, and that progress reports were provided from a committee charged with monitoring the financial health of the university to Council. Another noted that a model with set percentages for allocation of types of income helped transparency because different areas knew what to expect.

Deans spoke about transparency in terms of process, for example noting that all their Heads of School were aware of the faculty’s budget situation for the coming year and what priorities could, or could not, be funded. One noted that he and his Heads, as a group, tried to relate their faculty’s allocation to the relative funding model to “see how it measures up”.
A Dean at University Alpha thought that the process to provide his allocations had improved thanks to increased transparency:

“...and whereas in the previous regime nobody knew how anything worked and you sort of took what you could get, what you were given, whereas here at least if we were not given what we'd like to have at least we know where it's going and you know the processes... Yeah, and it gives you an opportunity then to argue the change”.

A Dean from University Gamma expressed a similar sentiment:

“... a one line budget and you had no idea where it came from or how it was constituted, go away and make do with it. The DVC certainly instituted a process where although none of us were happy with what they got, everybody was clear as to why that decision was arrived at...”

The same Dean noted that a change in leadership at the top of the organisation, and perhaps a change in the environment had contributed to an increase in transparency:

“Particularly the new Vice-Chancellor has also introduced more transparency and more clarity and has I think also personally less inclination to want to siphon off as big a strategic initiative fund as the previous VC. Times are different too. I don't want to make a value judgment on that per se, because a lot of those decisions are beyond me. I don't know why they were made and so I can't say they were bad decisions. Context of the times, exactly. So the way we do it was a reaction against the obscurity of the way before...”

Deans provided opinions both on the allocation processes used to fund their faculties, and then on how they made allocations within their faculties. In running his own budget process within his faculty, a Dean from University Beta was clear about the need for transparency:

“You really lay a trap for yourself if you don’t. We really do feel that we want ownership of the budget strategies that the faculty follows by the Heads of School. Sometimes they don’t like what’s being proposed but if they grudgingly acquiesce around the table at least nothing’s a surprise to them and we do discuss these things with them and we listen to any cogent counter arguments and we do modify our plans accordingly.”
He was less complimentary on the topic of transparency at the top level, expressing frustration at attempts to validate data on which allocations were based.

But knowing how the system works also leads to the temptation of ‘playing the game’: “…the danger of a transparent budget, is that faculties are invited to think about how do they operate that will maximise benefits to them.” (Dean, University Beta)

This raises the issue of trust as an integral part of transparency. Transparency in the operation of the model can be cancelled out by distrust in the data being used for the modelling.

The proposition was put to interviewees whether, with the change in Government funding transparency levels as a result of the Higher Education Support Act (2003), this would also change the level of expectation of transparency within universities.

The Federal Government now publishes cluster funding information. All university places are allocated to one funding cluster. A university is funded for each EFTSL according to its cluster, and also receives a published student contribution for that place (HECS contributions are also determined by discipline). It is possible, therefore, with access to some basic enrolment data, to estimate a university’s income from government-supported student enrolments. Armed with this knowledge it is also possible to extrapolate to faculty level and determine the ‘value’ of a student enrolment at university and faculty level, and see how much is flowing through the system. Now that there is a direct link between student places and level of funding for each individual place, does this increase the pressure for transparency on allocations? Does it also change an expectation as to ‘whose money is it anyway’?

One senior executive felt that with the change in Government funding transparency, increased transparency at institutional level would follow “… and hence even if we didn’t want transparency, my view was the funding that was coming to the University was much more transparent in terms of what was explicitly being funded”. (Deputy Vice-Chancellor (Resources), University Beta)
6.3.2.3 Driving Behaviour

One of the major reasons for a well thought out resource allocation model is to drive behaviour across the organisation that will strengthen the university and its future. This means linking funding to strategies in such a way as to encourage the implementation of those strategies.

One Dean noted that performance-based funding has good and bad points; it rewards those areas which are doing well but does not necessarily encourage engagement by those who are not doing well. For this reason a model should combine performance allocations with incentives, both to raise the level of performance in non-performing areas and for strategic purposes. A model needs to work for a whole organisation and not result in a number of ‘silos’ all competing against each other but without collegiality and common purposes. As the Dean noted, in organisations where funds are limited, the only way of providing development funds to one area is by removing funds from another area that actually did the earning. He noted:

“Now that’s always difficult and so it’s why I believe that there needs to be some measure of collegiality in deciding how cross-subsidies work. And in most universities you don’t have that collegiality, you have the managerial decision making that results in the areas that earn money and lose it feeling very aggrieved.” (Dean, University Gamma)

Linking budgets with planning was touched upon during the interviews. The University Gamma Vice-Chancellor noted the budget preparation is now done at the same time as the planning process “so we can actually see what the plans are and that there’s hopefully some linkage between budget and plans, that there’s some funding for things that we said that we were going to do”.

6.3.3 Evolution of Models

It is interesting to note that two of the three case-study universities had made major changes to their first-level allocation models for 2005, although the third had had a consistent model for about a decade. University Beta made a major change in moving to a model that sees all revenue credited to the earning unit before costs are then calculated and returned to the centre. University Gamma moved to a predictable percentage return for earning units.
The Alpha model, based on the relative funding model of the 1980s, has nevertheless been updated and ‘tweaked’. Major changes introduced in the last couple of years include performance funding elements and a change in culture so that ‘special deals’ outside the model are now discouraged, with a consequent increase in transparency.

There was agreement that stability provides predictability and the chance for longer-range strategies to be implemented. As one Vice-Chancellor noted:

“So one of the things is that I actually do think you do need a level of stability and consistency … when I was a Dean I always desperately wanted to know not only what my budget was going to be next year but a good estimate of what it was going to be the year after, possibly the year after that as well.” (Vice-Chancellor, University Gamma)

But stability is a two-edged sword, as members of the university become familiar with a model they may be able to use it to their advantage and ‘play the system’. One senior executive noted that while consistency is needed, models should be reviewed and adapted in order to take account of the changing context in which they operate:

“I think you can’t change your model every two or three years because it takes a while to adapt and move to a new model. When I say… have they only got a life of five years, no, but I think you should be reviewing it hard after five years just to test whether it’s achieving what you want and it will be well bedded in and established. And look if it’s working well it might survive ten years but it needs to recognise that the environment’s changing. And if the Federal Government changes the way it funds higher education then my view is our resource allocation model will change to reflect that.” (Deputy Vice-Chancellor (Resources) University Beta)

As noted, second level allocation models were operated by Deans or equivalent to make allocations to faculties and schools.

