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Dissertation Title: The Changing Nature of Strategic Research Management at Selected South African Universities: 1997-2007

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Abstract

The aim of this study is to investigate the changing nature of strategic research management at South African higher education institutions. A key assumption of the study is that the changing nature of research management at the strategic level of the university is a function of the interplay between the internal dynamics of universities as organisations and the demands and pressures for change (or transformation) emanating from the external environment of universities.

The hypothesis of the study is that, in response to the demands and challenges emanating from the government's transformation agenda (as outlined in the White Paper on Higher Education Transformation and the National Plan on Higher Education), universities have sought to become strategic actors. A combination of contingency and strategic choice theories was used as the conceptual tools to interrogate systematically the key research questions of this study. From the perspective of strategic choice theory, organisations are more than just a creation or product of environmental forces, but are also shaped by the choices that are made by those in leadership to direct or determine organisational action. Further, the strategic choices that organisations are confronted with are themselves circumscribed by possibilities and constraints that are essentially political in nature.

Through the use of a qualitative multiple case study design, the study examines how universities in South Africa have responded to these external demands for transformation and relevance, and how these challenges have, in turn, impacted on the internal dynamics of the strategic management of change in universities. Three universities were selected on the basis of an institutional typology that was developed for the study.

The main findings of the study are the following:

- The tentative and somewhat confused implementation of the new public management reform agenda saw the emergence of a marketised higher education environment alongside the introduction of initiatives that sought to redress historical institutional inequalities. Further, the study also highlights how some of the policy interventions that were introduced by government to promote efficiency and effectiveness accentuated inequalities between historically black and white higher education institutions.
- While universities sought to develop or enhance the capacity of the executive management layer to steer the strategic agenda of their organisations, the success of these interventions was uneven. The case studies demonstrate that while structural organisational reform and the development of a framework to legitimate the role of managers in organisational change are important, and even necessary, conditions for enhancing the executive management's capacity to steer a university's strategic reform agenda, the ability of universities to develop the capabilities or competencies that would enable them to become strategic actors is limited.
- There is role conflict or ambiguity of the deanship in the organisational structure of the university, where, is some cases, deans regard their role as the conveyors or agents of executive authority at the faculty level, and in other cases, where the deans see themselves as representing the academic voice and interest of their faculties at the executive level of the organisation.
- the proclamation of the triumph of managerialism over academic self-governance is premature. Although academics have had to take into account the interests and needs of the university in defining their research agenda, and have had to be more accountable about the work they do (to external interests such as government and funders), they still enjoy considerable discretion over their work.

Key words

- Higher Education Transformation
- Higher Education Policy
- Policy Steering Instruments
- The New Public Management
- Managerialism
- Strategic Research Management
- Higher Education Organisational Change
- Strategic Choice Theory
- University as a Strategic Actor
- Multi-Level Organisational Analysis

Declaration

I declare that this thesis, titled: *The Changing Nature of Strategic Research Management at Selected South African Universities: 1997-2007,* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Tembile Kulati

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List of Acronyms

ACU:	Association of Commonwealth Universities
ANC:	African National Congress
BERA:	British Educational Research Association
CEPD:	Centre for Education Policy Development
CHE:	Council on Higher Education
CODESA:	Convention for a Democratic South Africa
DHET:	Department of Higher Education and Training
DST:	Department of Science and Technology
DTI:	Department of Trade and Industry
ERS:	Education Renewal Strategy
FET:	Further Education and Training
GDP:	Gross Domestic Product
GEAR:	Growth, Employment, and Redistribution
GERD:	Government Domestic Expenditure on Research and Development
GNU:	Government of National Unity
HEMIS:	Higher Education Management Information Systems
ICT:	Information and Communications Technology
IRDP:	Institutional Research Development Programme
MDM:	Mass Democratic Movement
MRC:	Medical Research Council
NACURA:	National Council of University Research Administrators
NCHE:	National Commission on Higher Education
NECC:	National Education Coordinating Committee
NEPI:	National Education Policy Investigation
NHLS:	National Health Laboratory Services

NRF:	National Research Foundation
NSF:	National Skills Fund
NWG:	National Working Group
OECD:	Organisation for Economic Cooperation and Development
RDP:	Reconstruction and Development Programme
SANSCO:	South African Students Congress
SAPSE:	South African Post Secondary Education
SET:	Senior Executive Team
SETI:	Science, Engineering and Technology Institutions
SPARC:	Strategic Planning and Allocation of Resources Committee
SRA:	Society for Research Administrators
TBVC:	Transkei, Bophuthatswana, Venda, Ciskei
THRIP:	Technology and Human Resources for Industry Project
TVET:	Technical Vocational Education and Training
UDUSA:	Union of Democratic University Staff Associations
UK:	United Kingdom
US:	United States (of America)
WPPSET:	White Paper for Post-School Education and Training

Chapter 1: Introduction

Universities and other institutions of higher education are key players in the knowledge, information, and data-driven economy, particularly more so in the context of developing countries, where the footprint of industry and the private sector in science and technology investment is still marginal when compared to the highly industrialised economies. In the case of South Africa, the latest available data show universities continuing to be major contributors to the national scientific and research enterprise, where they account for the largest proportion of research and development (R&D) personnel, and the second largest R&D expenditure after the business sector (Department of Science and Innovation, 2022). Similarly, higher education institutions located in countries across the Organisation for Economic Cooperation and Development (OECD) remain the principal producers of fundamental or basic research (OECD, 2017). As Manuel Castells has put it: 'If knowledge is the electricity of the new informational world economy, then institutions of higher education are the power sources on which a new development process must rely' (Castells, 1993).

Higher education systems in developing countries that are undergoing transition are also faced with the task of undertaking major reforms with regard to their governance and management. In the case of South Africa, the pressures facing higher education institutions for change in the period that is the focus of this study, namely between 1997 and 2007, were in response to a myriad of challenges, namely:

- the demand for transformation, especially in relation to addressing and redressing the historical inequalities that were a product of apartheid education
- the need to rapidly develop the productive capacities of its economy in order for the country to compete in a globalising world, while faced with the consequences

of being at the margins of global scientific innovations and knowledge networks

- an overload of demands from government and society for relevance, efficiency, effectiveness, etc. (and which had to be addressed simultaneously), coupled with the generally poor response capabilities of higher education institutions

The pressures and demand for the reform (or transformation) of the university's scientific and research enterprise has seen the introduction by governments of measures to steer the research outputs of universities towards meeting national development goals. For example, the South African Department of Education's White Paper on Higher Education Transformation has challenged higher education institutions to:

> deliver the requisite research…and the knowledge to equip a developing society with the capacity to address national needs and to participate in a rapidly changing and competitive global context (Department of Education, 1997: 10).

Furthermore, there have been other governmental initiatives such as THRIP (The Technology and Human Resources for Industry Project), which have been introduced in order to steer or orient higher education research towards meeting market needs, through forging closer research collaboration with industry.

The South African higher education system has also experienced a shift towards more performance-driven approaches to the funding of university research, which have resulted in the introduction of selectivity in research funding regimes at the national level. In this regard, performance-driven funding for research has been introduced through schemes such as the DST/NRF Centres of Excellence programme, which is an initiative that is funded by the Department of Science and Innovation (formerly known as the Department of Science and Technology, hence DST), and is managed by the National Research Foundation (NRF). This initiative was set up to accelerate the delivery of appropriate human resources and knowledge capacity in science and technology development and

innovation, especially in areas that are deemed to be of 'strategic national importance', according to the National Research and Development Strategy (Government of Republic of South Africa, 2002).

In the light of these developments, universities in South African were confronted with pressures, emanating primarily, but not exclusively, from government, which challenged universities to transform the governance and management of their scientific research enterprise. In particular, universities were expected to (Kulati, 2000):

- reconfigure their institutional missions, and ensure that the research that is produced not only addresses national needs and concerns, but also compares favourably internationally
- forge new kinds of relationships with other knowledge producers within and outside the higher education sector, especially in industry and the private sector broadly;
- change the traditional way in which institutions have produced, packaged, and disseminated their primary product – knowledge – in order to cater for a diverse, and differently prepared, student population
- improve the management of the scientific research enterprise of higher education institutions, especially as this related to its efficiency and responsiveness, through increased research productivity and stronger collaboration with industry
- develop innovative approaches to the management of the university research enterprise so that institutions are able to navigate the above challenges in ways that are both innovative, and have less reliance on the public purse.

Aim of the Study

The aim of this study is to investigate the changing nature of strategic research management at South African higher education institutions during the ten-year period of 1997 to 2007. The study examines this question through the use of case studies from three universities. The reason the focus of the study is on this particular (ten-year) period is that the legislation that spells out the policy intent and position of the newly elected post-apartheid government with regard to higher education transformation (namely the White Paper on Higher Education and the Higher Education Act, respectively), were both promulgated in 1997. The ten-year period therefore provides sufficient time for an assessment to be made regarding the impact the legislative framework had on institutional change strategies in the post-apartheid period. Furthermore, it also allows us to interrogate the impact of other policy and research steering instruments that were implemented during this period, such as the new planning regime that was introduced through the National Plan on Higher Education, which was released in 2001, and the new higher education funding formula that was implemented in 2004.

A key assumption of the study, therefore, is that the changing nature of research management at the strategic level of the university is a function of the interplay between the internal dynamics of universities as organisations and the demands and pressures for change (or transformation) emanating from the external environment of universities.

Objectives of the Study

Flowing from the aim of the study, and also cognisant of the multi-level nature of the university organisation (which is discussed in more detail in the chapter on the research design of the study), the objectives of this study are:

1. To examine the strategies that universities adopted in response to the government's higher education transformation and reform agenda as set out in the White Paper on Higher Education Transformation, especially as these affected the approaches to research management at the strategic level of the universities
2. To assess the extent to which the roles and responsibilities of deans changed with regard to research management, given their contradictory roles as executive managers of their faculties on the one hand (where, in some cases, they formed part of the university's executive team) and, on the other hand, their role as the custodians of the (academic) interests of their faculties
3. To interrogate how, and to what extent, the changes to research management at the strategic level of the university had implications for the setting of the research agenda and priorities of academics at the level of research performance.

Hypothesis of the Study

The hypothesis of the study is that, in response to the demands and challenges emanating from the government's transformation agenda, universities have sought to become strategic actors. The emergence of strategic actorhood is manifest in a shift in the approach to research management at the strategic level of universities, from a facilitatory to a more directive mode.

The propositions of the study that flow from the hypothesis above are discussed in more detail in the chapter on the study's research design.

Distinctiveness and Contribution of this Study

There is a dearth of relevant studies that have explored, through *empirical* investigation, the nature and impact of the implementation of the transformation agenda of the post-

apartheid government on the governance and managerial strategies of South African universities. There are two studies that have explored the changing nature of the deanship against the backdrop of the emergence of managerialism at South African universities (Johnson, 2005; Seale and Cross, 2018), and another (a single case study) that has examined the impact of managerialism on student participation in university governance (Luescher, 2008). This study is different from these studies in three significant respects: the first is that it examines the dynamics of change in university management and governance through the prism of the strategic management of the university's research enterprise, which is a central mission of the university. The second distinguishing feature is that the research design of this study is informed by an understanding of the university as a multi-level organisation, a concept that is discussed in further detail in the chapter on research design. There is a paucity of research that highlights, or takes cognisance of, the multi-level nature of university organisation, and the implications of this key organisational feature of the university for its governance and management. This study seeks to address this gap in the literature. The third point that sets this study apart from the studies cited above is that these studies were based on the examination of a single case (in other words, they were limited to interrogating the governance and management dynamics of a single university), whereas this study seeks to strengthen the reliability of its findings by adopting a multiple-case study research design.

Structure and Outline of the Study

The study consists of eight chapters (excluding this introductory chapter), which cover four broad topics or themes. Chapter 2 provides a broad overview of the legislative and policy contexts that form the backdrop, and provide the impetus, to the changes in the management and governance of universities in South Africa. Chapter 3 has for sub-themes: first, it provides an overview of the literature on research management in

universities; second, it interrogates some of the key conceptual models that seek to explain the university as an organisation; third, it examines the international literature on the nature of the external drivers of change in universities, in particular the emergence of the new public management as the ideological framework that drove the reform of public sector organisations in Western Europe and beyond; fourth, it introduces and discusses the two theoretical frameworks that underpin this study. The focus of Chapter 4 is on the research design and methods used to undertake the study.

The three chapters following Chapter 4 (Chapters 5, 6 and 7) constitute the three cases in which the detailed examination of the key questions of the study is undertaken. Chapter 8 is the summative analysis of the three cases, whose objective is to highlight the key themes and findings on the basis of the empirical and collective examination of the cases. The last chapter (Chapter 9) concludes the study by drawing out the main findings in relation to the key objectives and hypothesis of the study, as well as some observations about the utility of the conceptual frameworks underpinning the study.

Chapter 2: The South African Higher Education Policy and Research Landscape

Introduction

The purpose of this chapter is to provide an overview of the key drivers in the external environment of universities that have provided the impetus for reform in university governance and management in South Africa. This chapter will serve as the contextual backdrop to the cases that will be discussed later in this study, in Chapters 5, 6 and 7, respectively. One of the key issues to be addressed in this chapter is the nature and character of the transformation agenda in the South African higher education and research policy landscapes during the ten-year period (between 1997 and 2007) that is the focus of this study. In addition to examining the legislative framework and policy processes that have shaped the South African higher education reform agenda at the national level during this period, the chapter will also discuss some of the policy development initiatives that were spearheaded by oppositional forces (commonly referred to as the mass democratic movement) in the period leading up to the democratic elections in 1994, and which played a central role in influencing the post-apartheid higher education policy framework and transformation agenda.

For the purpose of this overview, the discussion will be limited to initiatives emanating from the higher education and the science and technology/innovation policy sectors, because it is primarily initiatives from these two policy domains that have been the most influential with regard to shaping the higher education reform agenda in South Africa. In this regard, the first section will discuss the higher education policy reform process and its impact on higher education institutional change, and the second section will focus on the higher education research landscape and some of the key initiatives that influenced institutional change strategies.

Key Phases of the Higher Education Policy Reform Process

This section provides an overview and analysis of the regulatory and policy frameworks that have framed the transformation agenda for South African higher education during the period of 1997 to 2007. The section also discusses some of the key policy development initiatives undertaken by non-governmental opposition formations prior to 1997, which laid the basis for the post-apartheid higher education policy proposals of the democratic government. It is proposed that a useful approach for interrogating the policy reform and transformation trajectory of South African higher education is to conceptualise it as falling into four distinct phases or periods.

The key criteria that have been used to distinguish between the various phases are the nature, site and purpose of policy development, the balance or dynamics of power between the key actors in the policy making process, and the effectiveness of the policy interventions during each phase. In this regard, there is considerable overlap in the criteria used in this study and those used by Badat (2004 and 2009) in determining the periodisation of the post-apartheid higher education policy reform process. There is, however, also some variation between the two approaches adopted. The primary difference is that Badat's periodisation (see especially Badat, 2009) has a fixed 5-year span for each of the distinct phases, whereas the one adopted in this study does not, *a priori,* limit each phase to a specific number of years. In this study, the length of each phase is, rather, determined by the nature and dynamics of the policymaking process itself during the relevant phase. The other differences between the periodisation adopted in this study and that used by Badat will be highlighted in the appropriate sections in the discussion that follows.

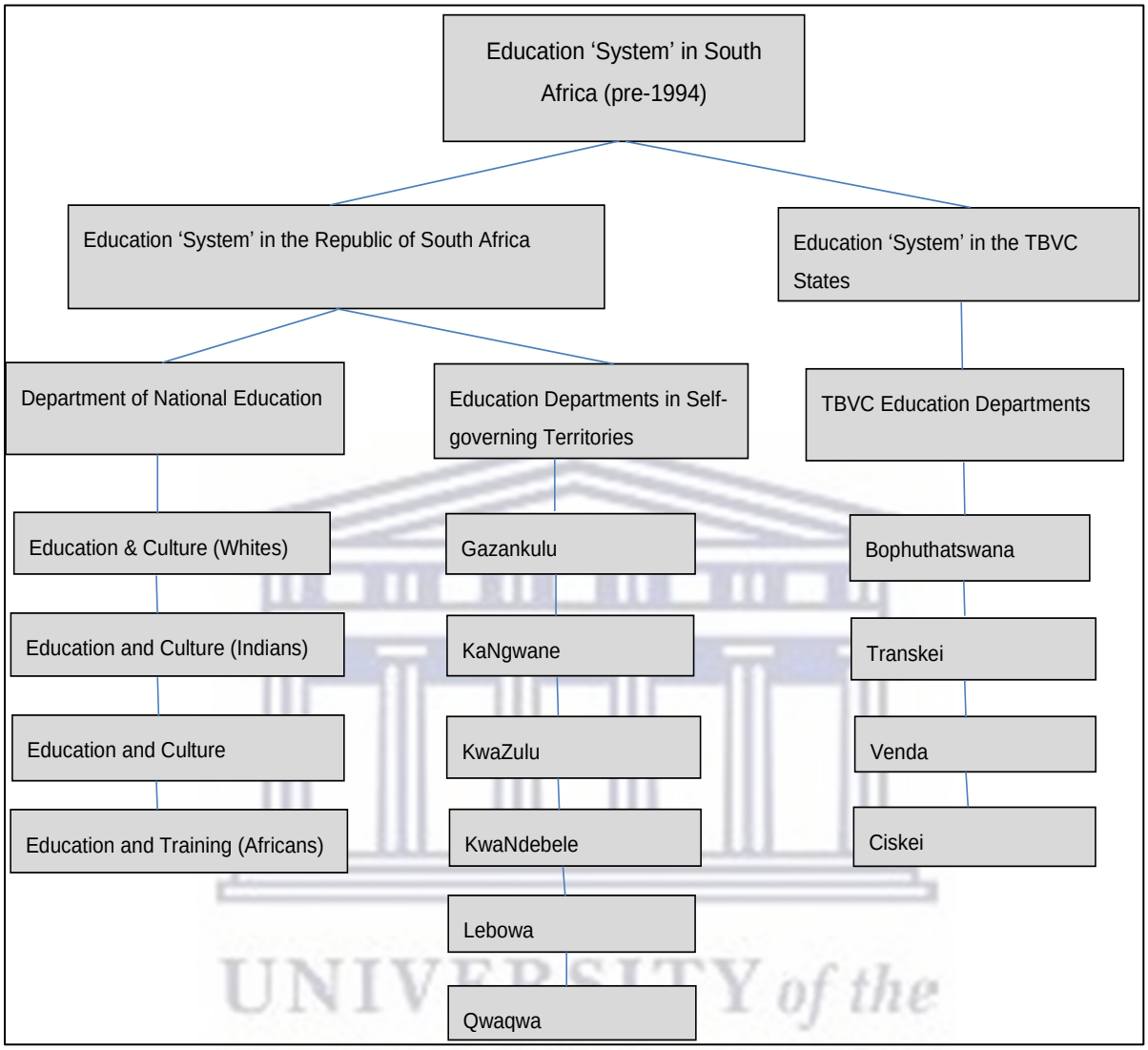
The First Phase (1990 - 1993): From Protest to the Development of Policy Options

The first phase, which covers the years between 1990 and 1993, signalled a shift from protest action against the apartheid government to the development of policy options for a post-apartheid dispensation. Badat (2009) refers to this phase as one of apartheid liberalisation in that the apartheid government sought to institute reforms in various areas of public policy, including higher education, against the backdrop of a higher education sector and institutions that continued to be sites of struggle against the apartheid regime (Badat, 2009). One of the highlights of this phase is the range of policy development initiatives (discussed later in this section) that were led by the Mass Democratic Movement (MDM), which was a loose coalition of progressive organisations that were aligned to the African National Congress. These initiatives came to form an important reservoir of progressive policy options that framed the agenda for higher education transformation in the post-apartheid dispensation.

The Higher Education Regulatory Framework under Apartheid

Under apartheid, South African universities had their role and mandate strictly assigned to them and regulated by government. As part of the reform efforts of the apartheid government's administration under PW Botha, the promulgation of a new constitution in 1984 gave rise to a distinction being made between 'own' and 'general' affairs, a distinction whose direct consequence was the designation of higher education institutions for the exclusive use of each of the four population groups, namely Africans, Coloureds, Indians and Whites (Bunting, 2006b).