One Dean noted that the second-level model in his university was so transparent because in previous years the model above them had been so dense that no-one could understand it. A transparent model at the second level meant that “at least we were not fighting amongst ourselves…so the way we do it was a reaction against the obscurity of the way before…” In this university a major change had occurred at the first level of allocations, which increased transparency and trust.
Personal experience of different models led one Vice-Chancellor to change the first-level allocation system at his university. In another university, a senior executive noted change was brought about by a level of build-up in frustration with the existing model “where it had reached its use-by date”.

6.3.4 Contexts

Different universities in the UNS work within different contexts. Some are at the ‘top of the tree’ in terms of prestige, income and demand for their programs. Some serve a particular geographic location. Some have considerable assets in terms of property and investments, others have few. These different contexts influence their revenue streams and consequently the budget allocations available. Their missions vary, too, whether they are traditionally research active or came from the College of Advanced Education system and therefore have a teaching background.

University Beta is a traditional, comprehensive, city-based, research-intensive university. Alpha, by contrast, is rural-based with a teaching background and a strong reputation in distance education. It serves a very different constituency, with many first-generation university students. Gamma sits in another context, with its city-setting and technical background, but with a large technical and further education component and reputation for accessible pathways between sectors.

It is perhaps more remarkable that, despite these contextual differences, all three case study universities have resource allocation processes with similar characteristics. Moodie and O’Connor (The Australian, 21 June 2006) argue that because universities are publicly acknowledged and ranked on a limited set of criteria (particularly research standing), they are discouraged from promoting the diversity that actually exists in the UNS. It could also be argued that, because funding and student enrolments are linked with prestige and ranking, universities have developed resource allocation models that drive the behaviour that will see their rankings improve.
6.5 Conclusion to Chapter Six

Devising a budget model requires compromising – on the extent of return to earning unit, on the extent of cross-subsidies, on what will be specifically targeted in the model and what will be assumed, between devising a workable model and the complexity that would lead to a fairer result. There are some issues that should not be compromised, however, and that includes transparency and the consultative process that surrounds the model. It is these elements that are the key factors in having a model accepted, not the design of the model itself.

Time and time again in the interviews conducted for this research, university staff were less concerned with the outcome of the models used in their universities than they were with being involved and understanding the process. While having a reasonable budget allocation was important, of greater import was understanding how and why the allocation had been reached and being actively involved in that decision. People were willing to accept allocations that were less than ideal if they felt they were part of the process rather than the object of the process.

All the case study universities indicated that they had modified or completely changed their resource allocation models and processes in recent times. Universities have been adapting quickly over the past twenty years since the Dawkins reforms, and the future appears to be one of continuing rapid change. In consequence no university can become too wedded to its system, because the need to adapt allocation models will also continue apace.

University Beta has achieved a major shift in its allocation system, one that has produced some explicit behaviour-drivers (such as highlighting the cost of servicing space occupied). It is interesting to ponder whether Beta, having seemingly invested so much into its new model, will be able to adapt quickly. While justifiably proud of its current model, that pride cannot stand in the way of review and change.

Gamma’s procedures have improved transparency at the first level, but the two levels of allocation in use do not provide a continuity of system or strategy, although both processes are understood, transparent and respected.
Alpha has made a clear stand to be a research university by setting aside considerable funding for research purposes, not only from research sources but also from operating revenue. This funding is distributed by the PVC (Research). This sends a clear message internally that Alpha does not wish to be viewed as a teaching-only institution and that it will invest heavily in research in the short term.
Chapter Seven: Conclusion

7.1 Overview

Chapter Seven examines the thread of the thesis through from conception to conclusion. It traces from the original research problem, through the theory in the literature review, to the material gathered during the case studies and the analysis and conclusions drawn from that material.

Australian universities are faced with making choices about how best to distribute available funding through their organisations. There are insufficient resources to provide all areas with what they might demand, and therefore there is a need for processes for decision-making about resource allocations. Various elements that could be taken into account when designing resource allocation models have been examined, including balancing rewards and incentives, the possibility of performance measures, the extent of cross-subsidies and the attribution of revenue raised. This thesis asked the questions: what choices do university managers have in designing a resource allocation model; what factors should be taken into account; and what are the important or influential elements required to reach an optimal design?

The research context includes the reduction in government funding as a proportion of university income and the rate of change that universities have faced. The thesis provides some illustrations of options that universities face. It looks at sources of revenue available to universities, and the rate of movement from reliance on government funding to increased earnings from non-government revenue such as fees from students. Concurrently with this change in funding source came a move from an ‘elite’ student body to mass higher education, with a large increase in the number of university students.

A key to the thesis is that universities do not have a single allocation process, but may have more than one. The first level allocation may be made by the most senior of the managers in the university, the Vice-Chancellor and his/her advisory group, with line budgets provided to divisions, faculties or schools. Decisions are then made by managers farther into the organisation that can continue or dilute the messages sent through the budget decisions made at the highest level. This thesis, therefore, set out
to examine two levels of allocation and assess the level of consistency between the allocations made in the same organisation.

Literature pertaining to the study was reviewed in Chapter Two. It examined the changing policy landscape for Australian universities, noting key dates and reports that shaped policy, so setting the context for a more strategic resource allocation methodology. Sources of revenue and the changing reliance from private funding to government funding and back to private sources was discussed along with the growth of higher education as an industry, illustrated by the revision of international student policy from ‘aid’ to ‘trade’. The growth of local fee paying students was also highlighted.

The literature review then moved into examining budgeting and understanding some basic underpinnings and choices as well as the link between budgets and strategy in an organisation. The link between the flow of funds and behaviour, together with agency theory was briefly reviewed.

There is a continuum of models from centralised to decentralised, coming from an approach that asks ‘whose money is it anyway?’ and therefore who has the power, the ability to control strategy and make decisions about allocations. The implications from strategy are particularly important in an environment of change, as noted in a brief review of strategic planning literature, particularly the debate between Porter and Ansoff. Power, strategy and agency theory were reviewed to establish some understanding of how these interweave with the practical consideration of budget allocations, and therefore how important the decisions were that were being made during the allocation process. Performance funding was also introduced, along with some background on entrepreneurship, given that in the current environment, Australian universities are expected to be more entrepreneurial in attracting increasing proportions of non-government income.

Jarzabkowski’s (2002) study of resource allocation methods through case studies of three universities in the United Kingdom is reviewed. This study was the model for the methodology used in the thesis.

Before moving into the discussion of methodology, the thesis has a brief chapter examining some theoretical frameworks through which the data collection would occur. This section aimed to conceptualise the frame of reference of the researcher, looking
at a range of practical questions about what activities a university undertakes and where they might fit into the allocation framework: is the activity raising a surplus or does it receive a subsidy, what activities are ‘core business’ and what are outside this core? Is the allocation process performance driven? How much are allocations influenced by past performance or future targets? How much influence does the resource allocation model have, is it the starting point for ‘human’ negotiation or does it provide the final allocations?

These were the questions that helped to formulate the research protocol outlined in the fourth chapter, which discussed the methodology used in the research.

Case study methodology was chosen as a suitable method of enquiry for a number of reasons. It followed the example used by Jarzabkowski (2002), Clark (1998) and others in the study of higher education organisations, and is useful for an in-depth investigation and close enquiry into a particular aspect of an organisation’s operations. Interviews were conducted at several levels in each of three case-study organisations, providing information and analysis within an organisation as well as across participants at similar levels in different organisations.

Yin (2003, p9) notes that case studies have distinct advantages when “a ‘how’ or ‘why’ question is being asked about a contemporary set of events, over which the researcher has little or no control.” In this research, the questions were related to how available funds are distributed and why they are distributed in that way, with the researcher having no control over any of the events in the study.

The data collection consisted of interviews and document examination. The interviews were held principally in person, although one was conducted as a telephone interview due to scheduling and travel issues. The case studies were chosen for two key reasons. The first was that they provided a spread of university types across regional, metropolitan, traditionally research, traditionally teaching, large and small. The second reason was pragmatic, these were the universities within the groupings identified by the researcher that agreed to participate.

The interview protocol was designed in two parts: factual and opinion. The factual questions about sources of revenue, processes for allocation and the key people involved were asked first. This both established a factual base for the opinion questions and also allowed both the researcher and participant to relax into the
interview. It also allowed the interviewer to establish a rapport that would perhaps allow the participant to be more forthcoming when asked for personal opinions and views. In the event, the participants were, on the whole, frank and open with their responses. Interviews were transcribed and documents examined to provide the basis of the case study reports.

Before providing the case study report, the profiles of the case study universities were compared and contrasted to set the context and provide a picture of the characteristics of each of the institutions. This illustrated the differences in history, size and wealth of the universities, as well as their spread across disciplines and geographically across campuses.

The case study reports illustrate three variations on a centralised resource allocation model. In all cases revenue is considered as belonging to the ‘university’ rather than to the component part of the organisation that specifically earned the revenue, although in the case of the University Beta, there is transparent attribution of revenue to the area that earned it. A number of common features were used in the allocation processes, including student numbers and research and teaching performance measures. Within these broad areas, however, major differences were identified, such as whether forecast (following year) or actual (previous year) figures were used, and whether performance was measured relatively within the university (creating internal competition) or against individualised targets.

In all cases the universities reported that the resource allocation model was an aid to decision making, with the Vice-Chancellor retaining the right to make final decisions. This illustrates firm central control, and in each case the ability to drive the strategic agenda of the university was cited as the reason. Vice-Chancellors expressed their responsibility and authority to make these final decisions.

Second level allocation methods were also examined in each of the case study universities. These exhibited a variety of forms, from a direct flow-through of the figures provided by the first-level allocations, with some funds reserved or held back for faculty-based activities and strategies, to a completely new model and process disengaged from the first level. One Dean chose to centralise faculty salaries and allocate only non-salary budgets to schools, while others provided one-line budgets to Heads of School.
This chapter contains conclusions about the research issue, highlights the findings from the research, outlines implications for policy and practice, and provides questions for further research.

7.2 Conclusions on Research Issues

The research question posed in Chapter One was “How can a university enhance its performance through effective resource allocation?” As a piece of practical work, the DBA was designed to answer the practical question “What are the important elements in a resource allocation model?” As a practitioner in a university, the researcher felt it was important to understand the options available with regard to resource allocation models and the processes surrounding models to assist other practitioners to make informed decisions regarding resource allocation in their own organisations.

The literature review revealed a number of issues to reflect upon in light of the case studies and the practical question, and these are discussed in this section.

7.2.1 Centralised vs Decentralised Strategy and Power

Jarzabkowski (2002, p7) defines a centralised resource allocation model as “one in which resources are allocated by the senior management team from a central pool on a zero basis” and decentralised as “departmental control over budgets, with responsibility for their own strategic direction, income-generation and financial viability”.

All three case studies had senior management teams allocating operating resources from a central pool, confirming that they are centralised systems. However, there were some variations on the system, and not all the case studies held to the second part of the description as being allocated “on a zero basis”. For example, the support (non-academic) areas at University Alpha received their allocations through a process of negotiation based on previous annual allocations and specific bids. While the method of allocation at University Beta at first glance appeared to be based on a decentralised model (with allocations apparently based on income minus contribution to the Centre) in fact it was a tightly controlled central process with the Vice-Chancellor maintaining
the right to make the final decisions on allocations. It is difficult to reconcile this ‘strengthened steering core’ (Clark 1998) with a decentralised system.

Geiger (2003) and Jarzabkowski (2002) identified the following as common problems with centralised systems:

1. the lack of connection between revenue, budget allocation and expenditure in departments and faculties
2. the resulting lack of incentive to earn increased revenue or reduce expenditure.