Figure 1: Education System in South Africa under Apartheid



Source: Council on Higher Education, 2004, page 22

Besides a policy-making process marked by a ritual of secrecy and authoritarianism, the apartheid system left a legacy of a racially and ethnically structured higher education system that was administered by fifteen different government departments (see Figure 1 above) which, in turn, were characterised by complex and overlapping mandates, and were run according to their own regulations (Cross, Mungadi and Rouhani, 2002). Out of the thirty-six higher education institutions that comprised the higher education system under apartheid, 19 were designated for the exclusive use of whites, two for coloureds, a further two designated

for Indians, and the remaining thirteen were for Africans. With respect to the group of institutions designated for Africans, seven were located in the TBVC states (these were the four Bantustans or homelands of Transkei, Bophuthatswana, Venda and Ciskei, which had gained so-called 'independence' from apartheid South Africa), and six were from the homelands of Gazankulu, KaNgwane, KwaZulu, KwaNdebele, Lebowa, and Qwaqwa, which were the Bantustans that did not gain 'independence' from South Africa.

The two key features of the complex regulatory framework governing higher education under apartheid were, first, the emphasis on racial differentiation in governance and funding arrangements and, second, the functional differentiation that prescribed the missions of universities and technikons. The racial differentiation in higher education governance and funding meant that the historically black universities and technikons were funded through a mechanism of 'negotiated budgets', while the historically white institutions universities and technikons were financed via a funding formula (Bunting, 2006a). The key difference between these two mechanisms was that historically white institutions had far more decision-making power and administrative oversight than their historically black counterparts over how the funds could be spent, and how any surplus funds could be invested. The second feature of the regulatory framework under apartheid was the binary divide that prescribed the functional differentiation between the 21 universities and 15 technikons that existed at the time, and which was underpinned by an essentialist distinction that was made between the domain of university education, whose focus was deemed to be basic or fundamental science, and that of technikon education, whose forte was in applied science or technology; This distinction between universities and technikons was strictly enforced through various pieces of legislation (Bunting, 2006b).

Emerging policy options from the Mass Democratic Movement

The release of Nelson Mandela and the unbanning of political organisations in 1990 were followed in 1991 by the commencement of the multi-party negotiations for a post-apartheid political settlement between the apartheid government and oppositional forces, the so-called CODESA (Convention for a Democratic South Africa) talks. Following the commencement of the CODESA process, a number of civil society organisations that were part of the Mass Democratic Movement spearheaded the shift in the fight against apartheid education, from a focus on protest campaigns to the development of education policy options that would replace those of the apartheid government. The various organisations that were at the forefront of the development of post-apartheid higher education policy options were, in the main, organised under the National Education Coordinating Committee (NECC), an umbrella progressive movement that included the Union of Democratic University Staff Associations (UDUSA), the South African National Students Congress (SANSCO), the Centre for Education Policy Development (CEPD), and the Education Policy Units that were based at the universities of Fort Hare, Natal (Pietermaritzburg campus, Western Cape, and Witwatersrand). The process of developing alternative policy options was premised on the expectation of the successful election to political power of a democratic government under the leadership of the African National Congress (ANC), which had begun to organise popular support under the slogan: 'Ready to Govern' (African National Congress, 1992).

A key development in this phase was the establishment of the National Education Policy Investigation (NEPI) by the NECC in 1990, which brought together over 300 academics, educators and activists, who were organised into twelve research groups covering education policy areas from early childhood educare to post-secondary education (National Education Policy Investigation, 1992). The NEPI report, which was released in 1992, was later used as the basis for the ANC's education policy development exercise, which culminated in the publication in January 1994 of broad education policy proposals in the so-called 'ANC Yellow

Book', titled: *A Policy Framework for Education and Training* (African National Congress, 1994). Another prominent voice in this phase was the Union of Democratic University Staff Associations (UDUSA), which hosted policy forums that explored policy alternatives for a post-apartheid higher education landscape, some of which found their way into the work of NEPI and the National Commission on Higher Education (Sehoole, 2005). The commencement of NEPI took the initiative away from the Education Renewal Strategy (ERS), the education reform exercise that was launched in 1990 and led by the apartheid government, and whose report was also released in 1992 (Department of National Education, 1992).

The education policy initiatives of the mass democratic movement saw the emergence of important policy principles and goals that came to be regarded as the central pillars of the post-apartheid higher education transformation project, namely non-racialism, non-sexism, democratic participation, redress and a unified education system (African National Congress, 1994). In the course of the development of alternative policy proposals, this phase also saw the emergence of debates that interrogated some the tensions and contradictions inherent in the need to address the challenges facing higher education transformation. In general, the policy development processes and debates in this phase sought to distinguish between, on the one hand, the *reform* path of the apartheid government (as exemplified by the ERS initiative mentioned above) and, on the other hand, the post-apartheid higher education *transformation* agenda of the Mass Democratic Movement. Even though transformation as a conceptual construct has remained elusive and loosely defined long after the demise of apartheid (see Van Schalkwyk et al., 2022), during this phase (1990 - 1993) it was nonetheless understood to signify a radical departure from, and a complete remodelling of, the apartheid higher education order, including its ideological and structural underpinnings. Indeed, Pandor has argued that although transformation was regarded as the desired objective, the variety of uses and meanings that came to be associated with the concept led to multiple interpretations and much contestation regarding its meaning (Pandor, 2018). As

will be shown in this study, the contestation around the meaning and implications of the transformation agenda for higher education remained a constant feature throughout the post-apartheid higher education policymaking process.

Another notable debate during this phase centred on the tension between equity and development, which was seen as one of the central challenges facing the post-apartheid government, given the urgency of the demands for transformation (Badat, Barends and Wolpe, 1993). The (social) equity aspect of the transformation agenda was seen as the need to eradicate race and gender inequities in student enrolment and academic staff profiles in higher education institutions through corrective measures such as admissions, recruitment, and funding policies. The development part of the reform equation manifested itself in the framing of policy goals whose objective was to improve and enhance the ability of the higher education system to deliver the requisite products that would be of benefit to the country's social and economic development needs. There was an expectation that these challenges — of social equity on the one hand, and, on the other hand, of development, efficiency, and responsiveness — would have to be addressed simultaneously (Badat, Barends and Wolpe, 1993; Badat, 2004).

Another significant feature of this phase, as far as higher education policy development is concerned, is that it brought about a certain measure of convergence, if not broad agreement, among progressive actors and stakeholders in higher education with regard to the common framework of goals, values and principles that would underpin a transformed higher education system. This broad consensus amongst the various organisations and formations that were organised under umbrella of the Mass Democratic Movement laid the basis for the considerable continuity (in relation to policy development) between the first (pre-1994) and the second phase (1994 - 1997), to which the discussion now turns.

The Second Phase (1994 - 1997): From Policy Options to a New Regulatory Framework

The election of a democratic government in 1994 marked the beginning of the second phase of post-apartheid higher education policy reform process, which saw the state beginning the process on developing the key policy and legislative pillars for steering the transformation of higher education. This phase has also been variously described as one of 'policy frameworks' (Samoff, 1996), the 'period of optimism' (Bunting, 2006b), or one of 'high expectations' (Council on Higher Education, 2007). In Badat's periodisation (which covers the years from 1994 to 1999), the second phase is characterised by the shift from symbolic to substantive policy development, and also by weak steering and a policy vacuum, which saw unregulated growth in enrolments at some historically white institutions – especially of black students in distance education programmes- that was simultaneously accompanied by declining enrolments at the historically black universities (Badat, 2009). Another manifestation of weak steering was the proliferation of private higher education providers and the unregulated partnerships that emerged between private and public higher education institutions (Badat, 2009). In the periodisation adopted in this study, there is a distinction made between the policy development phase (1994 – 1997) and the one characterised by an implementation vacuum and weak steering, which are features of the third phase (1997 - 2001).

One of the key challenges facing the state in this phase was the need to make choices from the array of policy alternatives that were developed by initiatives such as NEPI in the first phase, and to translate these into a set of concrete policy positions that would shape the higher education transformation agenda of the newly elected democratic government. The ANC's *Reconstruction and Development Programme* (RDP) and the so-called 'Yellow Book' (*A Policy Framework for Education and Training),* which were both published in 1994, together constituted the guiding framework for the key policy positions of the ANC in the broader areas of public policy and in the different sectors of education and training. These

two ANC policy documents set the broad parameters, in terms of the goals, principles, and values that would underpin the development of policy proposals for the transformation of higher education, which were later to inform the work of the National Commission on Higher Education.

The National Commission on Higher Education

The National Commission on Higher Education (NCHE) was appointed in February 1995 by the newly-elected Government of National Unity (GNU) to advise, *inter alia,* on the following: the national goals of the (new) system of higher education; the institutional types required by the post-apartheid higher education system, including their particular missions, their respective inter-relationships, and their relationships to the state; the structures required to govern and administer higher education, both at the national and institutional levels; and the funding mechanisms for institutions and students in the higher education system (National Commission on Higher Education, 1996).

The recommendations of the NCHE report, which was released in August 1996, were underpinned by three policy pillars, namely increasing the participation of the previously marginalised population in higher education, enhancing the responsiveness of the higher education system to the needs of society, and increasing cooperation and partnerships between higher education and other sectors, including industry and civil society. Some of the key proposals and recommendations from the NCHE report were the establishment of a single, coordinated, higher education system; the introduction of cooperative governance as a model to guide national and institutional governance; the introduction of a quality assurance system, and; the establishment of intermediary bodies that would mediate the relationship between the higher education sector and the state (National Commission on Higher Education, 1996).

According to Moja and Hayward, one of the more significant contributions of the NCHE to South African policy development was at the symbolic level, especially the extent to which its consultative policy development process engendered a broad consensus among the various stakeholders in higher education on the key values and principles that would underpin a transformed system higher education (Moja and Hayward, 2000). In my view, the NCHE can also be considered to have been a success in a more concrete sense, namely the extent to which many of its recommendations were adopted by government and formed the basis for much of the new higher education regulatory framework, as reflected in the White Paper on Higher Education Transformation that was promulgated by parliament in 1997.

The White Paper on Higher Education and the Higher Education Act (1997)

The primary goal of the higher education legislative and regulatory framework, as expressed in the *Education White Paper 3: A Programme for the Transformation of Higher Education* (henceforth the White Paper 3) and the *Higher Education Act (No. 101) of 1997*, is to provide the rationale and policy platform for the transformation of the higher education system. Some of the key challenges that faced the newly elected government with respect to the transformation of higher education included the following: building a single, coordinated, planned, well-funded, and governed higher education system; redressing the inherited institutional and individual inequities of the apartheid education system, and; addressing the needs of an economy and society faced with major socio-economic developmental challenges (Department of Education, 1997). The White Paper 3 lists eight principles that would guide the transformation project in higher education, namely equity and redress, democratisation, development, quality, effectiveness and efficiency, academic freedom, institutional autonomy, and public accountability. Given that it is a statement of policy intent rather than an implementation plan, the White Paper 3 provide only limited details (especially in relation to higher education governance) regarding how these principles would be made operational at the level of higher education institutions, nor how the system would be

monitored and assessed against the achievement of these principles. Some of the government's policy positions would find concrete expression and greater elaboration in the National Plan that was released in 2001, which is discussed later in this chapter.

Badat (1999) argues that three intertwined factors laid the basis for the framing of the higher education transformation agenda in the White Paper 3: the first was the inherited system of apartheid higher education that reproduced white privilege and black subordination through an unequal and ethnic-based higher education institutional landscape. The second factor was the need to address the urgent development needs facing South Africa, which found policy expression in the government's Reconstruction and Development Programme (RDP). The third challenge facing the country was the need to re-integrate its economy (after many years of economic sanctions) into a globalising, knowledge-driven, and rapidly changing, world economic order. Given these challenges, many of the policy precepts of the White Paper 3 focused on addressing the twin challenges of equity and development. At the level of the individual demographics, the policy goals related to the equity challenge sought to eradicate race and gender inequities in student enrolment and academic staff profiles in higher education institutions, through corrective interventions in areas such as student admissions and staff recruitment, and also through funding policies that would increase access to higher education for previously disadvantaged groups. In relation to addressing institutional inequities, the White Paper 3's policy pronouncements sought to redress the resource and educational quality imbalances between the historically black and white higher education institutions, especially with regard to developing research capacity and addressing infrastructure backlogs at historically black institutions.

The development aspect of the White Paper 3's reform programme sought to give effect to the policy goal of improving and enhancing the ability of the higher education system to deliver the requisite products (especially in terms of its graduates and research outputs) that would be of benefit to the country's social and economic development needs. However,

given the wastefulness and inefficiencies of the apartheid education system, the premise of the White Paper 3's policy position was also that a precondition to achieving a transformed higher education system was a commitment to improving its efficiency and enhancing its effectiveness. In this regard, one of the policy goals highlighted in the White Paper 3, which is of relevance to the subject of this study, is the need to develop and enhance the capacity of higher education institutions to increase their research productivity through various measures, such as increasing the number of postgraduate outputs, especially at the masters and doctoral levels. Other policy interventions proposed in the White Paper 3 sought to enhance the innovative capabilities of higher education institutions through increased investment in research infrastructure, and the promotion of research partnerships between higher education and industry.

While the White Paper 3 clearly contains some of the language of the new public management, especially in its emphasis on the need to promote efficiency and effectiveness in higher education, the regulatory framework nonetheless assumed a central role for the state in driving systemic and institutional transformation. In this regard, much store was placed on the anticipated introduction of planning as a key policy instrument that would see the state playing a key role in steering higher education institutions towards addressing the challenges facing the country.

While the second phase of the policy development process was characterised by unprecedented participation by various stakeholders in policy deliberation, structural and policy tensions began to emerge within the system. There was considerable tension between, on the one hand, the transformation vision and goals as articulated in the NCHE Report, the White Paper 3 and the Higher Education Act, which were inspired by the Reconstruction and Development Programme (RDP) and, on the other hand, the Growth, Employment and Redistribution (GEAR), the government's macroeconomic framework that was introduced in 1996 (Cross and Kulati, 2022). GEAR placed issues of fiscal discipline,

efficiency, effectiveness and performance firmly on the agenda of public policy which, in some cases, resulted in long-cherished policy positions being abandoned or modified. A prime example in this regard was in relation to the implications (for the fiscus) of the commitment made in government policy in relation to promoting equity and redress by increasing access to higher education, which manifested itself in the policy shift from the goal of massification that was proposed in the NCHE, to the one of planned expansion that became the adopted policy position in the White Paper 3.

What has emerged in the discussion of the second phase is the (political) symbolism of the new higher education regulatory framework in developing consensus on the key values and principles that would underpin a transformed higher education system, and some of the expected outcomes, for example increased access to higher education for previously disadvantaged groups, and democratic participation in institutional governance. While the policy and regulative frameworks were lauded for their transformative intent, they lacked the necessary detail on implementation. As Lange has pointed out, the fact that policies lacked detail should not be surprising given that higher education policy during this phase put much emphasis on establishing the nature and extent of the challenges facing the higher education system and identifying the key values and principles that would underpin its transformation (Lange, 1997). What was therefore missing during this period was a strategy for implementing the proposed policies. The question of implementation, or the lack thereof, is one of the defining features of the third phase (1998 - 2001).

The Third Phase (1998 - 2000): Policy Steering Vacuum

This phase saw a dramatic lull in policy activity at the national level, especially with regard to the development of an implementation plan and strategy that would give effect to the policy framework for the transformation of higher education that was outlined in the White Paper 3. The few exceptions to this general lull were the several amendments (discussed later in this

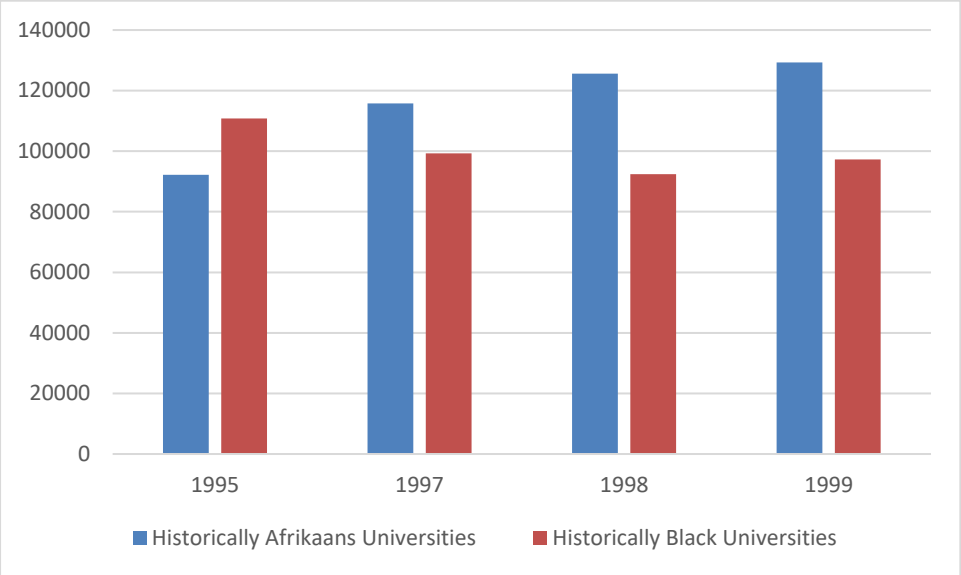
section) that were made to the Higher Education Act whose intended purpose was to address the governance crises that engulfed the sector during this phase, especially at the historically disadvantaged institutions. The lack of policy steering instruments resulted in an implementation vacuum during this phase, which was book-ended by the promulgation of the White Paper 3 in 1997 and the release of the National Plan on Higher Education in 2001, gave rise to unintended and unanticipated consequences with respect to the transformation trajectory of the higher education sector.

Many of the rapid but unregulated changes in the higher education sector that occurred during this phase were fuelled by institutional uncertainty regarding the future direction of the government's reform programme, while others were driven by opportunism in the absence of robust regulatory oversight from the state. One of the key consequences of the absence of policy steering during this period was the increased marketisation of the higher education sector, which saw the emergence of opportunistic initiatives – sometimes euphemistically referred to as entrepreneurial impulses - at some historically white institutions, in particular the historically Afrikaans universities and technikons (Kulati, 2006). These initiatives saw the proliferation of partnerships between these institutions and private sector providers in the delivery of education programmes, often through distance education provision (Department of Education, 2001). Many of these institutions also increased their (off-campus) sites of provision through the establishment of branch campuses in parts of the country that were not well-catered for by higher education institutions. In its proposals on the reconfiguration of the higher education institutional landscape, the Council on Higher Education reflected on these developments by noting that the 'excessively competitive behaviour and practices' of higher education institutions had the potential to have damaging effects on the system (Council on Higher Education, 2000). The increased competition in the sector was also fuelled by the opening up of the South African higher education market to foreign universities, and the rapid growth of private higher education providers, who often went into partnership with overseas public and private institutions (Subotzky, 2003).

Another area that saw increased competition between higher education institutions during this phase was in student recruitment. Given the newly elected government's pressure on higher education institutions (especially the historically white institutions) to transform their demographic profiles, this phase was marked by fierce competition for fee-paying black students, which resulted in the uncontrolled expansion of enrolments at many of these institutions, especially in financially lucrative undergraduate programmes, for example in business studies and information technology (Kulati, 2006). As Figure 2 below shows, at the same time that some historically advantaged institutions (especially the historically Afrikaans universities) were experiencing increases in their student enrolments, the historically disadvantaged institutions (in particular the historically black universities) saw rapid declines in their student numbers in this phase (Department of Education, 1999). This development gave rise to a market-driven institutional differentiation that exacerbated inequalities between historically black and white institutions, especially given that, at the time, the funding subsidies from government were based on student enrolments (Council on Higher Education, 2004; Kulati, 2006).

A consequence of the flight of students was that many of the historically disadvantaged institutions were in dire financial straits during this phase (Bunting, 2006a). The decline in student enrolments that was experienced by the higher education sector (especially at the HDIs) between 1998 and 2000 was also contrary to the projections that were made in the NCHE report of a dramatic expansion in higher education enrolments. All of these developments demonstrate that the steering vacuum that was a distinct feature of this phase gave rise to an increasingly marketised higher education sector, which, as a consequence, undermined the guiding role of the state in driving systemic transformation.