The Gamma University first-level process addressed the first of these concerns by providing a predictable return on the dollars earned by revenue-generating activity to the area responsible for the earning. While the effect was diluted by the second-level allocation system, there was nonetheless a recognised rate of return. The lack of connection was more pronounced at University Beta despite its process being based on revenue generation. The lack of trust and transparency regarding the ‘costs’ removed from revenue generated made this apparently more transparent system actually less so.

There was less evidence of the second problem identified by Geiger and Jarzabkowski, that is, that the lack of connection led to a lack of incentive to increase revenue or reduce expenditure. The interviews revealed a strong awareness of the need to control expenditure very carefully. This was illustrated by the holding of salaries centrally at Faculty Y at Beta, and the obviously difficult budgetary situation in Faculty Z at the same university. The interviews also revealed a clear desire to increase revenue into the organisation.

As well as Clark’s (1998) identification of a strengthened steering core as desirable in an entrepreneurial university, Ansoff (cited in Hussey 1999) identified that the rate of change in the environment should influence the approach to strategy used in an organisation, suggesting that stronger top-down strategic planning was needed in a ‘discontinuous’ environment. Jarzabkowski (2002, p17) noted that in a decentralised resource allocation system “the top team managed to generate financial support for strategic actions by convincing interested parties of the desirability of these actions, so gradually building momentum. Unless senior management members are skilled negotiators operating in an environment of trust and transparency, this approach could slow down strategic change.”
This idea of strong leadership from the top was confirmed in the case studies, with all three Vice-Chancellors stating that the final decision on resource allocation rested with them. Although each of the case-study universities varied in size, mission and location, the Vice-Chancellors were nevertheless of the same mind with regards to their having the final say in resource allocations. Each made it clear they were responsible for decisions affecting the university, and that their role was to set strategy, and communicate that strategy using mechanisms such as resource allocation. None of the case studies illustrated a sense that revenue ‘belonged’ to individual earning areas, instead it was clear that revenue was a central resource to be allocated through a process driven from the top.

Massey (1996, p6) noted that “resources should be invested according to the so-called high-assay principles… In colleges and universities, high-assay means quality relative to institutional mission, vision and goals, delivered as productively as possible.” This is supported by the links between strategy and allocation articulated by the Vice-Chancellors, although whether these messages then continue through the organisation in its strategic conversations and decisions would be interesting to explore. It is also supported by the frequent references to core business, that is, teaching and research, throughout all the interviews conducted for the research.

That Australian universities are operating in a time of change was illustrated by the timeline of policy changes in the Australian Higher Education Sector, noting the ‘massification’ and amalgamations of the Dawkins era in the late 1980s, the increase of Federal control of the Nelson era (2001-2006) and the messages of ‘distinctiveness’ and ‘diversity’ of the current Bishop era.

Thomas (2000, p134) found that power accrues to units that bring in valued resources, and that the “implementation of devolved, formula-based systems increased the power of those departments that brought in valued resources”. This was not uniformly supported in these case studies; Deans did not convey the image of being in a position of power despite the earning capacities of their faculties. They respected the Vice-Chancellors’ roles as leaders of their organisations, and did not reveal strong power-bases from which to influence the resource allocation model or process.

Indeed, the interviews at the second-level indicated an environment of collaboration and reasonable negotiation, with some hint that ‘it would be nice to be listened to more’ and only one oblique reference to ‘telling the Vice-Chancellor how it should be done’.
Deans did speak about using their earning capacity as a negotiating tool, and Vice-Chancellors were cognisant of the need to keep their strong earners on-side, but it was quite clear that both sides of the negotiating table understood that the Vice-Chancellor retained final say over allocations.

In each of the case studies, faculties or divisions had a mix of units (schools or faculties) within them. Not all of these units were in a powerful earning position. Deans spoke of cross-subsidising between the performers and non-performers (in financial terms) within their faculties, recognising that some schools were valued as ‘cash cows’ while others were valued for their reputation and prestige rather than cash earnings. Further research might ask whether this experience of management of the ebb and flow of financial health within their own faculties might lead Deans to be more circumspect in their dealings with the Vice-Chancellor. A faculty that is financially powerful at one time might later find its fortunes reversed. Monash University’s Faculty of Information Technology student load, for example, reduced from 15% to 10% of the University’s total student load between 2001 and 2005. It is interesting to speculate how this might have affected the power of the Dean in resource allocation negotiations. Further research mapping the fluctuations of power and influence against the rise and fall of earnings could be revealing.

Thomas (2000, p134) concluded that “the implementation of a devolved formula-based system generated micro-political activity based on self-interest and created new powerful forces that gained their authority, not from a perceived closeness to the Vice-Chancellor, but through financial strength as reflected in the resource allocation model”. If this is so, then it was not at the level interviewed by this researcher. It may be that that the Research Quality Framework to be introduced in 2008 will create a ‘market’ in high performance researchers, and it is these individuals who will hold power through financial strength.

Looking in the other direction, however, at how Deans then allocated to their schools and within their own faculties, in all cases they had considerable autonomy in decision making. At University Alpha the Dean was able to choose his own level of cross-subsidies and noted how he valued different schools for their differing contributions to the faculty as a whole, acknowledging some schools were valued for their ability to

3 www.ups.monash.edu.au/statistics/summary/Enrolments/31August/Historical/Faculty/All/
earn student fees, others by their ability to earn research dollars. At Beta there was an example of two Deans using different methods for allocating within their faculties, with the Dean of Faculty Z devolving salaries to school level, while the Dean of Faculty Y paid salaries from a central pool. At University Gamma the Deputy Vice-Chancellor had used a resource allocation model and then a collaborative model over the preceding years.

All had the flexibility and autonomy to make their own decisions, although at Alpha and Beta the Deans had information regarding top level allocations to their individual schools to aid in their allocation processes. They could, and did, deviate from these allocations, for example, by ‘top slicing’ for faculty-wide initiatives.