Figure 2: Student Enrolments at Historically Afrikaans and Historically Black Universities



Source: Department of Education

The flight of black students from the historically disadvantaged to the historically advantaged institutions was, however, not only a consequence of the marketised higher education environment, but was also driven by the governance crises that engulfed many of the historically disadvantaged institutions during this phase. The crises in governance at some of these institutions were so acute that the government has to create a legal instrument, introduced in 1999 through an amendment to the HE Act, that gave powers to the Minister of Education to appoint independent assessors to investigate the causes of the governance crises at the various institutions. In several cases, the submission of an investigative report by an Assessor was soon followed by the appointment of an administrator, who assumed the role of either the chief executive officer of the institution (the vice-chancellor), or its supreme governing body, the Council; in some of the more extreme cases, the administrator assumed both of these roles. Table 1 below shows the historically disadvantaged institutions that experienced serious governance crises during this period, and also highlights instances where the appointment of an assessor was followed by the appointment of an administrator.

Table 1: Higher Education Institutions in Governance Crisis in the Third Phase: 1998 - 2000

Institution	Independent Assessor	Administrator(s)	Year of government intervention
Vaal Triangle Technikon	Prof Jaap Durand	Dr. Theo Shippey (CEO)	1998
University of Transkei	Dr Thembile Skweyiya	Dr. Morley Nkosi, Prof. Nicky Morgan, Dr. Molapo Qhobela (Council & CEO)	1998
University of Fort Hare	Dr Stuart Saunders	No administrator appointed	1999
Mangosuthu Technikon	Prof Jaap Durand	No administrator appointed	1999
University of the North	Prof Thandabantu Nhlapo	Prof. Patrick Fitzgerald (Council & CEO)	2000

Source: Various government gazettes and proclamations

As it was mentioned earlier, government intervention in addressing the governance crises that engulfed the higher education sector was the one area that saw considerable state activity, both in terms of policy development and direct intervention by the state during this phase. As a result of the governance instability that became endemic at some of the institutions during this phase, numerous legislative amendments were made to the Higher Education Act between 1999 and 2001, whose primary purpose was to increase the power of the Minister with respect to institutional governance. The three most significant of the amendments to government legislation are depicted in table below:

Table 2 Higher Education Legislative Amendments during the Third Phase

Legislative Amendment	Objective
Higher Education Amendment Act No.55 of 1999	This amendment inserted a new clause in the primary Higher Education Act of 1997 (Section 41A), which gave the Minister powers to appoint an Administrator at any higher education institution where there was financial or other maladministration that was deemed to be of a serious nature. The original Higher Education Act only made provision for the appointment of an Assessor, and not an Administrator.
Higher Education Amendment Act No.54 of 2000	This amendment provided powers to the Minister to determine the scope and range of operations of an institution, and stipulated that an institution may not, without the approval of Council, and under certain circumstances without the concurrence of the Minister, enter into a loan or overdraft agreement or develop infrastructure. This amendment was triggered by the dire financial situation at many of the historically disadvantaged institutions following the sharp decline in their student enrolments
Higher Education Amendment Act No.23 of 2001	This amendment made provision for the indefinite appointment of the Administrator.

The governance crisis that engulfed the sector during this phase, together with the legislative amendments described above, gave rise to a fraught relationship between the state and higher education during this phase (Council on Higher Education, 2004). In particular, the relationship between the government and the leadership of the historically disadvantaged institutions (HDIs) was strained, to the extent that the Historically Disadvantaged Institutions Vice-Chancellors Forum, which was the organised group that represented the leadership of these institutions, became very critical of government for not addressing the issue of institutional redress, particularly through the revision of the funding formula. On the side of the state, however, there was also frustration at the governance crises at the historically disadvantaged institutions, which were threatening to become an endemic feature of the higher education landscape. For example, at the height of the governance crises at these institutions, the Minister of Education at the time saw many of these institutions as being 'rudderless', arguing that 'some of our vice-chancellors are still using historical disadvantage

as an unconvincing cover for the mess they have caused in their tertiary education institutions'[1]. According to Badat (2009), the fraught relationship between the state and higher education during this phase resulted in the rapture of the fragile consensus that had been formed between the higher education and the state in the second phase (1994-1997).

The Fourth Phase (2001 - 2007): Heightened Implementation and Steering

After the policy lull and implementation inertia of the third phase, the publication of the National Plan for Higher Education (henceforth the National Plan), which was released by the Department of Education in February 2001, signalled the shift to a heightened focus by government on steering the agenda for transformation in higher education. The primary objective of the National Plan was to give effect to the broad higher education policy framework as outlined in the White Paper 3, which would be achieved through a tightening of the regulatory framework that included the reconfiguration of the institutional landscape through a series of mergers, and the introduction of policy implementation instruments in the areas of institutional planning and funding.

The Reconfiguration of the institutional landscape

One of the first steps towards the implementation of the policy objectives of the White Paper 3 were the measures taken by government to reconfigure the institutional landscape through a series of mergers. Towards the latter part of the Third Phase, the Minister of Education requested the Council on Higher Education (CHE) to advise him on the optimal size and shape of a reconfigured higher education system that would meet the high-level human resources needs of the country (Council on Higher Education, 2000). The CHE report, titled: *Towards a new higher education landscape: Meeting the equity, quality and social*

[1] *Business Day*, 12 March 1999

development imperatives of South Africa in the 21st century, was released in June 2000. The key proposal of the report was that the South African higher education institutional landscape system should be reconfigured as a differentiated and diverse system comprising three institutional types with specific institutional mandates and criteria linked to knowledge generation (research) and transmission (teaching).

The three main institutional types that were proposed in the CHE report were the following: the first institutional type, the 'bedrock' institutions, would focus on undergraduate programmes with limited postgraduate programmes (up to coursework master's degree); whatever research that would be undertaken in these institutions would be related to curriculum development, teaching and learning. The second institutional type, 'the comprehensive postgraduate and research institution', would offer undergraduate programmes and a comprehensive range of quality postgraduate programmes – taught and research-based – up to doctoral level, with extensive capabilities in basic, applied, strategic and developmental research across a broad range of areas. The third type of institution, 'the extensive masters and selective doctoral institution', would offer undergraduate programmes and an extensive range of postgraduate programmes up to doctoral level in basic, applied, strategic and developmental research (Council on Higher Education, 2000). Other institutions, such as those dedicated to distance education and private higher education institutions, would also form part of the reconfigured institutional landscape. The CHE proposals generated considerable debate and controversy, with criticism coming especially from the historically black universities, whose main concern was that they would be relegated to bedrock status, thus entrenching past inequalities in the institutional landscape.

The release of the National Plan for Higher Education also signalled the government's response to the CHE proposals. The government reiterated its commitment to a diversified higher education institutional landscape, which would be achieved through mission and programme differentiation based on the type and range of qualifications offered, and also

determined by the location, context and demonstrated capacity and future potential of institutions to conduct high-level research (Ministry of Education, 2001). Further, while the National Plan agreed in principle with the CHE proposal to reduce the number of higher education institutions, it argued that more work needed to be done through feasibility studies of available options at a regional level before the Minister of Education could make a pronouncement on institutional mergers. To this end, in March 2001 the Minister of Education appointed a National Working Group (NWG) to provide him with recommendations on the appropriate arrangements for consolidating the provision of higher education on a regional basis through establishing new institutional and organisational forms, including the feasibility of reducing the number of higher education institutions (Ministry of Education, 2002).

The NWG released its report in February 2001. Based on its analysis of the regional provision of higher education in relation to the principles of promoting quality, sustainability and equity, its key proposal was that the number of publicly funded institutions in the higher education system should be reduced from 36 to 21 through mergers. In December 2002, after having considered the submissions that were received from various stakeholders in the higher education sector and beyond, the Minister announced his decision to reduce the number of higher education institutions – through mergers and incorporations – from 36 to 23. Table 3 below shows the higher education institutional landscape with the new institutional types following the proclamation by the Minister of Education.

Table 3: The New Public Higher Education Institutional Landscape

Institutional type		Institutions
Universities	8 Universities (non-merged)	1. University of Cape Town 2. University of Fort Hare (incorporated East London campus of Rhodes University) 3. University of the Free State (incorporated the campuses of Vista University in Bloemfontein and the University of the North in Qwaqwa) 4. University of Pretoria (incorporated the Mamelodi campus of Vista University) 5. Rhodes University 6. Stellenbosch University 7. University of the Western Cape (incorporated the merger of the Schools of Dentistry from Stellenbosch and UWC) 8. University of the Witwatersrand
	3 merged Universities	9. University of KwaZulu-Natal (merger of University of Durban-Westville and University of Natal) 10. University of Limpopo (merger of University of the North and the Medical University of South Africa)[2] 11. North-West University (merger of Potchefstroom University of Christian National Higher Education and University of the North-West, and the absorption of the staff and students of the Sebokeng campus of Vista University)
Universities of Technology	2 non-merged technikons	12. Central University of Technology (incorporated Welkom campus of Vista University) 13. Vaal University of Technology (took over the infrastructure of the Sebokeng campus of Vista University)
	3 merged technikons	14. Cape Peninsula University of Technology (merger of Cape Technikon and Peninsula Technikon) 15. Durban University of Technology (merger of ML Sultan Technikon and Natal Technikon)[3] 16. Tshwane University of Technology (merger of Technikon North-West, Technikon Northern Gauteng, and Technikon Pretoria)

[2] The University of Limpopo was demerged in 2014, following the recommendations of a task team set up by the Minister of Higher Education and Training, Dr Blade Nzimande. MEDUNSA is now the Sefako Makgatho Health Sciences University.

[3] The precursor to the Durban University of Technology, the Durban Institute of Technology, came about through a voluntary merger between ML Sultan Technikon and Natal Technikon.

Comprehensive Universities	2 non-merged comprehensive universities	17. University of Venda for Science and Technology 18. University of Zululand
	4 merged comprehensive universities	19. University of Johannesburg (merger of Rand Afrikaans University and Technikon Witwatersrand, plus the incorporation of the East Rand and Soweto campuses of Vista University) 20. Nelson Mandela Metropolitan University (merger of University of Port Elizabeth and the Port Elizabeth Technikon) 21. University of South Africa (merger of Technikon South Africa and the University of South Africa, plus the incorporation of the Vista University Distance Education Centre) 22. Walter Sisulu University of Technology (merger of Border Technikon, Eastern Cape Technikon and the University of Transkei)

Source: Council on Higher Education (2004)

An assessment of the efficacy of institutional mergers as a policy intervention needs to take account of the expectations attached to them from the outset. These include the following factors, which were highlighted by the Ministry of Education in the introduction to its institutional restructuring proposals: first, whether the merged institution has resulted in improved quality, sustainability and equity, which were the main principles on which the NWG and Minister's recommendations were based; second, the extent to which the merged institutions have overcome their apartheid legacies and forged new institutional identities and cultures; and third, how the mergers have improved or maximised efficiencies by eliminating duplication and wasteful expenditure (Ministry of Education, 2002).

According to a study that was undertaken in 2012 to assess the extent to which the process of institutional mergers met its desired objectives highlighted some challenges that confronted the merged institutions, for example, in the areas of salary harmonisation, the consolidation of academic programmes and, in the case of the comprehensive universities,

minimising academic drift (Gillard *et al.*, 2012).[4] Notwithstanding the problems it identified, the study found the mergers to have been successful on several fronts: the merged institutions were able to forge of a new institutional identity; the merging of management and organisational structures was a fairly smooth process; and that most of the mergers gave rise to extended academic offerings in the new institution.

In contrast to this generally positive assessment of mergers, Hall (2015) has argued that, overall, the mergers have had little sustained effect on institutional forms and structures (Hall, 2015). Hall points to the failure of the comprehensive university, as a new institutional type, to carve an identity for itself that is distinct from the traditional university. Instead, the comprehensive university demonstrates the resilience of the institutional form that was predominant prior to the merger. For example, Hall (2015) cites the demerger of the University of Limpopo as being indicative of a failure to forge a new educational mission that was distinct from the two merging institutions, namely the Medical University of South Africa (MEDUNSA) and the University of the North. For Hall (2015), the University of Limpopo demerger illustrates the consequences of the failure to address the question of curriculum reform as a central pillar of the 2002 merger plans. While offering different lenses through which to assess the success or failure of mergers, the study by Gillard et al. (2012) and the overview by Hall (2015) have not interrogated mergers in terms of the criteria identified above, which were derived from the stated policy objectives that the intervention sought to achieve. The jury is therefore still out on whether mergers, as a policy instrument, have achieved their objective.

[4] The focus of the study was on the mergers that gave rise to Nelson Mandela Metropolitan University, the University of Johannesburg, and the University of KwaZulu-Natal, as well as the incorporation of the East London campus of Rhodes University into the University of Fort Hare

The Introduction of Funding and Planning as Policy Steering Instruments

The National Plan signalled the beginning of a more state regulated policy environment in higher education, whereby higher education institutions would thenceforth be funded on the basis of their production of three-year 'rolling' plans, which would need to be approved by the Department of Education (Ministry of Education, 2001). In addition to the broader objective of tightening regulatory oversight through the introduction of a culture and discipline of planning in higher education institutions, one of the more immediate goals of the National Plan was to improve efficiencies in the higher education system through the introduction of the following (measurable) goals and objectives: increased graduate outputs at undergraduate level; increased research productivity and post-graduate outputs; and (controversially) reducing the number of higher education institutions through a series of mergers (Ministry of Education, 2001).

Although the White Paper (1997) had already identified planning and funding as key mechanisms in achieving the higher education transformation goals of government, it was not until the release of the National Plan in 2001 that the Department of Education provided more detail with regard to how the planning and funding mechanisms would be operationalised throughout the system. The introduction of planning and funding as steering instruments thus signalled a shift from the more laissez-faire approach to systemic oversight that characterised the third phase (1998-2000), towards a more managed and coordinated system.

The new funding framework, although introduced with the release of the National Plan in 2001, actually came into effect three years later in 2004. It replaced the South African Post-Secondary Education (SAPSE) funding framework that had been operational since 1983. The disbursement of funding allocations to higher education institutions under the SAPSE funding formula was based on student enrolments; in other words, it was an input-based

system. The new funding framework departed from the SAPSE formula in that, instead of the funding of higher education institutions being driven by student enrolments, it would be determined on the basis of a different set of factors, including the following: a) the national planning goals and policy priorities of government, b) the amount of funding available in the national higher education budget, and c) the plans of individual higher education institutions that had been approved by government[5].

In relation to research, the National Plan identified two main challenges facing higher education: the first was the need to sustain the strengths in research productivity that existed at some institutions at the time; this was mainly in reference to the so-called 'Big Five' of historically white universities), namely University of Cape Town, the University of Natal (pre-merger), the University of Pretoria, Stellenbosch University, and the University of the Witwatersrand. The reason the National Plan identified this as a challenge was in response to calls from historically disadvantaged institutions for government to level the playing field in relation to its resourcing strategy, especially as this related to research infrastructure and funding. This contentious issue will be discussed further later in this section. The second challenge was the need to intensify the government's efforts with respect to increasing the overall research output and productivity of the higher education system as a whole. The National Plan highlighted the decline in higher education research output as being of particular concern to government, both in terms of per capita output and with respect to South Africa's declining share of global research output in basic or fundamental research. With regard to the latter, the OECD statistics show that scientific articles per million of the South African population declined from 59.6 in 1993 to 50.4 in 2003 (OECD, 2007).

[5] A New Funding Framework: How Government Grants are Allocated to Public Higher Education Institutions, March 2004, page 2.

In light of these challenges, the new funding framework therefore sought to change the mechanism for funding higher education research, which had previously been based on the so-called 'blind' approach to research funding, whereby the allocation of funding for research was part of the block grant allocation that universities received on the basis of their student enrolments. Once received, these block grants were used at the institutions' own discretion, in many cases for expenditures that were not related to research support and development. This was often the case at most of the historically black universities and the technikons, the majority of whom, at the time, did not have a strong and vibrant research culture and tradition.

For government therefore, the blind approach that was used in funding higher education research was not regarded as an effective instrument for improving research performance and for steering the higher education system towards achieving national development needs. It was for this reason that the National Plan introduced a new research funding formula that allocated research grants on the basis of research publications and postgraduate student outputs. The new formula would decouple the research funding component from the block grant, which had been set at 15% of the total subsidy grant received by institutions on the basis of their student enrolments. Henceforth, the funding for research would be provided on the basis of demonstrable performance in research publications and post-graduate outputs (graduation of research masters and doctoral students).

The new funding model thus disposed of the blanket disbursement of research funds whereby higher education institutions received funding irrespective of demonstrable capacity to conduct research. In this regard, the National Plan noted that despite government efforts since 1994 to develop research capacity at historically black universities and at the technikons, these interventions had not translated into improved research outputs at these institutions (Ministry of Education, 2001). The introduction of the new funding model

therefore shifted the basis for the funding of university research from an input-based to an output-driven formula. This shift in the government subsidy funding for university research foregrounded the direct implications that increased research performance and postgraduate outputs would have for the university's bottom line. It therefore brought to the fore the realisation that the production of knowledge would no longer be an issue of concern only for individual academics (for pursuit of truth, personal prestige and recognition by peers), but would also be an organisational objective that would be under the purview of its managers as it would have implications for the university's ability to earn subsidy income from government.

With regard to planning, the National Plan also signalled a renewed urgency by government to introduce a more coordinated planning regime in higher education. At the national level, this would see the government playing a leading role in setting targets that the higher education sector would need to achieve in fulfilment of the transformation goals of the system. These targets were in areas such as student enrolments (including graduation rates), post graduate student outputs, and improved student and staff equity profiles. At the institutional level, higher education institutions were expected to align their strategies with national goals through the development of three-year rolling plans, which would need to be approved by government (Department of Education, 2001). The institutionalisation of planning as a performance management instrument thus sought to tighten the accountability framework between higher education institutions and government, and to strengthen the role of university management in strategic organisational decision making. The new planning framework came into effect in 2005.

The introduction of an output-based research funding formula at the national level, and the tightening of the accountability regime through the introduction of a new planning framework offered a clear indication of an emergent new public management agenda in the higher education policy framework. The emergence of the new public management in the context

of higher education is discussed further in the next chapter. The new public management agenda inherent in the National Plan signalled the shift to a more managed university environment in which the management of research performance and planning were seen as strategic organisational objectives that required the scrutiny and oversight of university managers. This study seeks to interrogate the extent to which the introduction of a tightened regulatory framework by government through policy instruments such as the new funding and planning models that were introduced by the National Plan gave impetus to the drive for universities to become strategic actors. The concept of the university as a strategic actor underlies the theoretical framework adopted in this study, which is also discussed further in the next chapter.

Notwithstanding the signals of a shift towards the managed university, however, the National Plan also reveals an ideological ambivalence on the part of government about some of the implications of the new public management agenda for the government's broader transformation objectives. An illustration of this ambivalence is that, on the one hand, the National Plan was critical of the inefficiencies in research production, where a handful of universities accounted for the majority of research publications and postgraduate outputs in the system. For example, in 2003 the five universities already referred to as the 'Big Five' produced 63% of the system's entire research output, and also accounted for 70% of all graduates at the (research) masters and doctoral levels, out of a total of 36 higher education institutions in the system at the time.[6]

However, while acknowledging that an appropriate response to addressing these inefficiencies in research production would be to channel resources to those universities that have the demonstrable research capacity, the National Plan also recognised that such an

[6] This calculation was arrived at from data provided to the author by the Department of Higher Education and Training.

approach (of a performance-driven research funding framework) would result in the already better-resourced historically white universities increasing their monopoly over the higher education research enterprise, thereby leading to an outcome that would 'legitimise and institutionalise the inherited apartheid legacy' (Department of Education, 2001: 64). It was in recognition of this tension between redress and development that the National Plan adopted a dual strategy that, on the one hand, sought to address the stagnation in research productivity in the system by introducing a performance-driven research funding model while, on the other hand, building research capacity (in targeted programmes or fields) in those historically disadvantaged institutions that had shown potential to undertake high-level research (Department of Education, 2001).

The Department of Education's seemingly cautious stance towards adopting a narrowly driven by the new public management must also be understood against the backdrop of the existence of a strong lobby at the time — both within the majority party in government and among the historically disadvantaged institutions — for the levelling of the playing field in relation to the redress of institutional inequalities in the higher education system (Badat *et al.*, 1994). This lobby's position was that a key challenge for higher education transformation was the redress of historical imbalances through the provision resources to the historically black institutions. The provision of these resources would then enable these institutions to catch up to the historically white institutions, which had long enjoyed the privileges provided by the apartheid policies of separate (and unequal) development. Redressing these institutional inequalities would encompass, among other things, the development of research capacity at the historically black institutions. It was partly in response to the demands for institutional redress that the National Research Foundation (NRF) established the Institutional Research Development Programme (IRDP) in 2004, whose objective was to help develop research capacity at the historically black institutions.

An opposing viewpoint to this position was that the majority of historically black universities, especially those that were established as part of the homeland system, were never created by the apartheid government to be research institutions in the first place. As a result the idea of the university as an intellectual and cultural institution one of whose central missions was the production of new knowledge, never took root in these universities. Consequently, this viewpoint argued, the strategy of trying to create the required capacity in terms of physical and human capital investment (in many cases from scratch), so that these institutions could become research universities was one the country could ill-afford, given the scarcity of resources. What the government ought to do, so the argument went, was to provide resources to those universities that already had a track record of excellence in research, while ensuring that black students and academics were able to access, and benefit from, these targeted investments in resources and research excellence.[7]

A final example of the ambivalence of government towards the new public management is demonstrated by its response to the worrying developments in the higher education system that emerged in the third phase (1998 – 2000), which saw uncontrolled student enrolment growth at historically white institutions, while the historically disadvantaged institutions experienced sharp declines in their enrolments. On the one hand, the National Plan was at pains in stressing that government was not necessarily against the emergence of a 'marketised' higher education environment, acknowledged that the introduction of a competitive environment with respect to higher education student recruitment could be an antidote to institutional inefficiency and ineffectiveness (Department of Education, 2001). On the other hand, however, the National Plan argued that government had to ensure that the emergence of a market in higher education - a key feature of the new public management - operated within the confines of a regulated framework and did not exacerbate institutional

[7] The key tenets of this argument were advanced in Jonathan Jansen's unpublished essay (dated 2002) 'The case for closing down historically black universities'.

inequalities by benefitting the historically white institutions at the expense of the historically black institutions (Department of Education, 2001). This illustrates the policy dilemma that faced the government in trying to balance the need for promoting a competitive higher education environment (through the nascent new public management agenda undergirding the National Plan) while, at the same time, being sensitive to the political imperative of redressing apartheid inequities.

The next section will discuss in more detail some of the changes in the national research landscape that had an impact on strategic management of research in higher education institutions.

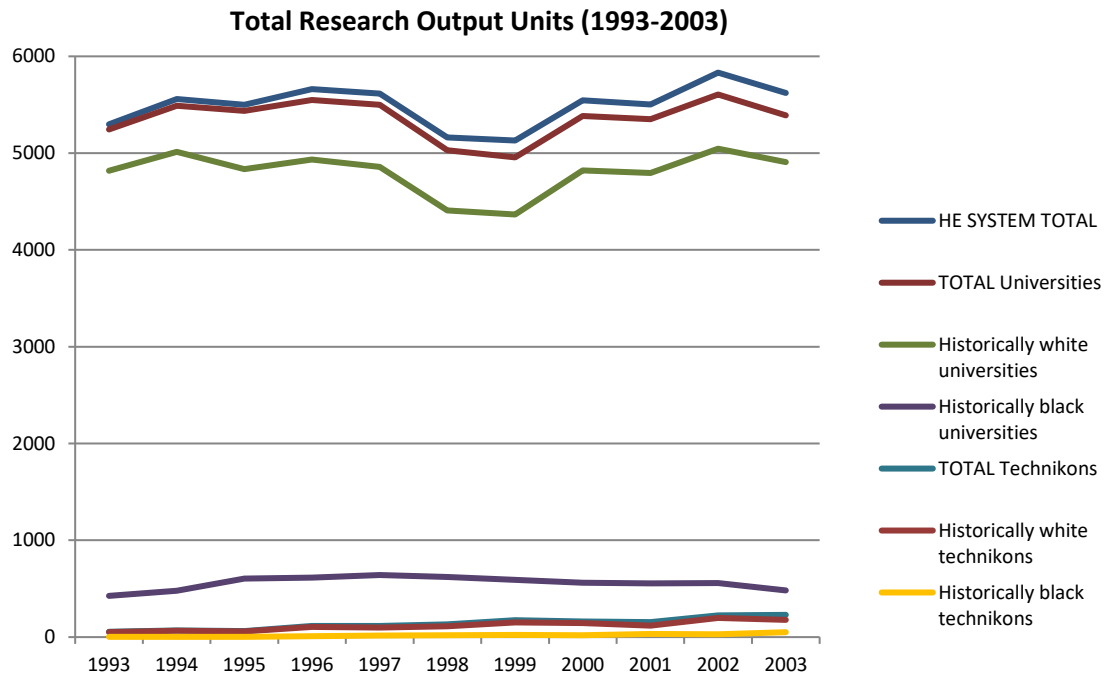
The Higher Education Research Landscape

This section continues in the vein of the previous discussion in providing an overview of the key elements of the national policy landscape, with the focus shifting from the higher education legislative framework to profiling the national research landscape. The purpose of this section is to discuss those elements of the external policy environment of universities that sought to influence and steer the research agenda of the higher education system, in particular the government's National Research and Development Strategy, which was released in 2002, and the initiatives and programmes from the NRF that gave effect to the government's R&D Strategy.

As already discussed in the previous section, one of the key concerns of government as highlighted in the National Plan was the decline in the per capita higher education research output, which also translated into a decline of South Africa's share of global research output in basic or fundamental research. The chart below (Figure 3) shows the total research output of South African higher education institutions over the ten-year period: 1993 to 2003. The data used in the chart is based on the government subsidy-generating research output

units (mostly publications in refereed journals and books) of the universities and technikons (as universities of technology were referred to during this period). The ten-year period (1993-2003) that is depicted in this graph does not correspond to the period under investigation in this study, namely 1997-2007, and this is because 2003 is the year in which the institutional mergers proposed in the National Plan came into effect. And given that some of the merging institutions were across the historical apartheid divide of historically black and white institutions (including one of the cases used in this study), it is not possible to plot on the same chart the research output figures on the basis of the historical (dis)advantage of institutions as the government did not provide that information from 2004 onwards. Notwithstanding this limitation, the general trends depicted remained the same for the period that is relevant for this study, and three clear patterns are of relevance to this study.

Figure 3: Research Output at South African higher education institutions



Source: HEMIS database, Department of Education[8]

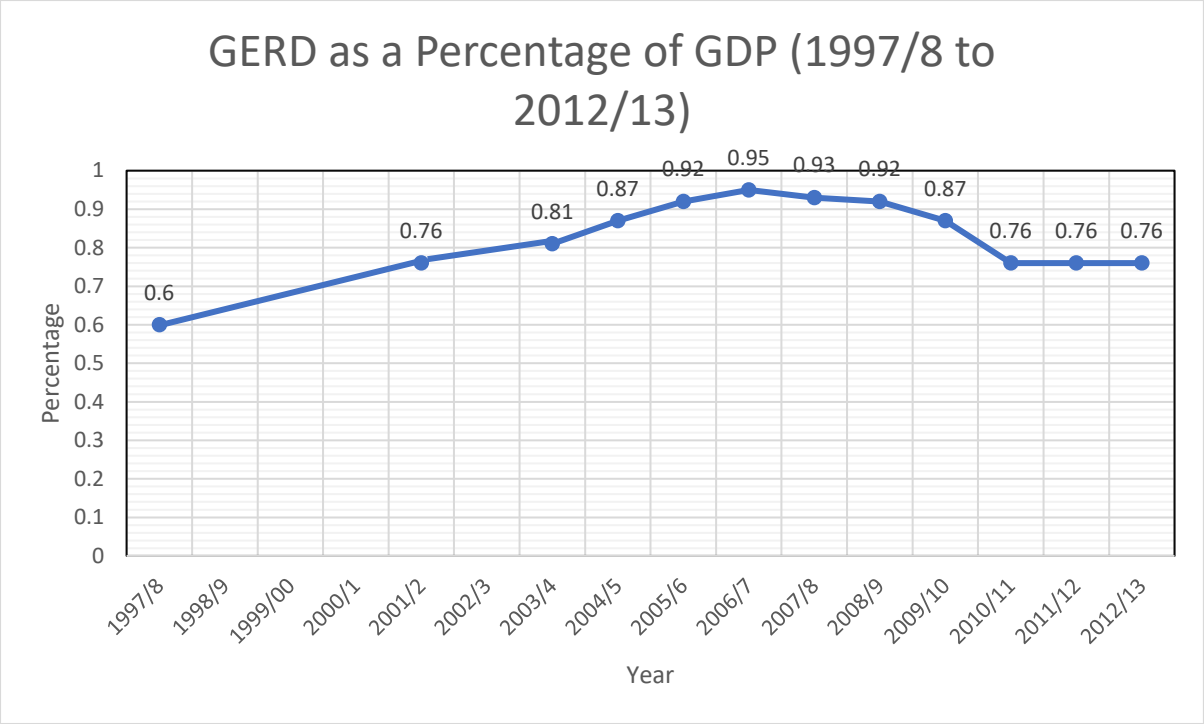
The first discernible trend over the ten-year period that is depicted in the graph is that the overall research output in the system was fairly stagnant. The second observation relates to the significant gap in research output between the university and the technikon sectors. The low research output of the technikons relative to the university sector was because, in terms of their mandate, the technikons focused largely on undergraduate education and training, and provided applied research in limited fields at the post-graduate level. In 2003, technikons were designated as universities of technology. The third observation to make is that, as a group, the historically black universities had a far lower research output profile, which was closer to the technikon sector, than the historically white universities. The two exceptions among the historically black universities were the University of Durban-Westville

[8] HEMIS is the higher education management information system.

and the University of the Western Cape, which together produced close to 45% of the entire research output of these universities (Bawa and Mouton, 2006).

An important milestone in the evolution of South Africa's post-apartheid research landscape was the release of the government's Research and Development Strategy (henceforth R&D Strategy) in 2002 (Government of Republic of South Africa, 2002). The point of departure of the R&D Strategy was that one of the weaknesses facing the South African research system was the low public expenditure on research and development. For example, in 2002, South Africa spent just over 0.72% of its gross domestic product (GDP) on research and development (R&D) expenditure, which was a slight increase on the 0.6% of GDP that was spent five years earlier, in 1997. This indicator, referred to as the Gross Expenditure on Research and Development (GERD), would rise steadily until 2007 (the end of the ten-year period that is the focus of our study), at which point GERD reached 0.93% of GDP (Department of Science and Technology, 2021). As the chart below (Figure 4) clearly shows, while South Africa experienced a steady increase in GERD over the 10-year period (1997 – 2007), it never achieved the target of 1% that was set in the government's R&D Strategy in 2002. Indeed, GERD reached its peak in the 2006/7 financial year, when it was 0.95 (Department of Science and Technology, 2015).

Figure 4: Gross Expenditure in Research and Development (GERD) as a percentage of the Gross Domestic Product (GDP), 1997/8 to 202/13



Source: National Survey of Research and Experimental Development, 2012/13 (DST, 2015)

Following the release of the R&D Strategy in 2002, the government sought to increase its investment in research and development in the higher education sector. This was undertaken through the introduction of a number of initiatives that were managed by the NRF, which is the statutory agency that oversees the public research enterprise in South Africa, and falls under the Department of Science and Technology.[9] The two major initiatives that will be discussed are the DST/NRF Centres of Excellence programme, and the South African Research Chairs Initiative (SARChI). Together, these programmes constituted a significant intervention with regard to the development of research capacity at higher education institutions, and also marked the emergence of a strong steering approach with respect to setting the research agenda in the higher education system. These initiatives also

[9] This department has since been renamed as the Department of Science and Innovation, and falls under the Ministry of Higher Education, Training, and Innovation.

account for a significant injection of 'new money' into the higher education research landscape by government (Government of Republic of South Africa, 2002).

The DST/NRF Centres of Excellence Initiative

The DST/NRF Centres of Excellence (CoE) programme was launched in 2004 to accelerate the development of appropriate human resources and knowledge capacity in the broad field of science, technology and innovation, especially in areas of 'strategic national importance' to South Africa (National Research Foundation, 2003). The government's National R&D Strategy identified the following as areas of strategic national importance that would be targeted for investment: science and technology for poverty reduction; new technology platforms (ICT and biotechnology); technology for advanced manufacturing (in the automotive, chemical, and pharmaceutical industries); and technology for resource-based industries (namely in agriculture, fishing and forestry, energy, mining, and minerals). Over the years, these areas of national strategic priority have been revised and updated and, as a result, the Centres of Excellence programme has been expanded to incorporate new areas of focus, including those in the social sciences (the first seven CoEs to be established were in the natural sciences). Some of the reasons that were advanced by government for establishing the CoE programme were the following (National Research Foundation, 2003):

- to facilitate research concentration and collaboration by bringing together excellent research efforts into larger research programmes (in other words, to create national networks of research excellence);
- to reward, retain and promote research excellence within the university system;
- to promote the production of new knowledge and the development of human capacity in areas of strategic national importance;
- to advance interdisciplinary research

The establishment of the DST/NRF Centres of Excellence programme commenced with a highly competitive bidding process, especially among the research-intensive universities, as they sought to outbid each other in order to host these well-funded and prestigious research centres. The CoE model is based on a 'hub and spokes' model, where the hub is the hosting university and the spokes are the collaborating research groups that are based at other local or international universities, or located within the science councils (National Research Foundation, 2003). In a few cases, two or more universities co-host a CoE. The CoE programme commenced in 2004 with the establishment of seven Centres of Excellence. Five historically white universities shared the seven CoEs that were initially established, none of which were in the social sciences and humanities.[10] Since then, three additional CoEs were established between 2009 and 2013, with a further five in 2014. The current (in 2022) total number of CoEs is fifteen, of which three are in the social sciences or in interdisciplinary fields that incorporate the social sciences (for example food security), with the rest in the natural and physical sciences. Only one of these CoEs is hosted by a historically black university.

The majority of the funding for the Centres of Excellence programme is provided by the Department of Science and Innovation (via the NRF), with the hosting university having to contribute approximately 10% to the centre's overall budget (National Research Foundation, 2003). The relatively small contribution of the hosting university to the financial sustainability of a Centre of Excellence, together with the manner in which these centres are organised and managed, has resulted in them operating fairly independently of the hosting university's governance and accountability framework. The director of each Centre of Excellence takes responsibility for academic leadership and reports to the deputy vice-chancellor responsible for research at the hosting institution (or a designated person such as the Dean of Research)

[10] The first seven Centres of Excellence were the following: Invasion Biology (Stellenbosch); Biomedical TB Research (Wits and Stellenbosch); Strong Materials (Wits); Birds as Keys to Biodiversity Conservation (UCT); Catalysis (UCT), Tree Health Biotechnology (Pretoria); Epidemiological Modelling and Analysis (UKZN)

The guidance over the strategic direction of these centres is provided by their boards, which consist of members from the host university, representatives from the other universities that are collaborating partners, and also additional members from the centres' strategic partners, which may include representatives from the NRF and DST (National Research Foundation, 2003). As a consequence of their funding and governance arrangements, the hosting universities have minimal managerial oversight or influence over the strategic direction or research agenda of these centres.

The South African Research Chairs Initiative (SARChI)

The second initiative that emerged as a strategic intervention following the release of the government's R&D Strategy is the South African Research Chairs Initiative (SARChI), which was launched in 2006. While the main objective of the Centres of Excellence programme is to foster research excellence by concentrating research in larger collaborative research groups, the purpose of the SARChI initiative is to enhance scientific research capacity by recruiting and retaining excellent researchers and scientists through the establishment of well-funded research chairs at South African higher education institutions, at the research councils, and at national research facilities. Unlike in the Centre of Excellence programme, there is no investment in infrastructure in the SARChI programme. The first twenty-one research chairs were awarded in 2006, and by the end of 2018 (the latest available data), this programme had grown to approximately two hundred research chairs in diverse disciplines across the natural sciences, engineering, humanities and social sciences[11].

The preceding discussion has provided an overview of the South African legislative framework and the key policy initiatives that have had considerable influence in shaping the national higher education research landscape. While the reform strategies contained in the

[11] See https://www.nrf.ac.za/core-mandate-business-divisions/risa-directorates/research-chairs-and-centres-of-excellence-rcce/south-african-research-chairs-initiative/ (accessed on 18 October 2022)

National Plan sought to promote the performance, efficiency and effectiveness of higher education institutions in relation to their planning capacity and research enterprise, they were also, understandably, tempered by the realism that in implementing policies that were inspired by the new public management agenda, there was the danger (and political minefield) that these policy interventions (especially those arising from the new funding and planning frameworks) might, simultaneously, accentuate the inequities between the historically black and white higher education institutions. Of pertinence to the main objective of this study is the extent to which the responses of higher education institutions to the governmental initiatives have strengthened the oversight of executives over the university research enterprise.

Further, the implications of the government's R&D Strategy raise some pertinent questions for the strategic management of research at universities. Given the state's strategy of targeting its funding for university research in areas of strategic national importance, and committing large investments in these programmes, one of the questions that will be examined in this study is whether universities have shifted their research priorities and (strategic) investments in research in order to be aligned with those of government.

Chapter 3: Universities as Organisations and Strategic Actorhood: Conceptual and Theoretical Considerations

Introduction

The objective of this chapter is to provide an overview and analysis of the literature that provides the conceptual tools and theoretical frameworks that will help us interrogate and understand the changing nature of strategic research management in universities. This task will be undertaken by examining four distinct, but related, strands of the literature. The first discussion is an overview of the (admittedly limited) literature on research management in universities, focusing on some of the perspectives that have been offered regarding the role and function of research management in universities, and also highlighting the internal and external factors that have given rise to shifting approaches to university research management.

The second discussion in this chapter provides an overview of the key conceptual models that seek to explain how universities are organised and function as organisations. The discussion interrogates how these models conceptualise and explain the nature of university governance and management, especially with regard to the dynamics of power and influence in organisational decision-making in universities.

The third part of the chapter reviews the literature on the changing nature of the external environment of universities, in particular the emergence of the new public management as a key (external) driver influencing the changes to the governance and management of the modern university. Much of this literature is focused on developments in western economies, especially of those countries within the OECD that have been in the forefront of the emergence of the new public management. The discussion examines how the advent of

the new public management has had an impact on higher education policy reform initiatives in general, and university governance in particular.

Furthermore, there are two other reasons why there is emphasis on the literature from the Global North in this chapter, even though there is critical engagement with it. The first is that two of the cases in the study, namely the Classical-Elite University and the Niche-Occupying University, based the reorganisation of their strategic research management frameworks on models borrowed from Australia in the case of the former, and the Netherlands with respect to the latter university. This shaped both institutions' approach to the organisation and management of research at the strategic level, hence I had to engage with some of the literature that comments on developments in these countries in order to explain the underlying rationale for these changes.

Second, although the dynamic of the challenges faced by the post-colonial universities on the continent may have some relevance for South Africa, my focus in the thesis was specific in that I was setting the challenges faced by universities against the backdrop of the transformation agenda of the post-apartheid state. Except for the publications from the Association of Commonwealth Universities, which I have cited in this chapter, I have not been able to find literature from the African continent, the Asian sub-continent, or from Latin America that is exploring the changing nature of universities as organisations in the post colony.

The closing section of this chapter discusses the two theoretical perspectives, namely the contingency and strategic choice theories, which provide useful conceptual tools in understanding how universities seek to adapt to changes and pressures emanating from their external environments.

Research Management in Universities

Clearly the government, through its legislative framework as set out in the White Paper for Higher Education Transformation (Department of Education, 1997), and in its policy pronouncements such as these are contained in the National Research and Development Strategy (Government of Republic of South Africa, 2002), signalled the centrality of the contribution of higher education research to the national development goals of the country. For universities, the end of apartheid signalled the end of the academic boycott and the isolation of South African universities from the global research community. Together, these developments propelled the research enterprise of universities to the centre of the strategic agenda of universities, or at least those that sought to become research intensive. These developments in the external environment of universities, especially those emanating from the legislative and policy frameworks of the newly elected democratic government, were the subject of discussion of the previous chapter.