Jarzabkowski (2002) noted that devolved resource allocation models reduced the strength of the centre to set direction. The Vice-Chancellors all spoke of their final say in resource allocation, indicating that the strength of the centre to set direction is an important issue to these university leaders.

7.2.2 Incentives and Rewards

The case studies confirmed the similarity of main sources of income for Australian universities: Federal Government funding for teaching and research, competitive grants for research, student fees and charges, earnings on investments, etc. There were, however, differences in the design of rewards and incentives. Note that in this discussion, ‘rewards’ are financial benefits received after delivery of a desired outcome, while ‘incentives’ are financial benefits provided in order to encourage progress towards a desired outcome.

Facione (2002, p3) noted, “A well-designed budget will manifest an institution’s core mission, its distinctive character, and its strategic goals. In teaching, what you grade is what you get; in institution building, what you fund is what you get”. The university resource allocation models studied did seem to follow this sentiment. The Vice-Chancellor of University Beta used the example of setting aside $60 million from faculty budgets to be redistributed on the basis of relative teaching and research performance as an illustration of driving behaviour. Similarly, the University Alpha process put a percentage of allocated budgets at risk if teaching and research targets
were not met. In both cases, the importance of the quality of teaching and research was being emphasised through the resource allocation process.

All three case study universities had considered the issue of rewards and incentives in their budget models. One Dean noted that sometimes activities that benefited the university financially actually cost a school or faculty money, because the returns did not flow back to where the revenue was earned. The school might invest in an offshore program through, for example, resources put into curriculum development and multiple visits to the offshore location by staff for start-up, teaching and quality assurance purposes, with student fees more than covering these costs. But because the fees were treated as central revenue and shared according to the standard operating resource allocation model, the school received less than it spent. An activity that was increasing the revenue and visibility of the university was not providing a return to those undertaking the activity. The question from the school was: ‘Why do we bother doing this?’

One solution was to isolate the income from the central revenue processes of the university for a period, to allow the school / faculty to get the activity up and running, cover its start-up costs and perhaps see some profit to put into other developments before ‘mainstreaming’ the activity. This acknowledged the need for incentives in the start-up and early years phases of a new activity, but also acknowledged that in the longer-term too many ‘special deals’ could be disruptive to the revenue of the organisation, and could encourage behaviour that, while profitable for a school or faculty, might not be in the best interests of the university as a whole.

All grappled with the balance of offering rewards for performance achieved, and / or incentives to drive particular behaviour. In a tight fiscal environment, offering incentives can mean having less to offer in rewards, and vice versa. Is it better to pay rewards knowing there may be a time lag between actual performance and receipt of funding, or offer incentives upfront?

The Gamma first-level model linked the source of revenue directly with its distribution. Revenue that was regarded as ‘non-growth’, such as the Commonwealth Government allocation for teaching students, was less attractive to the academic areas because they received only 47c in the dollar, with 53c in the dollar being directed to corporate and support services. ‘Growth’ revenue attracted a higher ‘rate of return’ to academic areas, at the rate of 55c in the dollar for domestic fees and 65c in the dollar for
international student fees. The rate for international students was differentiated from that of domestic students for two main reasons: because the University acknowledged that teaching international students was more demanding than teaching domestic students, and because the University saw this as an expanding market and wished to encourage the academic areas to continue to develop and deliver a suite of programs attractive to international students.

Gamma interviewees also noted the possibility of ‘special deals’ in the start-up phase of entrepreneurial activities that allowed an initiative time to recover some of its establishment costs before being included in the mainstream of the resource allocation system. This was seen as a mechanism that made it attractive to pursue entrepreneurial activities, because there was some breathing space before programs had to pay their way in the mainstream.

7.2.3 Cross subsidies

It was clear from the research interviews that cross-subsidies were accepted and not under any serious challenge. They occurred at both first and second levels, and were often explicit, for example where changes in allocation decisions were made after the RAM had been run. In at least one university, the extent of cross-subsidy was limited (schools could not receive more than 25% of their budget in subsidies).

As noted by Lewis and Pendlebury (2002), there are advantages in knowing the extent of cross-subsidies, such as the ability to make informed decisions about continuing, reducing or eliminating them where they occur. It is interesting to note, however, whether changing weightings in the resource allocation model does indeed qualify as a cross-subsidy. The Relative Funding Model weightings devised in the 1980s have been reproduced into the Commonwealth Grants Scheme, and it is not clear that the Government allocations reflect the actual cost of teaching different disciplines.

One Dean noted that if there are cross-subsidies year after year, perhaps the model being used needs to be adjusted to correctly value particular contributions.
7.3 Findings on the Research Problem

7.3.1 Two Levels of RAM

The major finding of this study is that there are clearly at least two levels of resource allocation in the university case-studies. The existing literature does not address how multiple levels of allocation work together, or against each other, in the organisation, and how strategic messages flow through these multiple allocation levels.

In all three case study universities, the first level allocations were made by senior management, and then one-line operational budgets were handed to Deans / DVC to conduct their own allocation processes through a faculty system. In each case the Dean had his/her own process, with differences in process and model evident within as well as across the universities. While in two cases there was some evidence of the Deans using the first-level calculations to inform their second level allocations, in all three case studies the final allocations were not a direct flow-through from the first level decisions.

The literature reviewed in Chapter 2 tends to discuss ‘the university’ as a single entity, whereas in the case studies, the universities were shown to have a single senior management, but then a number of middle-management sections, each with its own practices and processes.

Previous models in the literature are too simplistic, looking at one level only of allocations. The universities studied were complex organisations, and the theoretical models in the literature need to account for these two levels and the major variations in practice that occur at second levels within the same university. Each of the faculties in the case study universities was clearly part of a larger whole, but in RAM terms they acted as independent entities with their own models and processes.