Forms of Research Management

The concept of research management is generally used to denote the provision of resources and support services (including the development of institutional policies, procedures, and support systems) by research-performing organisations such as universities for the benefit of research performers in order to ensure that the research enterprise of the organisation produces high quality research outputs (Harman, 1995; Taylor, 2006; Kirkland, 2008). This form of research management should not, however, be confused with another type of research management that is found at the level of research-performing groups and entities in organisations such as universities, namely the expert guidance, leadership and research support that is usually provided by principal investigators within research projects. This type of research management is a form of project management of the process of knowledge production at the research-performer level, which I distinguish from research management

that is strategic in nature, and whose focal point is on decision-making processes that have implications for the university organisation as a whole. In this regard, the study does not focus on the internal dynamics of research groups, for example on the role that graduate students to research group or entity performance, as this lies beyond the scope of the study. The study has limited itself to the dynamic interplay between the research unit (as an intra-organisational entity) and the university as an organisation, especially where the university's strategic goals, as outlined in its mission and policy documents, have impacted on the research agenda at the level of the research performers.

Historically, the role and function of research management in universities has largely been confined to the provision of administrative services and interventions that support the work being carried out by the academic experts or researchers. I regard this as the traditional, or facilitatory, approach to university research management, whose focus is on the provision of an array of support services to the research performers, such as the administration of research grants and contracts, the provision of support with regard to research proposal writing, the support and development of young or emerging researchers, the administration and management of research infrastructure or facilities, and the external liaison with donors of research (Baker and Wohlpart, 1998; Drummond, 2003).

Much of the literature on university research management reflects this traditional approach to research management, and draws largely from the experiences and insights of a well-established community of professional research management practitioners, the majority of whom are based at US universities. The two main outlets for this literature are the *Journal of Research Administration*, which is published by the Society for Research Administrators (SRA), and the *Research Management Review*, a journal of the National Council of University Research Administrators (NACURA). Both of these professional associations focus on the needs and challenges of research management practitioners that are based at US universities. I would argue that the subject matter of these journals is research

administration, rather than research *management,* because its emphasis is on the 'how to' or best practice aspects of research support and service provision, rather than the more strategic function of research management, which is the focus of this study. It is also worth mentioning that, outside of the US, the literature on research management is sparse, primarily because in many countries, particularly the Global South, the field is in its infancy, especially as an area of specialised professional practice, (Kirkland, 2008).

As a result of its practitioner-driven focus and its preoccupation with the administrative rather than the strategic aspects of research management, much of this literature seldom locates the challenges of research management within the context of the nature of universities as organisations, or in the context of broader developments in higher education policy and governance. More specifically, there is little engagement with how the external environment of universities impacts or affects the internal dynamics of higher education management and governance, and in particular how the strategic management of research in universities is changing as these organisations are confronted not only with external challenges, but with the internal organisational dynamics largely driven by the changing nature of knowledge production.

Effects of Changing Nature of Knowledge Production on Research Management

The changing nature of research or knowledge production within universities (and elsewhere) — variously referred to as Mode 2 (Gibbons *et al.*, 1994), Entrepreneurial Science (Etzkowitz and Webster, 1998), or Strategic Science (Rip, 2000) — has challenged the traditional way of organising and managing research, which is not well-suited to a dynamic and ever-changing environment that has become 'increasingly wicked' (Jacob and Hellström, 2000). One of the key features of Mode 2/Entrepreneurial Science/Strategic Science is its orientation towards problem-solving research that is undertaken by multidisciplinary networks working in multiple sites, and giving rise to new knowledge fields

and specialities. For Gibbons *et al* (1994), the shift to Mode-2 knowledge production has had serious implications for universities because the increasing permeability of disciplinary boundaries has undermined the bureaucratic and centralising tendencies of the traditional university management approach. As a result, the traditional approach to research management has become too rigid and top-down an organisational arrangement, with flexibility and rapid adaptation to changing environmental conditions being seen as critical elements to institutional survival and success, (Jacob and Hellström, 2003).

Given these changes to the nature of the production of new knowledge in universities and elsewhere, the challenges facing universities are not only about devising innovative approaches to managing researchers that are spread-out over various sites, but are also (and probably more importantly) about brokering relationships between the different actors in the knowledge generation process, namely university-based researchers, innovators in small start-ups, community development practitioners, venture capitalists, public servants, R&D managers located in industry, etc. (Gibbons *et al.,* 1994). In other words, the challenge for universities is to create a framework for the management of flux rather than just the administration of research.

Changing Nature of University Research Management

There have been a few empirical studies that have sought to locate the changing nature of research management (especially in publicly funded higher education systems) within the broader context of the governance and funding of higher education. One such study addresses the changing nature of research management in higher education institutions in eight countries (Connell, 2005). The cases in this study are from universities in Australia, Belgium, Brazil, Germany, Ireland, Malaysia, Portugal and Turkey. The study highlights three factors in the external environment of universities that have brought about changes to the way that research is managed in universities. The first is the increasing significance of

research in knowledge-driven societies, which has seen governments playing a greater role in shaping research policy. The second driver, which applies primarily to higher education systems in continental Europe, is the shift from state-controlled to state-supervised governmental steering models (Neave and van Vught, 1991). This has resulted in universities having greater autonomy, but whose trade-off has been the introduction of more stringent accountability measures by governments, signalling the emergence of the 'Evaluative State' (Neave, 1988). The third impetus for changes in university research management is linked to the second, in that the increased focus on accountability has given rise to the introduction of performance-driven funding for publicly funded research in many of these countries. A fourth factor that has contributed to the changes in the approach to research management in universities is related to the changes in the nature of the production of new knowledge that has already been discussed, in particular the increasing role of external donors in the funding of university research. The Association of Commonwealth Universities (ACU), citing the experience of UK universities, has noted that the increase in project-based research has changed the relationship between researchers in universities and external funders, so that, inevitably, the central university administration has become involved in the management of these grants because many companies in the UK insist on conducting their dealings with university researchers through central offices of research administration (Association of Commonwealth Universities, 2001).

Another central theme that emerges from the Connell study is that the changes in the external environment of universities have given rise to a more deliberate approach to research management (Connell, 2005). In particular, the study highlights some of the key developments with regard to the increasing role played by university administrators in strategic research management. The first development is the introduction of performance-based research funding policies by governments (especially in OECD countries), which has resulted in increased pressure on higher education institutions to prioritise areas of research focus and support, sometimes referred to as research priority setting or research selectivity.

This has led to the emergence of research strategic planning and management as an institution-wide management function that seeks to set the research agenda and the establishment of research priorities for the university, and has given prominence to the role of strategic research management, especially in those universities that seek to enhance their status as research intensive universities. In some higher education institutions, including those in South Africa, the emergence of an institution-wide (or strategic) research management function has been formalised through the establishment of centralised portfolios for research management, often located in the office of the Deputy Vice-Chancellor responsible for research.

Another study worth mentioning examined the changing nature of research management at selected universities in Commonwealth countries (Association of Commonwealth Universities, 2001, 2002). This study was conducted through a survey that reviewed research management procedures and practices at these universities, some of whom are based in developing countries in Africa, India, and the Caribbean. One of the study's findings is that many universities in the Commonwealth have become more reliant on external donors for research funding, following the decline in public funding in many of these countries. The resultant increase in competition for both publicly and privately sponsored research has pushed many universities to prioritise and concentrate their research efforts in fewer areas, a phenomenon that has given rise to an increased role for university administrators in the strategic management of research.

Furthermore, the Association of Commonwealth Universities (ACU) study found that the shift to Mode 2 research production, in which university academics have become involved in more large-scale, collaborative, multi-institutional and also transnational research projects, has given rise to highly complex research contract agreements (Association of Commonwealth Universities, 2001). These complex funding agreements have generally shifted the liability and other contractual obligations from individual researchers to

universities as corporate or strategic actors, the consequence of which has been the emergence of centralised portfolios responsible for institution-wide research management.

The findings from both these studies (Connell and ACU) suggest that changes in their external environments have led to shifts in the management of the research enterprise in universities. In particular, the studies show that the role of research management has been changing from one whose focus was primarily to provide administrative or operational support and services to the university's researchers – in other words, the facilitatory approach to research management - to one that is more strategic and directive, or deliberative in intent. A concomitant finding is the increasing role played by university administrators in research management at the strategic level of the university (Connell, 2005).

One of the objectives of this study then is to subject some of the insights that have emerged from the studies cited above to further scrutiny. In particular, this study will interrogate the strategies that South African universities have developed in responding to the pressures from their external environments, and how these strategies have, in turn, shaped or influenced the extent to which universities as organisations have become strategic actors.

Conceptual Models of University Organisation

Notwithstanding their varied histories and socio-cultural contexts, universities generally share a core of common roles, functions, and organisational features that have come to be associated with what it means 'being a university' (Barnett, 2010). The most prominent of these roles, also referred to as the central mission of the university, is the pursuit of scholarship, be it the discovery (research), transmission (teaching), integration, or the application of knowledge (Boyer, 1992). Obviously, the mission and mandate of the university has evolved over time to encompass other purposes beyond the pursuit of

scholarship in its various forms, and these include roles such as civic engagement or community responsiveness, and also contributing to economic and social development. The third mission of the university has also come to emphasise the interdependence that exists between universities and their environments, through the partnerships they forge with local communities, governments and the private sector.

Universities are also characterised by a history of shared norms and ideals, which primarily relate to values and principles such as academic freedom and professional autonomy. In the course of carrying out these various roles and mandates, universities have developed common features that have enabled scholars to develop models that describe how universities are organised and function as organisations, features that distinguish universities from other kinds of organisations, for example hospitals or industrial firms.

This section discusses a selection of the conceptual models of university organisation that are most relevant for this study, and highlights some of the more important and contentious elements in these models. These models offer different perspectives of the internal workings of universities as organisations. In the sociology of organisations, models are often used as heuristic devices to simplify and explain the complex dynamics of organisational design and behaviour (Chaffee, 1987; Morgan, 1997). Although these models could be regarded as presenting conflicting views of higher education organisational reality, their conceptual import is in accentuating those aspects of university organisation and functioning they regard as important (while downplaying others), depending on the dynamics of university functioning and organisation the model seeks to emphasise. Indeed, some authors have argued that these models can co-exist simultaneously within a single institution (McNay, 1995; Scott, 2001). In addition, there are always limitations to the utilisation of models in research, one of which is that models apply to particular eras, periods, and are context-bound. The models should therefore be seen as offering a partial, rather than a complete, view of the organisation and functioning of universities. For the purpose of this study, I shall limit the

discussion to those models that focus, often through the use of metaphor, on how universities are structured, governed, and function, and in particular how decisions are made and who wields power in organisational decision-making processes (Baldridge, 1983; Walford, 1987; Bensimon, Neumman and Birnbaum, 1989; Birnbaum, 1989; Miller, 1995; Bargh, Scott and Smith, 1996).

The University as a Collegium

The dictionary definition of a collegium is a group, council, or collective whose members, having equal power and authority, pursue shared goals while working within a framework of mutual trust and respect.[12] The collegium model thus portrays the university as a community of scholars who work co-operatively within a system of decentralised, and self-governing, academic units (Clark, 1995). Further, given the highly specialised knowledge and expertise that they possess, these highly trained scholars and academic professionals enjoy considerable authority with respect to their work, especially in terms of what they teach, to whom, and how. The concept of a collegium or community of scholars also carries other connotations: of academic freedom that is exercised within the context of consensual decision-making; of the collaborative nature of the scientific (and particularly research) enterprise; of a self-regulating community whose internal hierarchy is based on academic seniority and expertise; and of a 'common heritage of shared ideals' (Middlehurst, 1993).

The collegium model of the university, whose lineage can be traced to the emergence of the classical or medieval university in the late Middle Ages, has indeed endured. Notwithstanding its long and proud heritage however, the model has been criticised for being conceptually naive in that it underplays the internal conflicts and competing interests that are a common feature of the university (Baldridge, 1983; Bargh, Scott and Smith, 1996).

[12] See www.thefreedictionary.com

Further, while the model puts emphasis on the enduring ethos of the university as a community of scholars, and whose shared value framework underpins the academic authority structure of the organisation, it nonetheless underplays the essentially bureaucratic nature of the university (Mintzberg, 1983). In this regard, the model underestimates the role that hierarchy and rank play within the university, especially with regard to the power and influence that those with (administrative and managerial) authority wield in relation to organisational decision making. The next model takes as its starting point the bureaucratic character of the university.

The University as a Professional Bureaucracy

The model of the university as a professional bureaucracy has its roots in the work of Max Weber, and has also been referred to as the 'machine-model' of organisation (Morgan, 1997). Weber has described bureaucracies as networks of social groups that are dedicated to the attainment of specified goals, and are structured so that they maximise efficiency (Weber, 1964). Given the central role that structure, hierarchy (or rank), and professional authority play in university governance and management, scholars such as Mintzberg and Stroup regard the bureaucratic model as the one that best captures how the university is organised and functions as an organisation (Stroup, 1966; Mintzberg, 1983). Stroup also identifies other features of the university that are consistent with Weber's conception of the professional bureaucracy: competence is the main criterion for appointments and promotion; hierarchy and rank are recognised and respected; formal rules and regulations govern how work is organised; job security (in the academic, rather than the administrative, domain of the organisation) is guaranteed through the tenure system in the US higher education context (Stroup, 1966).

Mintzberg regards the university as being an essentially bureaucratic organisation because one of its key features is the standardisation of work and behaviour (Mintzberg, 1983).

According to Mintzberg, this standardisation of work and behaviour is achieved through an academic training and qualification regime that serves as a form of a doctrinal apprenticeship system into the ethos and value framework of the academy and its disciplines (Mintzberg, 1983). A further bureaucratic character of the university is the authority structure that is based on rank and seniority, which is a feature of both its academic and administrative domains.

Critics of the bureaucratic model fault it for placing considerable emphasis on the command-and-control dynamics of the organisation, a feature that is often associated with unitary forms of bureaucratic organisation such as would be found in the armed forces, rather than the university. For Clark, the university functions more like a conglomerate than a bureaucracy, because the distribution of authority within the organisation is more diffuse, rather than being exercised in a linear and top-down fashion (Clark, 1995). The model has also been criticised for placing much of its focus on the formal organisational structure of the university as the basis and source of the exercise of power and authority within the organisation, thereby missing out on the informal, and often invisible, dynamics of power and influence that often occur through the intricate and complex web of stakeholder politics, interests, and influence that pervade organisations such as universities (Baldridge, 1983). The next model places power and conflict at the centre of the dynamics of university governance and management.

The University as a Political System

The political model regards the dynamic interplay between power and conflict as the distinguishing feature of university governance. Universities are regarded as functioning like microcosms of political systems that have to contend with power struggles between stakeholder groups and coalitions (Baldridge, 1983). In this model, university decision-making processes are characterised by internecine conflict between various interest groups

that vie for power and influence in the organisation. In this regard, this model has considerable resonance with the South African context during the period under review (1997-2007), a period that saw many universities being mired in governance and management crises, many of which were rooted in power struggles between contending stakeholder groups (Kulati, 2003).

According to Baldridge (1983), most academics would rather focus on their teaching and research responsibilities, rather than spend time on policy and decision-making processes, which they regard as an uninteresting and unrewarding experience. This general apathy and indifference from academics towards engaging in university governance and management processes, which has seen many an academic not taking an active interest in deliberations and forums that relate to organisational policymaking, has allowed managers and administrators to take control of key decision-making processes in universities. Academics only become energised about organisational processes when issues that directly affect them emerge, or when they perceive their interests to be under threat (Baldridge, 1983).

Although the political model has its merits in that it provides an insight into the highly contested nature of university governance and management, it has been criticised for not interrogating the basis of the power blocs and stakeholder interests battling for dominance in the organisation, and for merely depicting these as 'conspiracies against leadership' (Bensimon, Neumman and Birnbaum, 1989). In other words, the political model simply asserts, but never explains, the basis of the cohesion within, and conflict between, the various interest groups and power blocs in the university organisation. Another criticism that can be levelled against the political model is that it fails to acknowledge the strong bonds of collegiality, connectedness, and interdependence that are a feature of university life, which provide a counterweight to factionalism and conflict. In this regard, the model appears to overstate the fragmentation and fractious politicking in academic organisations.

The University as a Loosely Coupled System

The concept of coupling (whether tight or loose) is used to describe the extent or degree of connectedness or interdependence and coordination within and between different elements or subunits in an organisation (Ingersoll, 1993). The concept was originally used by Weick (1976) to describe the organisation and functioning of schools in the US, and has since been applied to the analysis of higher education institutions as well (Lutz, 1982; Birnbaum, 1988; Gilmore, Hirschhorn and Kelly, 1999).

Weick associates loosely coupled systems with organisations that are constituted of subunits or elements that, although linked to each other, continue to retain a certain level of distinctiveness and identity (Weick, 1976). Loose coupling suggests that the constituent elements of an organisation retain a degree of separateness from the (parent) organisation, or from each other. A tightly coupled organisation, on the other hand, suggests greater connectedness and integration between organisational elements, which lend the organisation to a greater degree of coordination. Depending on the degree of coupling then, the ability of the organisation to interact with, or coordinate, other elements or sub-units within the organisation may be circumscribed, infrequent, or weak.

Within universities, features of loose coupling can be identified on both the vertical and horizontal dimensions of the organisation. On the vertical plane, loose coupling manifests itself in the fairly discrete functions and identities of the three levels of university organisation, namely the top (executive management) level, the meso (faculty) level, and the bottom (academic enterprise) level. These three layers of university organisation, while inter-connected, have a degree of functional and operational independence from each other, which creates challenges for coordination and managerial oversight (Birnbaum, 1988; Morgan, 1997).

On the horizontal dimension of the organisation, there is even a greater degree of loose coupling between the academic and administrative domains of the university. While there is a certain degree of interaction and connectedness between these two domains, the academic enterprise (teaching and research) is not under the direct command and control of the administrative hierarchy of the university. In this regard, universities are seen to have a dual authority structure, consisting of the academic domain (where collegiality and professional autonomy are regarded as valued principles of governance) and an administrative structure that provides support to the academic domain, but is predicated on top-down bureaucratic control (Birnbaum, 1988). The duality of the authority structure in universities is a source of tension between these parallel hierarchies and management domains, thereby posing problems for organisational coordination and integration (Mintzberg, 1983).

There is an additional layer of loose coupling that is to be found within the academic domain of the university organisation, which is between the autonomous and self-regulating disciplinary units or academic departments of the university. The high level of autonomy and power that these disciplinary units wield and exercise, contribute a further layer of complexity to the organisation, thus giving rise to the high degree of internal fragmentation that characterises the university. The internal fragmentation of the university is also a function or consequence of the split allegiance of its academic professionals between the university and their disciplines (Gouldner, 1957). Thus the discipline-based professionalism of universities tends to fracture, rather than unify, the organisation (Clark, 1983). It is because of this organisational character that the university has been described as being akin to a conglomerate, or an academic holding company, which oversees an array of quasi-autonomous disciplinary subunits (Clark, 1983; Birnbaum, 1988).

The loosely coupled nature of the university organisation along the dimensions discussed above, and the high degree of autonomy and power enjoyed by disciplinary units, has given rise to decision-making processes that are characterised by uncertainty and indeterminacy, thereby creating challenges for organisational integration and coordination (Dill, 1992; Clark, 1995). This lack of organisational cohesion and coordination can lead to ambiguous goals and contradictory organisational objectives. It is this character of the university that has led some authors to liken the organisation to an 'organised anarchy' (Cohen and March, 1974). This model therefore subverts one of the key assumptions underlying both the collegial and bureaucratic models discussed above, namely that universities are essentially rational entities that are amenable to orderly decision-making and (top-down) coordination. This model, however, differs from the political system model in that it ascribes the lack of coordination and integration in decision-making to the very design of the university organisation, rather than to contestation between stakeholder interests.

Although the model of the university as a loosely coupled system has been criticised for suggesting more uncertainty, fragmentation and incoherence than is actually present in decision-making processes in universities (Baldridge, 1983), it makes an important contribution to understanding the complex nature of university organisation, and in particular the non-linearity and unpredictability of its governance and management processes.