Current literature does not provide models for describing and evaluating the actual practice, taking into account the diversity at second level allocations, and the divergence from first-level allocation models and processes.
7.3.2 Costs, Earnings and Allocations

A fundamental difference between universities and private companies is the disconnect between earnings, costs and allocations. Only one person during the interviews even commented that universities should perhaps start their allocation process by deciding what ought to be spent, for example, on teaching including how much each discipline really varies in teaching costs. Instead, the case-study universities all used the RFM values as a starting point for allocations, a system that was developed in the 1980s and which the Commonwealth clearly said does not need to be repeated inside universities (noted in Section 2.4.2). It might be useful for universities to consider what ought to be, rather than what is, in terms of costs and funding received through Commonwealth teaching grants. The connection between fees charged for non-government supported places, particularly at Masters level (and off-shore as well as on-shore) may bear more relation to market forces and how much students will pay rather than actual cost of delivery. This would be interesting to investigate further.

It would also be worth investigating whether any universities have successfully uncoupled internal allocations from how revenue is received, and how well this system is received within the university itself. Making this change may move a university towards a distinctive profile, a current Commonwealth policy. As Professor Glyn Davis, Vice-Chancellor of the University of Melbourne noted in his speech to the ‘Making the Boom Pay’ conference (Melbourne, November 2-3 2006) if universities are funded the same, they will look the same and undertake the same activities.

It is clear that corporate areas of universities need to be supported from revenue earned by areas with the capacity to generate revenue. In one of the models there was an attempt to shift from making these allocations first, however, before the allocations to revenue generating areas. This attempts to counter the feeling that, if corporate areas receive funding taken ‘off the top’ and this funding is guaranteed before other areas receive their allocations, then corporate areas may have less direct incentive to be more efficient and effective.

7.3.3 Supporting Entrepreneurial Behaviour

With Government funding decreasing as a proportion of overall budgets, universities have sought ways of increasing revenue generation by encouraging entrepreneurial
behaviour. It is not clear, however, that the allocation models examined in this research are fully adapted to this goal. There continues to be a fundamental conflict between rewarding those areas that successfully generate surpluses, and cross-subsidising those that do not ‘earn their keep’ financially.

There may be areas that are capable of generating more revenue, but as they contribute to the cross-subsidies used to support activities elsewhere, they receive less return and have less to invest in further revenue generation. This may be due to time-lags and to the design of the model as well as strategic decisions about cross-subsidies.

It is interesting to consider whether, while cross-subsidies exist, it is possible for a university to fulfill its entrepreneurial potential. If revenue does not flow in direct relationship to the activities that create the revenue, and if therefore incentives and rewards are not directly proportional to the success of the activity, does this suppress entrepreneurship? On the other hand, the very fact that universities have successfully made the transition away from high reliance on Government funding does indicate an ability to raise revenue creatively.

It would be interesting to examine the resource allocation practices of private universities to see if there are fundamental differences regarding cross-subsidies and the relationship between revenue flow and entrepreneurship. Do the strategic decisions made at the top of the organisation to redistribute revenue inhibit entrepreneurship in public universities compared with private universities?

### 7.3.4 Allocation Drivers

The case studies revealed some major drivers for allocation models at the first level and second levels. Some of the drivers were shared at first and second level allocations, while others appeared to be emphasised at one or other level.

At the first level, major drivers included transparency, cross-subsidies, balancing of rewards and incentives, communication of strategy, and the human factor of decisions and processes. At this level the messages that were being sent were very important, for example through performance funding for research and teaching quality.
At the second level there was also evidence of balancing historical and future allocations, and that understanding the ‘rules of the game’ was important in order to maximize allocations from the first level.

Common to both levels was the tension between rewards and incentives, and the clear understanding that final decisions are made by people, not by the resource allocation model. There was evidence that resource allocation models at both first and second levels needed to decide how to balance profitable activities with those requiring cross-subsidies.

7.3.5 Transparency

Another major finding of this study was the extent to which transparency is important, although this as a concept was not a major factor in the literature reviewed. Massey (1996, p3) was one of the few authors who mentioned process, noting that “While resource allocation does boil down to knowledgeable people making informed decisions, the record shows that process – the way decisions are made and communicated – powerfully affects outcomes.”

Transparency, being clear about how and why the allocations were made, was important for all the senior managers, whether they were at the controlling end of a resource allocation or the receiving end. Deans wanted to know why they were receiving a particular allocation and Vice-Chancellors wanted their staff to understand the same thing.

The Deans / DVC were in the middle of the allocation ‘cascade’, and all but one spoke about the need for transparency from the top level through to them. Understanding how their allocations were arrived at and their having some chance for input into the system were important to them. It was interesting to note that in the case studies, one Dean then worked with his Heads of School individually to come to allocations, which would seem a less transparent system than had been applied at the first level. Another university at the second level had a collegial process of all the Heads seeing the resource allocation spreadsheets together; they were thus able to debate the level of allocations to both their own sections and to others.
This differentiating between being ‘done unto’ and ‘doing unto others’ was not
remarked upon, although some interviewees at the second level did note they were
particularly transparent in their process to counteract a previously non-transparent
process above them.

7.3.6 Power Balance

Despite the literature indicating otherwise, resource allocation models that attribute
revenue earnings have not yet seen a shift in the balance of power towards those
earning the revenue. Whether through mechanism or culture, the strategic decisions
of the universities studied for this research were made at the top of the organisation.
University Beta used a top-level model that clearly and transparently attributed revenue
to those areas that earned it, and yet the comments of the Deans across all the case
studies indicated similar levels of power, rather than an elevated level that might be
expected from the University Beta model. Both Gamma and Alpha also attributed revenue
to those who earned it to some extent, but there was little difference in the
sense of power or control exercised by Deans and others below Vice-Chancellor level.
It may be that Deans have not yet understood their positions may be strengthened by
attribution of revenue, or it may be that none of the case-study Vice-Chancellors has
allowed a power shift to occur. As noted earlier, the Vice-Chancellors were clear that
the final decision lay with them.

It may also be possible that all those involved understand that the organisation may be
better placed in a competitive market if it operates on a more centralised basis.
Another explanation is that earning ‘power’ lies with the individuals further into the
organisations, such as ‘five star’ researchers who have the capacity to attract large
research grants into their universities, and to deliver excellent results in the
forthcoming Research Quality Framework assessment. These people may therefore
show their power through the commanding not only of higher salaries but also through
additional resources such as packages that include space for laboratories, postdoctoral
staff, scholarships for postgraduates to work with them and so on.

In contrast to the various top-down processes described was the Gamma second-level
model employed in the year of the study. That involved the Deans and the Deputy
Vice-Chancellor working in a collegial manner to determine allocations to each of the
faculties. Rather than an explicit model for allocations, this process worked from a
zero-based budgeting starting point, calculating how much of an allocation each faculty needed to achieve what it was expected to achieve. Some basic modelling was undertaken to provide a ‘ballpark’ for discussions, attributing income to earning units and determining possible allocations based on the first-level model. The process involved group discussions between the Deans and Deputy Vice-Chancellor, and therefore relied on the persuasive talents of individual Deans rather than a resource allocation model.

7.4 Implications for Practice

The most important factor arising from the research in practical terms is the need to consider RAM and processes surrounding them in a whole-of-university setting. A reasonable sequence for establishing or refining a model and process might be:

- hold strategic conversations among and between layers in the university
- identify and agree desired behaviours
- decide strategically how closely coupled allocations within the university will be to how the revenue arrived into the university, and get some common understanding on this
- design models at multiple layers together for best fit
- monitor and evaluate models, considering each as a part of a complete system.

In designing or modifying resource allocation models and processes, university managers need to identify the framework within which they are working at both the first and second level. The findings of this research have highlighted how a misalignment of first and second models has the potential to interrupt the flow of strategic messages through the organisation as well as change the intent of allocations as decided at the top of the organisation. Therefore practitioners should ask questions such as:

- How many levels of allocation are taking place and how well do the different levels fit together?
- How will the models and processes support the strategy of the organisation, and encourage strategic conversations throughout the organisation?
- Are the models and processes transparent and well understood?
- What are the parameters around levels of cross subsidies?
- What are the parameters around levels of reward and incentives?
The recognition of two levels of allocation requires understanding the drivers that seek to influence behaviour that each layer has in common, and those that are different, and understanding the elements that are common or different. It can be a conscious decision to minimise the disconnection by recognising the tensions between the levels.

One Dean advocated a non-formula approach at the second level that gave the opportunity for discussion about the overall strategy and faculty contributions to that strategy, leading ‘buy in’ from staff:

"I would say in a small institution I would not use a formula at all. I would use a more collegial approach. And so it's really saying 'look at your context’. Think through the options. Think about the behaviours that you want to drive but also in the context of the university a lot of the behaviours and outcomes that the university wants are actually wanted by the individual staff as well."

As Leidtka (1998) noted, this is a crucial question for the strategic direction of the organisation. A Vice-Chancellor and senior management team may well feel they have set and communicated the broad strategic directions of the organisation, but if the everyday decisions taken at school or unit level are not in accord with that direction, then those top level strategic decisions are ineffectual.

Every university needs staff at senior and middle levels to understand the ‘rules of the game’. It would be useful for all staff to understand how their activities relate to how the money arrives into the university, and the contribution they make to that revenue flow. Academic staff should understand how research dollars are earned not just through research grants but through block grants that are based on formulae that take into account elements such as competitive grants, postgraduate completions and publications, as well as understanding how Commonwealth funding and student fees are earned through undergraduate and graduate enrolments. General staff may be involved in academic support, corporate support, revenue generating activities such as international marketing and a variety of activities that may seem more or less remote to the revenue sources of the university. Making this link leads to an understanding of how revenue could or should flow through the organisation, and improve the quality of strategic conversations.

At least one of the case-study universities had a limit on the amount of cross-subsidisation permitted, and setting this kind of parameter refines the ‘rules of the game’ for all concerned. The practice of setting a limit was seen as a method to
encourage thinking on whether an activity requiring considerable cross-subsidisation should be undertaken in the first place, and reduce the likelihood of discontent amongst those paying for the cross-subsidy.

Setting boundaries for rewards and incentives is another way of communicating the ‘rules of the game’ and providing some certainty as well as motivation to perform. One issue that did arise during the interviews was whether rewards and incentives were received in full in practice, and this would make an interesting area for further study – do internal funding models deliver on their promises, and what happens when there are insufficient funds available to pay the promised rewards.

This approach of setting parameters also allows conversations about ‘whose money is it anyway?’ This could be threatening to the hierarchy if high-revenue earners push to exert their influence, but it does lead to discussions and decisions about incentives and rewards, cross-subsidies and other issues that can then lead to some decisions that are right for that particular university.

There is something of a paradox here. The Vice-Chancellors say that they make the final decisions in resource allocation because they have the ultimate responsibility for the health of the university. The Deans say they feel they do not have a lot of influence in the first-level allocation process. The Deans then have a great deal of influence on how the one-line budgets given to them are subsequently allocated to their schools and units. According to Mintzberg (1978) and Leidtka (1998) it is the small decisions made every day deep within an organisation that determine whether or not a strategic vision is fulfilled. Realised and emerging strategy are different at times from planned strategy depending on the implementation and circumstances within the organisation as planned strategy is rolled out. The Deans, therefore, may indeed have more power and influence than they actually realise, as may the individual and groups of staff within faculties.

It is interesting to speculate whether in the case-study universities, the Vice-Chancellors are influential enough to convey their strategic agendas despite any contrary messages being conveyed through the resource allocation model. This would indicate strong strategic power at the top of the organisation.
7.4.1 Evaluation and Change in Models

There was evidence of formal review at the first level of allocation models; indeed two of the universities had recently introduced new first level allocation models at the time of the data gathering. There was, however, no evidence of formal review of allocation models and processes at the second level. While change had occurred, for example, at the Gamma second level, change had been brought about by an informal review and consideration of the previous model, rather than by means of a formal review process. There was evidence of allegiance to particular theories of how to achieve strategic objectives (for example, with regards to rewards and incentives) rather than a full review of available elements and ‘best fit’ for the organisational unit.

In practice, a more considered approach to model and process review and an understanding of the factors that affect ‘best fit’ could prove most useful.