The University as a Networked System

The models we have discussed above provide important insights about the inner organisational life of the university. By using various lenses to interrogate the internal dynamics of university organisation, governance and decision-making, they serve to foreground various aspects of the functioning of the university. What these models also have in common is that they examine the dynamics of higher education governance in isolation from the external context within which universities operate, or are a part. The

university does not, however, discharge its mission, vision, and goals in a vacuum, but has to interact with its various environments.[13] Given that this is a significant limitation that is shared by these afore-discussed models, they therefore provide partial insights with regard to the dynamic nature of higher education organisation, governance, and management. In contrast, the model of the university as a networked system puts the spotlight on the interactions and relationships that the university has to forge with its external environments in order to survive, and how these interactions shape and influence the structure, governance and management of the organisation. And given the context (almost everywhere) of declining public funding and increased competition for resources, universities are compelled to interact, make sense of, and transact with, their external environments.

As universities face more demands and expectations (for relevance and accountability), they have to devise innovative ways to respond to these challenges (Kulati, 2000). One of the ways in which universities have responded to these challenges has been to develop networks and collaborative partnerships with external actors and stakeholders such as knowledge producers in industry, government and non-governmental organisations, and communities in their locales. From the perspective of this model, the university is regarded as being in a state of constant engagement with its environments as it seeks to secure resources in order to carry out its multiple mandates of teaching, research, and engagement. The pressures from the university's external environments, which include, but are not limited to, the rise in competition between higher education institutions for resources, the decline in public support for universities, and the increasing social demands for relevance and responsiveness, require the university to develop more robust response capabilities to these challenges. Thus the ability to engage with, and adapt to, its external environments is

[13] I use the plural 'environments' rather than the singular, because environments are varied: there is the demand environment for students and resources that universities need to survive; there is also the market environment for the products of the knowledge enterprise of universities; and finally, there is the regulatory environment that dictates how universities are governed, funded, accredited, etc.

regarded as one of the defining features of the networked university - it is what gives the university its dynamism and resilience.

The theoretical and conceptual antecedents of the network model of the university can be traced to studies conducted in the early 1960s by Burns and Stalker on the effects of changing markets and technologies on the nature and management of organisations (Burns and Stalker, 1996). Arising from these studies, Burns and Stalker conceptualised two ideal types of organisation that they described as the extreme points of a continuum on which most organisations can be located. On the one end of the continuum is the *mechanistic* type of organisation, which is best suited to stable conditions, and whose organisational features mirror Weber's conception of the bureaucratic organisation (Weber, 1964): the specialised differentiation of tasks; the hierarchical structure of control, authority and communication, which is reinforced by the location of organisational knowledge and coordination at the top of the hierarchy; a tendency for interaction between organisational members to be vertical (between superior and subordinate), where such interaction is governed by instructions and decisions issued by superiors to subordinates. On the other end of the continuum is the *organic* form of organisation, which is most appropriate for unstable or changing conditions. The organic organisational form is characterised by a network structure of control and authority, where an individual's role is derived from the presumed 'community of interest' with the other members of the organisation (Burns and Stalker, 1996). In this community of interest, knowledge and expertise does not reside at the top of the organisation but is located throughout the network, where there is a lateral, rather than vertical, direction in communication, and where positions in the organisation are differentiated according to seniority based on expertise.

The other conceptual strand of the network form of organisation is the contingency theory of organisation, which is discussed later in this chapter under the section on theoretical perspectives. In brief, contingency theory focuses on the 'internal structural

accommodations' that organisations have to undertake in order to cope with the pressures and demands that emanate from their environments (Reed, 1992: 80). Some of the environmental contingencies that organisations are confronted with are volatile market conditions, technological and environmental change, political pressures and realignments, resource uncertainty, and global emergencies such as pandemics.

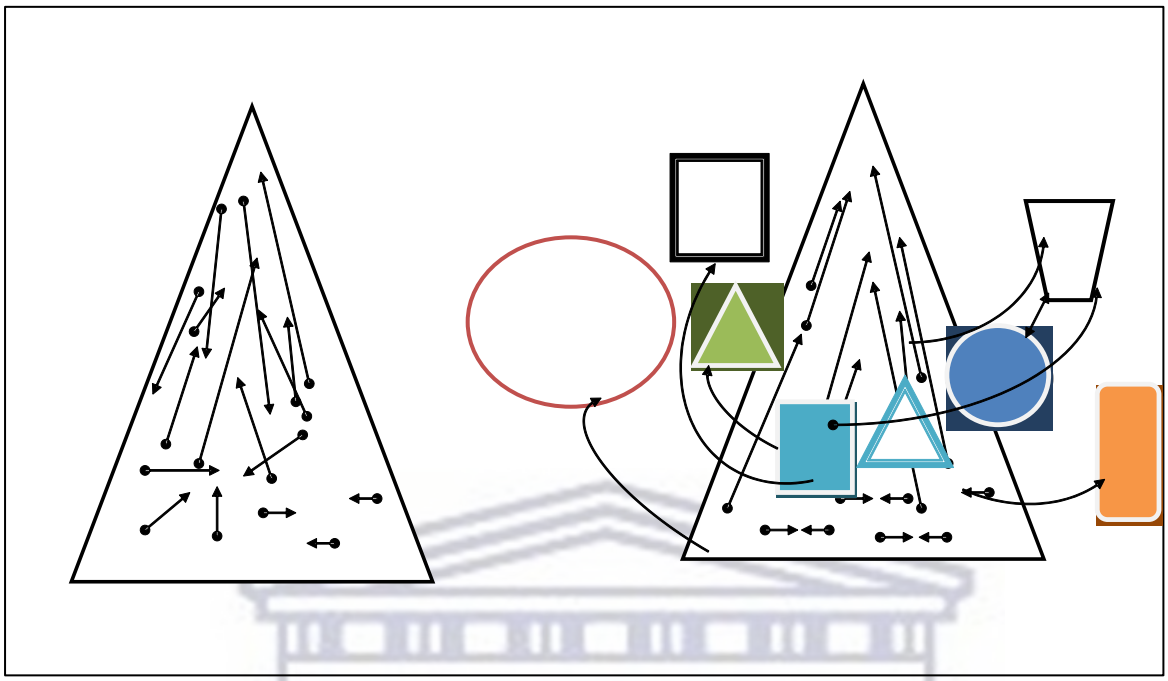
The university as a network form of organisation has three distinct, but related, features that are a function of its structure and design: the first is its highly differentiated internal structure, which arises from the need to negotiate an unstable external environment. The second feature of the university as a network system is the loosely coupled internal sub-units made up of cosmopolitan academic experts, whose allegiance is split between the university and the epistemic communities from which they obtain recognition and prestige (Gouldner, 1957; Burns and Stalker, 1996). The third feature of the network form of organisation are the relationships of interdependence that characterise the interaction between the university and its external environments. These network exchanges occur through individuals or organisational units that are engaged in 'reciprocal, preferential, and mutually supportive actions' whose basic assumption is that one party is dependent on resources controlled by another, and that there are benefits to be gained from the pooling of resources and working collaboratively (Powell, 1990). The university as a networked system is thus constituted of a constellation of micro-networks (consisting of academic departments or disciplinary units, research entities such as centres & institutes, and individual academics) that become the source of the boundary spanning relationships and activities that the university engages in as it interacts with its environments. These micro-networks also constitute the source of the university's ability to continuously adapt, innovate and renew itself (Gumport and Sporn, 1999).

The model of the university as a networked system also puts emphasis on how the university as an organisation responds to some discontinuity or lack of fit that arises between itself and

its environments (Cameron, 1984). In this regard, the challenge for governance and management in the network form of organisation is to foster integration among the disparate and loosely coupled organisational subunits so that there is a coherent organisational response to environmental threats or demands As Dill and Sporn have put it, 'comprehending how a network organization can be welded together with the traditional informal networks of academic life to meet the new corporate level challenges of the university is the critical and creative task of the next generation of university leadership' (Dill and Sporn, 1995).

The model of the university as a networked system thus shifts the attention away from the central concern of the previous models, which has been with intra-organisational attributes and dynamics, whether these are related to structure and design (university as a professional bureaucracy/loosely coupled system), decision-making processes (university as a collegium), or contestations about power (university as a political system). Instead, this model foregrounds issues of organisational adaptation and change, especially where these have been in response to the organisation's interaction with its environments. According to Rip (2004), this is one of the key differentiators between the modern and post-modern university. The graphic below (Figure 5) provides a visual presentation of the contrast between the modern university (depicted on the left, where the focus in on the internal workings or dynamics of the organisation), and on the right, the networked or post-modern form of university organisation, which, in addition to its internal functioning, is also characterised by a constellation of external relationships and interactions that its academics are engaged in with partners and collaborators who are located outside the university.

Figure 5: From the modern to post-modern or networked university



Source: Rip, 2008

To conclude this discussion, the main thrust of the model of the university as a networked system is its depiction of the university as being in a state of constant change and adaptation as it seeks to respond to pressures (for survival) and demands (for relevance) emanating from its external environments. This model of the university is regarded to be the most appropriate for this study because it locates the dynamics of change within universities in the context of the developments and challenges that emanate from its external environments. In this regard, it goes further than the other models that have been discussed in this chapter in that it foregrounds the vital role played by the external environment in shaping the internal workings (design, structure, and management) of the university. This model is not without its shortcomings, however, especially its depiction of the university organisation as a unitary entity. This study will seek to address this lacuna by considering the multi-level nature of university organisation, and interrogating the implications of this organisational feature for university coordination and management.

The next section discusses the literature that examines the nature of the external environment of the university, in particular the emergence of the new public management as a key driver of the reform agenda in public sector organisations, and how its central tenets have also influenced the discourse on university management and governance.

The New Public Management

The term 'the new public management' is used in the literature as a generic descriptor for a cluster of ideas, values and practises that, from the early 1990s to date, have come to dominate the discourse on public sector reform and management (Mathiasen, 1999; McLaughlin, Osborne and Ferlie, 2002). The new public management has been defined as a set of ideas and management procedures that aim to bring about accountability, effectiveness and efficiency with respect to the governance and management of public sector organisations (Hernes, 2005). While the core tenets of what has come to be known as the new public management originated from countries such as the Netherlands, the United Kingdom, and New Zealand, they have also permeated the public reform agenda of many other countries beyond the OECD, including those in the developing world, such as South Africa (Manning, 2001; Elias Sarker, 2006).

The emergence of the new public management as a public reform agenda arose out of concerns from OECD governments that public sector organisations were failing to carry out their public service mandates efficiently, and to respond effectively to social problems (Pollitt, 1993). Paramount among these concerns was the sub-optimal internal functioning and the underdeveloped strategic capabilities of the public services, which made these organisations unable to respond to the internal and external challenges they faced. Another concern was the outdated organisational design and structure of the public sector organisations, which rendered them as 'incomplete' organisations (Brunsson and Sahlin-Andersson, 2000).

The main ideas of the new public management reform agenda can be clustered into four key ideas or themes: first, the restructuring of public organisations to increase their effectiveness; second, the maximisation of organisational efficiency; third (and related to the second theme), the increased focus on performance and measurable outcomes; and finally, the 'managerialisation' of the public sector (Newman and Clarke, 1994; Hood, 1995; Mathiasen, 1999). The elements of the new public management that fall under the first theme of organisational restructuring are the breaking up of public sector organisations into self-managing and 'corporatised' units, which has often been accompanied by the decentralisation of decision-making (especially over resource allocation and service delivery) to these corporatised units (Hood, 1991). The corporatisation of the public sector is therefore seen as a key mechanism in improving organisational effectiveness, especially with regard to the provision of quality and value for money services.

The key public sector reforms with regard to the second theme of the maximisation of efficiency have put emphasis on greater parsimony and discipline with regard to the use of resources within public sector organisations. The main strategy for maximising efficiencies (or bringing down costs) would be achieved through the creation of internal markets within these organisations in order to promote competition between their corporatised sub-units. Furthermore, in order to maximise savings not only within discrete organisations but in the public sector as a whole, the creation of a 'marketised' environment also extends beyond individual public organisations through the creation of a competitive environment between public sector institutions (Mathiasen, 1999).

The third cluster of public sector reforms, whose focus is on evaluating organisational performance, has seen a shift from process monitoring to output control. This has been achieved through the introduction of more explicit and measurable indicators to monitor the performance of the 'corporatised' units, and the use of performance indicators as the basis for promotion and remuneration (Hood, 1995). The fourth theme has focused on the

managerialisation of the public services through the introduction of management practices and techniques that have been drawn from the private sector (Clarke, Cochrane and McLaughlin, 1994). The underlying agenda of managerialism has been on strengthening the strategic capabilities of the public sector leadership, and has been accompanied by a shift towards a more visible and hands-on approach to management, using the mantra of 'getting managers to manage' (Newman and Clarke, 1994; Mathiasen, 1999).

Although the terms the 'new public management' and the 'new managerialism' tend to be used interchangeably in much of the literature, in this study I have followed Larbi in drawing a distinction between the two concepts (Larbi, 1999). According to Larbi, the new public management is an umbrella concept that comprises two elements: the first is the new managerialism strand, which puts emphasis on the intra-organisational managerial procedures whose objective is to increase organisational efficiency and productivity through the introduction of strategies and techniques that have been drawn from the private sector. The second strand of the new public management is marketisation, whose focus is on establishing an environment that promotes competition between public sector organisations in order to maximise efficiencies in the public sector as a whole.

The new public management is, however, more than just a set of organisational procedures or managerial best practices, and must also be seen as an ideological framework that underlies the public sector management ethos (Newman and Clarke, 1994; Clarke, Gerwirtz and McLaughlin, 2000). It is a value framework and belief system that public sector organisations are enjoined to assimilate if they are to serve their publics effectively and efficiently. As a doctrinal framework, the new public management is premised on the notion that it is only through better management practices and approach that the public sector can effectively and efficiently address societal problems (Pollitt, 1993; Hood, 1995). In other words, in addition to its preoccupation with the technicalities of organisational design and managerial procedures, the new public management also has an ideological or doctrinal

dimension, which is to legitimate the corporatisation of public sector organisations and the leading role that managers can, or should, play in public sector reform.

Conceptualising the new public management as a multifaceted reform agenda that manifests itself in several ways enables the examination of the extent to which its emergence as a driving force in the external environment of universities has had an influence on organisational change strategies in these institutions. The discussion will now discuss the literature on the emergence of the new public management reform agenda in higher education.

The New Public Management and Higher Education Reform

The literature on the emergence of the new public management in higher education reform has, perhaps not surprisingly, largely focused on developments in western Europe, Australia, and New Zealand (Deem, 2003; Meek, 2003; de Boer, Enders and Leišyté, 2007). This can partly be attributed to the key role played by the OECD in agitating for reforms inspired by the new public management in its member countries and, in the case of western Europe, to the crisis of legitimacy that confronted higher education (Bleiklie, 1998). This crisis of legitimacy was fuelled by perceptions of higher education being seen as ineffective in addressing societal problems, inefficient in its internal management systems, and generally being aloof with respect to the need to be accountable for how it spent public funds (Braun, 1999; Reed, 2002).

This crisis of legitimacy is also regarded to have been instrumental in the demise in Western Europe of the philosophical doctrine of higher education as a public good, in which the university as a cultural institution was bequeathed a historical mission to promote social cohesion and integration (Bleiklie, 1998). The reform agenda of the new public management has therefore seen the idea of the university as a public good being superseded by the

corporatised university, whose agenda is driven by the needs of both state and market. The emergence of the new public management in higher education also coincided with the ascendancy of the regime of 'Strategic Science' in Europe and beyond, which saw increasing demands from governments for accountability and relevance with respect to publicly funded research in universities (Rip, 2008). It also signalled the demise of the social contract between higher education and the state, which had informed the framework for the public funding and governance of science in the West since World War 2. The origin of what came to be referred to as the social contract between universities and government, and which provided the framework and rationale for the public funding of science, was Vannevar Bush's 1945 post-war report to the US President, titled: *Science: the Endless Frontier* (Bush, 1945). One of the central tenets of this social contract was that basic or fundamental science was best done in universities with minimal state interference, and that, in the interests of society and the public good, governments would provide funding to public universities to engage in the discovery of new knowledge through scientific research, but leave the decisions about the 'what and how' of science to the scientific community (Martin, 2003).

Another development that gave impetus to the introduction of higher education reforms that were inspired by the new public management was the decline of the welfare state, which followed the coming into power of right-wing governments in western Europe. This saw the emergence of what has been referred to as the evaluative state, which has been associated with a shift in governmental steering approach from 'state control' to 'state supervision', whereby the detailed control and regulation of higher education institutions was supplanted by an *ex post facto* accountability regime that emphasised goal formulation and arms-length steering, and the use of monitoring and evaluation instruments such as quality audits and performance indicators (Neave, 1988; Neave and Van Vught, 1994). As governments retreated from direct control of public higher education and emphasised arms-length steering, 'steer, rather than row' thus became the control regime of the evaluative state,

because those who steer have far greater control over the boat's destination than those who row (Denhardt and Denhardt, 2000).

There is a considerable body of literature that has shown how the new public management has been the driving force behind the governance reforms of the early 2000s in Europe. For example, in the case of the Netherlands, the promulgation of a new higher education legislative framework reconfigured the governance structures and management dynamics within Dutch universities (de Boer and Huisman, 1999). There are three claims that emerge from this literature regarding the implications of the new public management for higher education governance and management.

The first claim is that, through its managerialist approach to university management, the new public management has displaced the traditional way of organising and managing the university (Braun, 1999; Reed, 2002; Deem and Kevin J Brehony, 2005). In particular, the claim is that the introduction of managerialism in universities has given rise to their corporatisation, where managerial diktat has superseded collegial governance and management. Indeed, it has been argued that the environment of competition, declining resources and the changing social demand for responsiveness and efficiency, has rendered it necessary for universities to develop a more corporate form of organisation and management (Dill and Sporn, 1995). This study will examine this claim by interrogating the extent to which the higher education legislative reforms introduced by the newly elected democratic government in South Africa, which contain some of the key elements of the new public management, have given rise to managerialist approaches to higher education management and governance.

The second claim is that the managerialist approach to university management has altered the balance of decision-making power in universities away from the professoriate, towards the executive management (Braun and Merrien, 1999; de Boer and Huisman, 1999). In

similar vein, Deem has also argued that the advent of the new managerialism in UK higher education has put under threat the hitherto hands-off and 'gentlemanly' governance practices that were once the norm in these universities, where academics worked together with minimal hierarchy and maximum trust (Deem, 1998). It should also be noted, however, that some authors regard such accounts and claims of the demise of collegiality as representing a romanticised view of the (classical) university, which is more myth than reality, but has nonetheless enjoyed 'a rather better press than it deserves' (Ramsden, 1998). From the perspective of these authors then, the new public management has undermined the traditional norms and values of university governance, and has upset the delicate balance between academic self-governance and managerial authority and oversight (de Boer and Huisman, 1999). A similar argument has also been made in a study on the changing nature of the deanship at a South African university (Bernadette Johnson and Cross, 2004).

The third claim that is made is that the shift in the balance of power from academics to managers has resulted in the domain of knowledge production, including the setting of priorities and objectives research in universities, is no longer under the control of academics but of external interests (Braun, 1999).

Although these studies have focused on the implications of the rise of the new public management and the new managerialism for university governance and management internationally (Braun and Merrien, 1999; Meek *et al.*, 2010), and in South Africa (Bernadette Johnson and Cross, 2004), I have not come across a study that has interrogated these changing dynamics of university governance and management with respect to the three levels of university organisation, namely the executive management, the levels of the deans (middle management), and that of the academics and research performers. This study seeks to address this gap by examining these three claims that have emerged from the

preceding discussion, and which will be interrogated empirically given their relevance to the main hypothesis of this study.

Theoretical Perspectives

Earlier in this chapter, it was mentioned that this study views the model of the university as a networked system as being the most appropriate in enabling a closer examination of the dynamics of change and organisational adaptation in higher education institutions. Cameron (1984) defines organisational adaptation as:

> the modifications and alterations in an organization or its components … [so that it can] adjust to changes in [its] external environment. Its purpose is to restore equilibrium to an unbalanced condition.