It is important to understand some of the consequences of decisions and know whether these consequences are acceptable. For example, University Beta moved to a model in 2005 that included charging faculties for the space they occupied. Centre E at Beta found that the system of charging for occupied space meant that it could no longer afford to pay for the space it occupied. A transparent system of charging for space occupied does encourage a careful use of space, and it also exposes the levels of support and cross-subsidy that might otherwise remain hidden. It is a decision for the university whether the consequences should be permitted to manifest themselves in the closure of activities that cannot afford to pay for space. The report noted that Faculty Z was unable to cross-subsidise the space costs for Centre E because its own financial circumstances were not strong enough. The charge for space is having real consequences for inhabitants of the university, and is an example of decisions made via a resource allocation model influencing not only behaviour but also the very activities that a university undertakes.

Other evidence of change included Gamma moving from using actual student data (ie previous or current year enrolment figures) to using forecast and target enrolment figures when calculating allocations. This indicates a shift from using the past to allocate for the future, to using the future to allocate for the future.
7.5 Limitations

7.5.1 Resource Allocation Models and Processes

The models used by the three case study universities were similar in that they assumed central ‘ownership’ of operational funding, that is, that revenue earned by the various areas within the university is ‘university’ money and can be distributed through the organisation by the Vice-Chancellor. No decentralised case studies were included in the study, although it might have been useful to provide further contrast in models and processes.

The data provides a snapshot of three organisations at a particular point in time with some historical background is provided. Reasons for changes in models were discussed in Chapter 5 where the case studies were set out. Tracking further evolution or revolution in the models and processes could be instructive, particularly if the reasons for change and the options considered before decisions are made are also tracked.

7.5.2 ‘Outside the Model’ Revenue

There are separate revenue streams in each of the case study universities that may not be subject to central control, such as where tied research grants (for example, Australian Research Council) are received by academic staff, or where a commercial activity (payment for services provided) is ‘isolated’ from the resource allocation model.

This study looked only at operational revenue that was subject to resource allocation models and did not examine the treatment of the full range of income into each case study university.

7.6 Implications for further research

There is scope for further study into the two levels of resource allocation identified in this study, and how second-level resource allocation models and processes interact with first level models and processes. Important questions about the flow of strategy
through the organisation and the encouragement of strategic conversations could be pursued, and how strategic messages are affected by the degree of ‘fit’ between the allocation models and processes. From a practitioner point-of-view, it would be useful to understand what models and processes could reduce any misfit between the allocation models.

Another aspect of this question about first and second level allocation models is whether any divergence or misalignment is of consequence. How important is it for the organisation to have a good fit of allocation models? Good alignment is not necessarily the same as having identical models, but it would be interesting to ask at what point lack of alignment becomes a problem for the institution. Does there need to be harmony between first and second level models, or is it enough that strategy is set at the top of the organisation and interpreted in different ways at the next level in different parts of the organisation? Is this flexibility at the second level a strength, because it ensures that people deeper in the organisation must translate the strategy communicated by the first-level allocations into strategies and allocations that enable the organisation to deliver the strategy? Does divergence at the second level deliver a ‘check and balance’ that tempers some of the strategy from the top and introduces strategy devised for ‘local’ conditions in the organisation?

Liedtka (1998: p3) also points out that “strategic intent can’t be told’. The new intent must make sense to those who must make it a reality”. Decisions made every day at all levels of an organisation drive the strategic direction of an organisation and therefore individuals in all areas and at all levels need to be involved in the ‘strategic conversation’ to enhance the quality of those decisions. If budgets are used to drive strategy, then at what levels should allocations be decided in order for Leidtka’s strategic conversations to be effective?

There could also be some interesting questions to examine in how much freedom academic managers, such as Deans and Heads of School do, and should, have to change the messages received from above. This touches on the debate about the management style of managerial or collegial universities. This researcher did not investigate or question the apparent shift towards a more managerial culture in Australian universities and away from the traditional collegial culture. As noted in Chapter One, there is some disquiet (Stilwell, 2003) about the increasing influence of commercial practices in Australian universities. It would be interesting to examine
resource allocation in its historical context, and whether (or how much) shifts in university culture have been reflected in changes in resource allocation models.

There would be value in following up the options for the basis of performance funding. The case studies provided examples of three different methodologies:

1. internal competition across faculties
2. improvements on faculty or schools own previous performance
3. achievement against faculty or school-specific targets.

Further research into the incentive value of these different methods would be instructive.

It would also be interesting to understand more about the lifespan of models and processes. Schools and faculties may concentrate on earning more for themselves by understanding how the models work and exploiting this to the full. If left in place too long, models and processes could lead to distortions of behaviour by over-emphasising certain activities. This possibility needs to be balanced against the confusion and angst that may result from unduly frequent changes. Universities need to keep in mind their external environment and may choose to make adjustments at first and second level in response to the environment within which they are operating.

7.7 Conclusion

From their earliest days universities have received funding from a variety of sources to teach and advance the generation and dissemination of knowledge. The advance of public education through the twentieth century resulted in universities coming under pressure from governments and society to expand the number of places available to undergraduate and postgraduate students, and the number and diversity of courses. Tension increased as universities sought to maintain standards while acceding to the demand to expand and diversify.

Demand has increased but government grants have not increased commensurately. Universities have thus been pushed to seek funding in new ways, leading to the present situation in which Australian universities seek to maintain their standards while recognising themselves as a crucial element in the national economy. Their task now is
to maintain a balance in their operations between attracting financial support while not compromising their academic standards and initiatives. At the same time they seek means by which to influence further change in their sector.

The relative fall in government funding to Australian universities and the response of the universities to this challenge has seen universities advancing to the forefront of the national economy, one of the largest earners of local currency and foreign exchange through teaching, consultancies and research.

The task before universities now is to maintain their standards and integrity as institutions of higher learning and research while operating as major financial corporations in an increasingly competitive international market.

This research has been designed to examine one aspect of change – now universities have differing streams of income, some from government, some from other sources, it is imperative that the resource allocation models and processes implemented in individual universities are ‘best fit’ and help rather than hinder the university’s mission.

By identifying the multiple layers of allocation, and by highlighting options and the processes within which models operate, the research provides insight for university and academic managers to enhance allocation models to achieve their university’s strategic goals.
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