The central challenge for management in networked organisations is the need to balance the tension between, on the one hand, fostering differentiation in order to encourage and support organisational adaptation and innovation and, on the other hand, ensuring organisational cohesion through measures that foster organisational integration (Dill and Sporn, 1995). This challenge is particularly acute in university organisations, whose complex organisational dynamics, for example between the administrative and academic domains, as well as the cosmopolitan and boundary spanning activities of the academic experts, is a function of the loosely coupled and network features of the organisation. The challenge of integration for university managers, therefore, is to develop a coherent organisational response to the external demands and challenges that universities face, by striving to align the disparate tendencies of the academic/disciplinary units - memorably referred to as 'academic tribes' by Becher- with the strategic mission and priorities of the university (Becher, 1989). Given their poor integrative capabilities and lack of cohesive organisational attributes, which were highlighted in some of the models of the university discussed earlier, universities face a particular challenge, which Whitley has been referred to

as ‘authoritative coordination and steering’, in developing coordinated responses to external challenges (Whitley, 2008).

There are two theoretical perspectives that provide the analytical tools to examine and interrogate organisational change and adaptation in universities, and these are the contingency and strategic choice theories. Both these theoretical perspectives are part of a group of theories in organisation studies that fall under the open systems framework. The central concern of the open systems framework is how organisations as social units come to be designed, transformed, or even resist transformation, as they interact with their environments (Reed, 1992; Morgan, 1997; Scott, 2003). A key assumption of the open systems framework is that organisations, like living organisms, interact with, and strive to adapt to, their environments in order to survive. Organisations, as living and adaptive social units, are therefore understood to be in a state of constant interaction and relationship of mutual interdependence with their environments. Although adaptation does not always imply reactivity on the part of an organisation - given that proactive or anticipatory adaptation is possible as well - the emphasis in the open systems framework is nevertheless on how an organisation responds to some discontinuity or lack of fit that arises between the organisation itself and its environments (Cameron, 1984).

The open systems framework distinguishes between two kinds of environments that organisations interact with (Scott, 2003). The first is the *technical or task* environment, which is made up of the inputs or resources that are necessary for organisational functioning and survival. The second is the *institutional* environment of organisations, which is constituted by the cognitive, normative and regulatory structures, activities and processes that provide stability and meaning to organisational behaviour (Scott, 2003). What follows is a discussion of the key ideas and concepts from contingency and strategic choice theories of organisation, and how these will be utilised in this study.

Contingency Theory

The early organisational studies that gave rise to contingency theory demonstrated that successful adaptation by organisations to their environments depended on the ability of those in leadership to interpret the conditions under which their organisations operated, and devise appropriate responses to those challenges (Morgan, 1997). One of these influential studies, which was conducted in the 1960s by Lawrence and Lorsch (who were the first to use the term 'contingency theory' insofar as it related to organisation theory), examined how organisations dealt with different kinds of contingencies, especially those related to technological change and market volatility (Lawrence and Lorsch, 1967). The study's main finding is that *differentiation* and *integration* are the key strategies that successful organisations adopt in negotiating their environment.

Lawrence and Lorch define differentiation as the extent of segmentation in the internal structure of an organisation into subsystems or subunits, each of which tends to develop distinct attributes that are a function of the nature of its interaction with its relevant external environment (Lawrence and Lorsch, 1967). In the case of the university, one finds the academic and administrative subsystem, each with its own attributes. As already discussed in the model of the university as a loosely coupled system, there is further segmentation within the academic domain, in which academic units or disciplinary communities operate independently of each other, each with their own unique attributes that are shaped not only by disciplinary traditions, but also by the external environments (funding regimes, scientific and epistemic communities) that these disciplinary communities interact with.

According to Lawrence and Lorsch, the more unstable, complex, and demanding the environment confronted by an organisation (for example, rapid technological change), the more differentiated its internal organisational structures becomes (Lawrence and Lorsch, 1967). Faced with a more differentiated organisational structure, it is then necessary for the

organisation, in order for it to be more responsive and effective in responding to challenges emanating from its external environment, to devise integrative strategies that will help it coordinate the activities of its various internal structures or subunits. The converse of this proposition is that the less complex and less prone to change an organisation's external environment, the less specialised or complex its internal structure or design

Integration is defined as the process of achieving 'unity of effort' among and across the organisational subunits in order to achieve an organisation's strategic goals (Lawrence and Lorsch, 1967). Faced with a more differentiated organisational substructure, it then becomes necessary for the organisation to devise integrative strategies that will help it coordinate the activities of its various subunits, in order for it to be more responsive and effective. One of the key findings in the studies conducted by Lawrence and Lorsch was that differentiation and integration as organisational phenomena are processes that are constantly in tension – or 'essentially antagonistic', to use their phrase - and that one can be achieved only at the expense of the other (Lawrence and Lorsch, 1967). The challenge of organisational change management, therefore, is the extent to which this tension is held in balance.

While contingency theory has made a lasting contribution to the study of complex organisations, it has been criticised for its environmental determinism, in that the organisation is regarded as a victim of forces beyond its control, lacking the capacity to chart its own course on the basis of the strategic choices it has available or, indeed, to shape the environment itself (Reed, 1992). In other words, by regarding organisations as being at the mercy of the environment, contingency theory denudes organisations of agency or 'strategic actorhood' (Whitley, 2008).

Strategic Choice Theory

From the perspective of strategic choice theory, organisations are more than just a creation or product of environmental forces, but are also shaped by the choices that are made by those in leadership to direct or determine organisational action (Child, 1972). Further, the strategic choices that organisations are confronted with are themselves circumscribed by possibilities and constraints that are essentially political in nature. Strategic choice theory does not, however, dismiss the importance of environmental factors in either facilitating or limiting organisational choice or action, given the relationship of interdependence between the organisation and its environments. A process that is integral to exercising choice is the enactment of one's environment, which takes place when organisational leaders observe, perceive, and interpret – that is, make sense of, or enact – their environments (Daft and Weick, 1984). In other words, organisations are not always at the mercy of the environment because organisations can adopt strategies to reconfigure the nature of the relationship that they have with their environments (Child, 1972). For example, in the case of higher education, university organisations can embark on fundraising drives or develop collaborative partnerships that seek to reduce their dependence on government funding.

Private firms in market economies are inherently able to become strategic actors, which is a capability that is crucial in enabling them to compete effectively through their ability to mobilise and direct employee commitment towards achieving the core purpose(s) of the firm. This is accomplished by harnessing organisational capabilities, through the authoritative co-ordination and steering, of the enterprise's economic activities, and the generation of joint problem-solving routines across the firm's sub-units, which may be unique to the firm and embedded in its organisational processes and culture (Whitley, 2008). Even though private sector firms, especially those working in complex or rapidly changing environments, may be differentiated internally into functionally autonomous units (for example divisions for R&D, sales, marketing, etc.), they nevertheless possess strong integrative features: first, the

purpose or core business of the enterprise is unambiguous (usually the production of goods and/or services); second, the decision-making power with respect to the design of the organisational structure and the coordination of organisational processes is located at the executive level of the organisation; third, this authority, which is uncontested within the organisation, includes the ability to determine the collective objectives of the organisation, the power to organise the distribution of labour within the organisation, and to evaluate the performance of the firm's sub-units (Child, 1997; Whitley, 2008).

Strategic choice theory also recognises that agency, or the ability to take action, is itself circumscribed by factors internal to the organisation and by external (environmental) conditions. Borrowing from Gidden's structuration theory, Child contends that the extent to which organisational actors are able to exercise agency is simultaneously informed and constrained by existing organisational structures, routines and traditions, which he refers to as 'inner structuration' (Child, 1997). The second factor that circumscribes agency is 'outer structuration', whereby the external environment presents both opportunities and constraints on the strategic choices available to organisations. Outer structuration may see organisational actors seeking to negotiate or reach some form of accommodation with environmental conditions. Strategic choice theory therefore seeks to bring to the fore the dynamic (and political) nature of the interplay between agency, organisational structure and conditions, and the external environment (Child, 1997).

Although strategic choice theory was developed to explain the dynamics of organisational change in organisations or firms operating in the context of a market economy, there has been a growing literature focusing on its implications for higher education organisations (Meier and Krücken, 2006; Whitley, 2008; Thoenig and Paradeise, 2018). This literature seeks to examine the pressures and processes, primarily emanating from the external environment of universities, which have given rise to higher education organisations beginning to develop capabilities to become organisational or strategic actors. These

pressures, which have been discussed in the earlier section on the new public management and higher education reform, have sought to fashion the organisation and management of higher education institutions in the image of private sector organisations (Brunsson and Sahlin-Andersson, 2000).

According to Whitley, the ability and extent to which universities can become strategic actors - that is, to initiate or adapt to change – is dependent on three factors: first, their nature or inherent characteristics as organisations that produce public scientific knowledge; second, the regime of public science they are a part of; and third, the dynamics of the legislative and policy frameworks of the countries in which they are located (Whitley, 2008; Whitley and Gläser, 2014). According to Whitley, the organisational characteristics of universities limit their ability to develop the capabilities or competencies that would enable them to act strategically (Whitley, 2008).

Some of the organisational features that limit the ability of universities to coordinate or direct the activities of their scientific enterprise, and to mobilise and direct the commitment of its academics towards achieving a unified purpose firm - which is basically the purpose of strategic research management - are the following: the indeterminacy of the discovery of knowledge as a scientific endeavour; the extent to which the decisions and judgments of academics are driven by disciplinary interests and professional career considerations, rather than organisational priorities; and the reliance of academics on national and international reputational systems for research funding and evaluation for their academic reputation and prestige (Whitley, 2008). Whitley's central thesis, therefore, is that these organisational features, which are a function of the nature of the scientific enterprise of the university, have inhibited universities from becoming 'authoritatively integrated and directed' organisations, thereby constraining their ability to act strategically (Whitley, 2008).

The combination of contingency and strategic choice theories - and their application to the university setting - provide the necessary conceptual tools to interrogate systematically the key research problem of this study, to which the discussion now turns.

Chapter 4: Research Design and Methodology of the Study

Introduction

This chapter discusses the research design of the study, which includes the key research problem, hypothesis, and methods of data collection. As this is a multiple-case study using a qualitative research approach, the section of the chapter dealing with research design will also outline the sampling strategy that has been used to inform the selection of universities that have been used as cases for the study. The chapter will also present the typology of universities that was developed as a theoretical sampling tool in order to guide the selection of universities that were used as cases for this study. The chapter concludes with a discussion of the data collection methods that have been utilised for the study.

The Study's Key Research Problem

The study examines and interrogates the nature of the changes to strategic research management at selected South African universities that arose in response to the higher education transformation agenda of the newly elected democratic government. The focus of the study is the ten-year period between 1997 and 2007.

The Main Questions of the Study

Flowing from the statement of the key research problem above, three main questions guide the research design of this study. The manner in which these questions are formulated is informed, in the first instance, by strategic choice theory in that universities are expected to adopt strategies (as organisational actors) to respond to pressures or demands emanating from their external environment. The questions are also informed by an understanding of

the university as a multiple-level organisation, a concept that is discussed later in this chapter in the section on research design. The main questions of the study are therefore the following:

1. At the top level of the organisation, what strategies did universities adopt in response to the transformation agenda as outlined in the government's White Paper on Higher Education Transformation, especially as this related to the organisation and strategic management of research? To what extent did these strategies enhance the strategic actorhood of universities, thus enabling them to develop and implement coherent organisational responses to the challenges they faced?

2. How did the roles and responsibilities of deans change with regard to research management, given their contradictory roles in the university where, on the one hand, they are part of the university's executive team and, on the other hand, they are the custodians of the interests of their faculties?

3. At the level of the academic layer (the research performers), how, and to what extent, did the changing nature of research management at the strategic level, especially the attempts to enhance strategic actorhood at the top level through enhanced strategic research oversight, shift the balance of power with respect to decision-making about the research agenda and priorities of the university?

Hypothesis of the Study

The hypothesis of the study is that, in response to the demands and challenges for transformation, there was a shift in the approach to strategic research management in universities. The hypothesis further postulates this shift - from a facilitatory to a more

directive or deliberate approach to strategic research management – is indicative of the emergence of strategic actorhood in universities.

Propositions of the Study

The propositions of the study are the author's expectations of the likely findings of the study. The formulation of the propositions has been informed by my conception of the university as a multi-level organisation, where each level, although influenced by the nature of the university organisation as a whole, also has its own sub-set of dynamics. The top level is that of the executive management layer, consisting of the vice-chancellor, the deputies, and other executive level managers (for portfolios such as human resources, finance, etc.). The middle level is made up of the deans of faculties, which remains a distinct organisational layer of university even though at some universities the deans are members of the broader executive team of the organisation. The third level of university organisation is that of the research performers or academics, either as individuals or collective entities (research groups, units, centres, etc.). Therefore, while the hypothesis of the study is that the shift in strategic research management has been in response to changes in the external environment of the university, the internal dynamics of the university that arise from the multi-level nature of its internal organisation also exert an influence, or inner structuration, with respect to the choices available to university managers (Child, 1997).

On the basis of the study's hypothesis and conception of the university as a networked form of organisation that is multi-level in its structure, the propositions are that the emergence of strategic actorhood will be evident in three ways, namely through:

1. the strengthening of the capacity of the executive management to steer the strategic research agenda of the university

2. the deans playing a more prominent role in research management at the meso-level of the university, and
3. the tighter coupling of the research agenda of academics to the strategic objectives of the university.

Research Design

This study uses a qualitative, multiple-case study, research design. Given that the objective of this study is to investigate and analyse the changing nature of the strategic management of research in universities that operate in different organisation contexts, qualitative research design is deemed to be appropriate research approach for this study as it is exploratory in its broader objective, seeking to gain a deeper understanding of the 'what' and 'how' questions of the investigation (Yin, 2018). According to Babbie and Mouton, exploratory studies are undertaken in order to achieve one or more of the following objectives: to satisfy the researcher's curiosity and desire for a better understanding of the phenomena under investigation; to explicate the central concepts and constructs underpinning a study; to develop new hypotheses about an existing phenomenon; to test the feasibility of undertaking a more extensive study, and to develop and refine the methods to be utilised in subsequent studies (Babbie and Mouton, 2001).

Furthermore, this study adopts a qualitative research design because its emphasis is also on building (inductively) towards an explanation or understanding that is based on analyses and interpretations of first-order descriptions of events and phenomena; in other words, it seeks to interrogate the 'why' questions as well (Babbie and Mouton, 2001; Yin, 2018). Finally, the qualitative research design is appropriate for this study as it is flexible in its approach to gathering and interpretation of evidence, allowing the researcher to adjust the ongoing data collection methods and modes of analysis in order to be able to respond to context-specific constraints (Lee, 1999).

The study seeks to gain a better understanding of the questions under investigation by using contrasting cases to test the conceptual propositions that have been outlined in the previous section. One of the strengths of the multiple-case study research design is that it allows for the collection of data from multiple sources that are located in a variety of settings, using various means of evidence gathering, for example interviews, raw empirical data, documents (both primary and secondary data sources), and observation. This enables the researcher to form a complex picture of the problem under investigation, while allowing for diverse and often competing explanations to be interrogated (Stake, 1995). Case studies are also useful when a multi-layered phenomenon is under investigation, where rich description and explanation is required, rather than a set of predictions based upon cause and effect (Yin, 2018). A further strength of the case study method is that it allows the researcher to play close attention to the particularities of the case as a 'bounded entity' while, at the same time, taking cognisance of the social, political, and other contextual factors and variables that may have a bearing on the dynamics of each case (Stake, 2005).

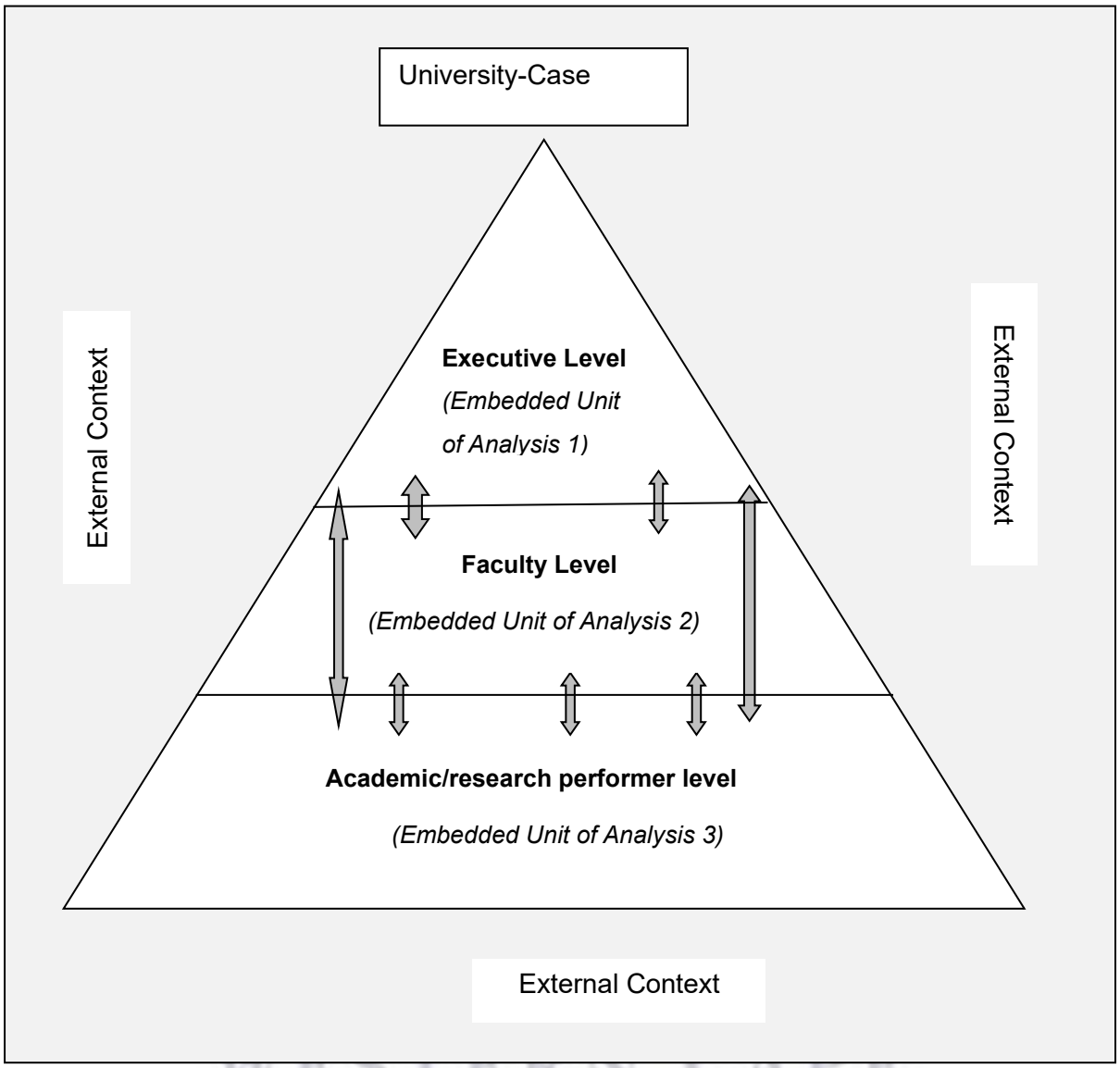
The Study's Unit of Analysis

The unit of analysis of this study is the university as an organisational unit. Given the multi-level nature of the university organisation, however, it is imperative to interrogate the study's central propositions in relation to the three levels at which research management takes place within the university, namely the top or executive management, the (meso) level of the deans, and the level of the academics and research performers. These levels can therefore be regarded as the embedded or nested units of analysis of the study such that, when considered together, they help provide a more comprehensive picture of the university as an organisational unit. The understanding of the university as a multi-level organisation also recognises the dynamics of power and influence at play in the interactions that occur

between these levels, and how these dynamics of 'inner structuration' facilitate or constrain organisational decision making (Child, 1997).

The diagram below (Figure 6) depicts the multi-level nature of university organisation, which also represents the three levels as the embedded units of analysis of the study, where 'embedded unit of analysis 1' refers to the executive management layer that is represented by the offices or portfolios of the vice-chancellor, the deputy vice-chancellors, and the other senior managers that form the executive team of the organisation. The 'embedded unit of analysis 2' is the meso-layer of the deans of faculties, and the 'embedded unit of analysis 3' refers to the level of the research performers, who conduct research as individual academics or in organised entities such as research centres or units. It is important to note that while the diagram depicts these levels as discrete entities, in reality the university is characterised by constant and dynamic interactions between these levels (hence the bi-directional arrows in the diagram). For example, while the deans' primary responsibility is faculty management, in many universities they play a dual role as they also form part of the university's executive management layer. Similarly, while the daily life of academics is primarily concerned with the responsibilities of teaching and research, they are also active participants in the organisational life of the university through their participation in key governance structures such as Senate and Council. This study can therefore be described as a multiple-case research design with embedded units of analysis.

Figure 6: Multiple-case design with embedded units of analysis



Adapted from Yin (2003)

The Selection of Cases for the Study

The multiple-case study method requires choices to be made about what to study, and why. In this regard, a choice has been made with regard to which universities would be selected as cases for this study, and within each university, the faculties or knowledge fields that the study would focus on. In this regard, the study has utilised a combination of cross-case and within-case approaches to the selection of cases (Miles and Huberman, 1994). The

selection of cases has been guided by replication rather than sampling logic because case studies are generalisable to theoretical propositions rather than to populations, what Yin refers to as *analytic generalisation* (Yin, 2018). In sampling logic, the respondents or subjects selected for a study are assumed to represent a larger pool of the population, so that the results obtained are then generalisable to the population. In replication logic, however, the basis for the selection of cases and the collection of data is guided by the theoretical propositions being tested; in other words, the replication of the findings from a number of cases is used to substantiate or negate the theoretical proposition that is being tested. Put differently, the choice of cases is driven by conceptual considerations, and not by a concern for representativeness (Miles & Huberman, 1994). The study's utilisation of theory-based sampling is to ensure that the cases that have been selected maximise the chances of discovering patterns and variations among the theoretical constructs that are being interrogated.

A typology of universities has been developed as a theoretical sampling tool to guide the selection of universities as cases for this study. The development of this typology has been guided by conceptual constructs and categories that evolved in the course of the research process, especially in the proposal development and literature review phase of the project (Strauss and Corbin, 1998). The development of the typology has also been informed by a study conducted by Cloete and Bunting (1999), who have developed a classification of institutional governance and management at South African higher education institutions, and Kulati (2003b), who has identified various approaches to leadership and institutional change in South African higher education (Cloete and Bunting, 1999; Kulati, 2003). The models of university organisation that are discussed in the literature review chapter were also a source of reference for some of the conceptual constructs used in the typology, which is framed not only by the internal organisational dynamics of the university, but also take into consideration the adaptation strategies that each university type is likely to adopt in response to external contingencies (Pfeffer and Salancik, 1978).

Typology of Universities

The typology makes a distinction between three types of university, namely the classical-elite university, the enterprising university, and the niche-seeking university. Four analytical dimensions have been used to highlight the primary features of each of the three types of university. These dimensions are the overall profile of the organisation; the academic regime and authority structure; the approach to organisational leadership and management; and the organisational adaptation strategy.

The purpose of the discussion of the three types of university is to foreground the primary distinguishing features of each university typology, rather than to dwell on those characteristics that are common across the university types. The typology also serves another function beyond its utility as a tool that helps us select cases for the study; it may also be an important factor in explaining the variation in the strategies that universities have adopted in their approach to strategic research management and strategic actorhood.

Classical-Elite University

Organisational Profile

The classical-elite university is often among the longest-established universities within a national higher education system. Given its history of providing education and training to the elites in society, or having developed a prominent academic reputation, the classical-elite university often occupies a position of prestige within its national higher education system. Because of its historical prestige, the classical-elite university tends to be regarded as the flagship institution that other universities in the system seek to emulate. In some higher education systems, the classical-elite university has been able to exploit its distinguished

national profile, academic reputation, or political influence to secure and protect the privileges it enjoys, including its access to resources (Clark, 1998).

Academic Regime and Authority Structure

Another feature of the classical-elite university is the considerable influence the professoriate tends to wield over academic governance and organisational decision-making; in this regard, it is the archetypical collegial university as described in our models of the university. The bottom-heaviness of the academic governance regime affords considerable authority and influence to the academics over the research agenda, and the academic enterprise in general, of the university (Mintzberg, 1983). A consequence of the power and influence that the professoriate wields in the classical-elite university - what Clark (1983) refers to as 'collegial rulership' - is that the executive leadership is likely to be appointed from within the ranks of the senior professoriate and, in line with the principle of *primus inter pares,* shares much of the value-framework that underpins collegial governance.

The bottom-heavy nature of the academic authority structure and the collegial governance tradition of the classical-elite university orient the organisation towards a consultative approach to decision-making. A consequence of the collegial tradition is that the executive management tends to lean towards consensus-seeking approaches to organisational management and leadership. Although there is an appreciation of the pressures facing the university to adopt managerialist approaches to organisational governance and management, especially when these are seen to promote efficiency and effectiveness, the classical-elite university's response to the new public management is often tentative, if not cautious.

Organisational Adaptation Strategy

The weight of tradition predisposes the classical-elite university to regard pressures emanating from its environments as contingencies to be managed. The university's response to external demands therefore tends to push the university's management towards adopting strategies that put emphasis on organisational stability and resilience, thereby minimising the deleterious impact these contingencies may have on the organisation. This manifests itself in a number of ways: first, there is a guarded and gradualist approach to organisational change, which is a by-product of the university's consensus-seeking culture and collegial tradition. Second, the adaptation strategy seeks to shield the most (financially) vulnerable (but excellent) organisational units from possible external shocks.

Enterprising University

Organisational Profile

The enterprising university came into prominence following Clark's ground-breaking case studies of five European entrepreneurial universities (Clark, 1998). This was later followed by another influential study on the rise of what was referred to as the 'enterprise university' in Australia (Marginson and Considine, 2000). There have also been other studies focusing on the challenges facing the 'innovative university' in the US (Eyring and Christensen, 2011). Although having different names, what the enterprising/entrepreneurial/ innovative universities have in common is their desire to find new ways of responding to a myriad of demands – a 'demand overload', as Clark (1998) puts it – within their national systems, while also seeking to disrupt the traditional approaches to education, training and research that have characterised the classical-elite university. Furthermore, developments that are linked to the globalisation of knowledge production and the rise of the services and knowledge-driven sectors in many of the high performing economies globally have increased the profile of the enterprising university.

Like the classical-elite university, the enterprising university puts emphasis on cultivating excellence in research and in teaching. Unlike the classical-elite university, however, it seeks to do so by cultivating transactional relationships with its target markets: first, the students who are regarded as the consumers of the products of the university and, second, the university's clients in industry and the private sector, who benefit from the skills of its graduates and the know-how that derive from its scientific and technological outputs. The enterprising university also strives to tailor its academic programme offerings to the needs of its primary clients in industry and the private sector. The enterprising university puts emphasis on taking maximum advantage of the increasingly marketised higher education environment in order to exploit and actively pursue opportunities that enhance its profile and reputation in its target markets.

Academic Regime and Authority Structure

The enterprising university cannot depend on the traditional mechanisms of collegial governance in order to adapt to its changing environment. It requires what Clark has termed a 'strengthened steering core', which will enable the organisation to become more agile, flexible, and focused in reacting to the rapidly changing demands from its environments (Clark, 1998). As a consequence, the enterprising university has to reconfigure its governance and management structures and processes so that the ability of its executive management to steer the university's strategic direction is enhanced. It will therefore seek to develop the capabilities and competencies that will enable it to act strategically and confer competitive advantage to its organisation (Whitley, 2008)

The reconfigured governance and management arrangements confer more authority to the executive management to assume a more prominent role in academic leadership, in particular with regard to overseeing the strategic agenda of university. The enterprising

university's strategic agenda is driven by an executive management core that is results-oriented, and whose focus is on the financial bottom-line (Marginson and Considine, 2000). This is accomplished through the centralisation of decision-making authority over strategic issues (such as key appointments, resource allocation, and the monitoring of performance) to the executive management layer.

The underlying operating logic of the enterprising university is that higher education, and especially the research enterprise, has become a business, and that the university as an organisation should be organised and managed as such. It follows, therefore, that the leadership and management challenge facing the enterprising university is seen as the gearing-up of the organisation so that it is able to reconcile, and be responsive to, the rapidly changing needs and expectations of its customers, the students, and its clients in industry and the private sector.

Organisational Adaptation Strategy

The enterprising university is characterised by an enthusiastic adoption of management fads such as portfolio analysis, management by objectives (MBO) and benchmarking procedures and techniques, which are used to improve efficiency in the administrative domain of the university, and promote productivity in the academic and research enterprise of the organisation. Furthermore, the enterprise university also strives to develop strong links with government, industry, and external funding agencies, using aggressive marketing strategies to enhance its organisational profile.

The focus of the university's adaptation strategy is to capture and maintain a dominant position and profile within its target markets, especially for those academic programmes and research units that have been identified as strategic assets to the organisation. As part of its response to changing market trends and signals, the enterprising university is likely to

reorganise its academic heartland (including its research activities) into tightly focused and nimbler corporatised units that are geared towards identifying and exploiting opportunities that arise from its environments (Clark, 1998).

Niche-Seeking University

Organisational Profile

The niche-seeking university seeks to position itself and distinguish its role in the higher education landscape through its narrowly defined mission. In many instances, the university's mission and academic programme profile has been developed in relation to a limited number of fields of study and specialisations, often in response to the needs of its region or locale. Whilst some niche-seeking universities have adopted a particular niche out of historical precedent (for example, the land-grant state universities in the United States of America and the so-called redbrick or civic universities in the UK, which were established in the nineteenth and early twentieth century), or as a survival imperative, others have deliberately sought to carve for themselves a unique role within their national higher education landscape. Whatever its antecedents, the niche-seeking university utilises its distinctive mission to consolidate its national profile and comparative advantage, thereby attracting students and funding.

Academic Regime and Authority Structure

The niche-seeking university does not have a clearly defined academic regime and authority structure. Instead, one finds that the academic regime and authority structure will be a function of the university's history, culture, and institutional maturity, rather than of its distinctive mission and academic profile. Therefore, the older and more established the niche-seeking university, the more likely it is to share attributes that are common with the

classical-elite university than with the enterprising university. This is also dependent on the extent to which there is mission creep within a given higher education system, where the newer universities tend to gravitate towards the more established or highly regarded universities in their systems, in relation to their mission and academic profile. In this regard, it is important to note that the demise of the binary system in countries such as the United Kingdom, Australia and South Africa has largely been attributed to mission creep, where institutions that were established for a particular purpose (polytechnics in the UK, the colleges of advanced technical education (CATEs) in Australia, and the former technikons – now universities of technology - in South Africa) over time moved away from their original mandates towards the traditional university mission by providing similar programmes, or developing an appetite for research. The traditional university sector in South Africa has also been caught up in mission creep by introducing programmes, especially in lucrative fields such as ICT and business studies, which were considered to be outside their traditional mission or original mandate.

Because the tightly defined mission is fairly explicit with regard to the goals and priorities of the university, the approach to management and leadership tends to be more directive in the niche-seeking university. Those universities that have an established research tradition are, however, likely to be characterised by a light touch approach to leadership and management. This light touch management approach also provides the space for academics and researchers to take initiative (within the parameters of the university's distinctive mission), and to develop strong links with their environments.

Organisational Adaptation Strategy

As a consequence of its focused mission and tightly defined organisational mandate, the niche-seeking university is well-attuned to the demands of its environment. And faced with external contingencies such as a shrinking funding base, the niche-seeking university has to

reduce its exposure to environmental threats by concentrating its research and academic efforts in those areas where it enjoys a competitive advantage. Partly out of a survival instinct, and also because of a keen sense of affinity with its environments, the niche-seeking university routinely embarks on boundary-spanning activities. Through these activities, the university has developed environmental-sensing capabilities that enable it to maintain a strong awareness of the demands and dynamics of its environment.

The Selection of Universities as Cases for the Study

Based on the typology discussed above, three South African universities were selected for the study. The table below (Figure 7) provides a summary of the key features of each university type. Even though the identification and selection of the three universities as cases for this study was done on the basis of them having a fairly close approximation to one of the three institutional types described above, there was, admittedly, also a degree of pragmatism in the choice of the university that was allocated to each type, given that it would be impossible to find an exact fit between the two.

Notwithstanding the limitation above, a test of the construct validity of the typology was undertaken, whereby the typology, together with the proposed ascription of the universities selected to one of the three types, was shared with the higher education institutions that were selected as cases for the study. This was shared either with the Deputy Vice-Chancellor or senior executive responsible for research oversight, or the Vice-Chancellor of the university concerned, in order to elicit their views on the appropriateness of the typology as a sampling tool, and the broad analytic comparability of their institutions' key characteristics to the proposed types. The informants from all three universities were in broad agreement with their institution's approximation with the institutional type as proposed by the author.

Table 4: A Summary Matrix of the Institutional Typology

Institutional Type / Analytical Dimension	Classical-Elite	Enterprising	Niche-Seeking
Organisational Profile	Strong national profile/ flagship institution	Fluid, with focus on enhancing market profile and impact	Tightly defined mission with focus on niche areas of specialisation
Academic Regime & Authority	Established collegial culture with strong influence of professoriate in organisational decision-making	Strong central steering in areas of strategic advantage	Light touch steering but guiding against mission creep
Adaptation strategy	Gradualist approach to organisational change with external demands treated as contingencies to be managed	Identification of strategic assets to capture and maintain dominant market position	Fine-tuning of profile in order to protect and entrench niche

Implication of the Typology for the Selection of Cases for the Study

A limitation of the study is that the universities that were chosen on the basis of the typology are, in the main, historically white universities. Because of its apartheid legacy, South Africa has a higher education system that is characterised by historic inequalities between higher education institutions. As it was shown in the chapter on the higher education policy landscape (Chapter 2), the inequality between historically black and historically white universities, which was a function of the skewed allocation of resources to support the research enterprise, was particularly acute in the area of research production during the 10-year period covered in this study. Although the study could have benefited from the inclusion of a historically black university, the universities that were selected were the best fit in terms

of the typology that was utilised to identify and select the cases for the study. Notwithstanding this limitation, however, the insights from the study are also of relevance to historically black universities given the research management dynamics at play, which are likely to be germane even for historically black universities as the organisation, management, and epistemic cultures of the research enterprise at these universities have come to mirror those at the historically white universities with a more established research tradition. Finally, it must also be noted that one of the universities selected for the study came about as a result of a merger between a historically black and historically white university, notwithstanding the fact that the historically white university, because of its stronger research tradition, became the dominant partner in the merged university.

A Statistical Overview of the Cases

As a prelude to the in-depth discussion of the cases in the next three chapters, this section provides a brief statistical overview of the universities that have been selected as cases for this study. The purpose of this brief discussion is to provide a bird's eye-view of the profile of the three cases, which is undertaken through the presentation of a set of proxy indicators that highlight the key features that differentiate these universities. These differentiating features are in relation to their size and shape, their level of research intensity, and the extent of entrepreneurial orientation of their research enterprise. The data sets that are used for the various indicators cover (with one exception) the ten-year period of the study, namely 1997 to 2007.

Size and Shape of the Universities

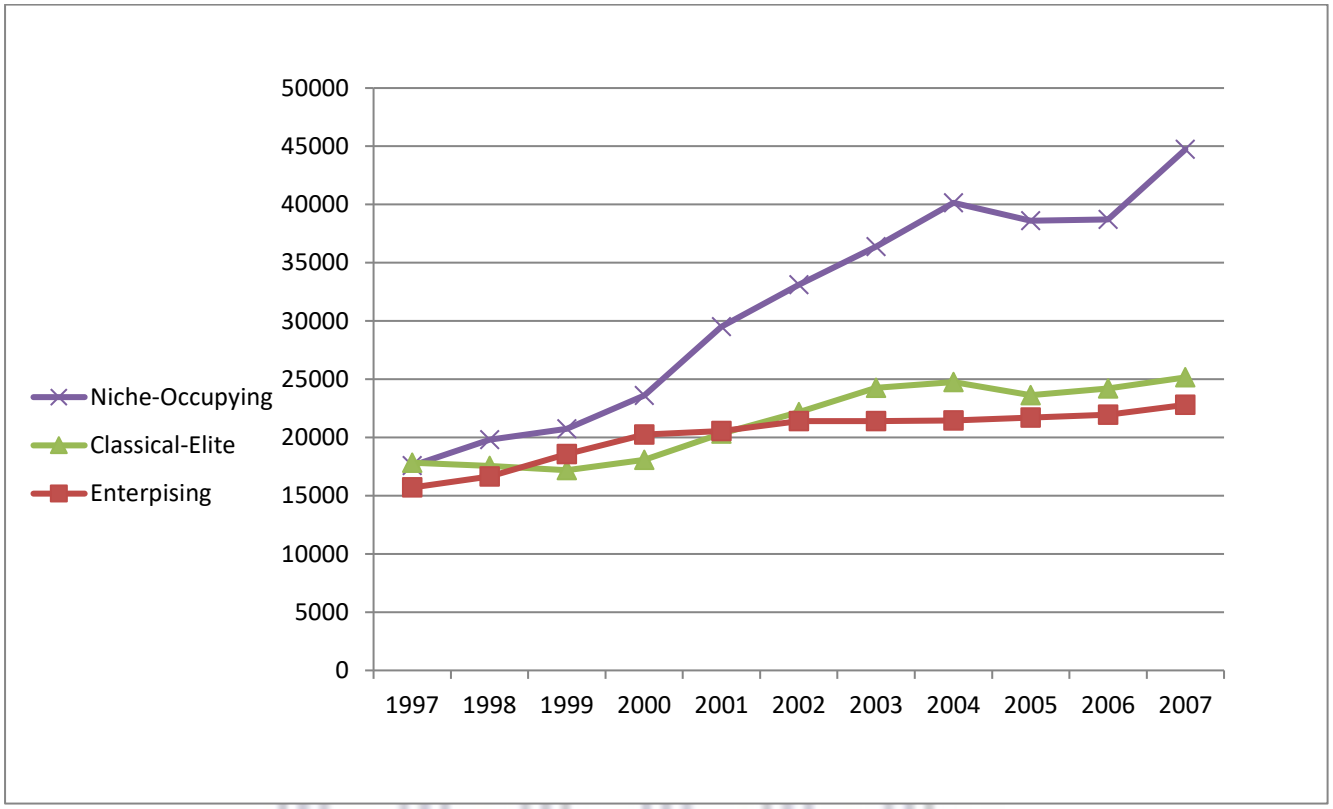
The size and shape of a university refers to the number of students enrolled in a university, and also the proportion of its student population that is registered in undergraduate and postgraduate programmes. The chart below (Figure 7) provides a snapshot of the

headcount enrolments for the three universities during the ten-year period under review. Although the three universities had almost comparable student enrolments at the beginning of the period in 1997, the growth in student enrolments for the Niche-Occupying University outpaced the other two as it had more than doubled by the end of the period. As already mentioned, the Niche-Occupying University is constituted by two universities (one historically white and the other historically black), that merged in 2003. The rapid increase in enrolments at the Niche-Occupying University occurred primarily at the historically white university, whose enrolments increased from 17 775 in 2000 to 27 729 in 2003 (Department of Education, 2005). Meanwhile, both the Enterprising University and the Classical-Elite University maintained a steady growth in their student enrolments over the same period.

The Niche-Occupying University falls under the category of a large university, especially between the years 2004 and 2007, when its student enrolment was over 40 000. The Enterprising University and the Classical-Elite University are considered as medium-sized universities, having had a total student enrolment of between 20 000 and 25 000 for much of the period under review.

The determination and classification by size is based on the average student populations at various universities in the sector. For the purpose of this study, a university with a student enrolment of 10 000 or less is regarded as a small university, that with a student population between 10 000 and 25 000 is medium-sized, and that with over 25 000 students is large.

Figure 7: Total Student Headcount Enrolments (1997-2007)



Source: HEMIS database, Department of Education

The next chart (Figure 8) shows the proportion of postgraduate students in relation to total student enrolments at each of the three universities, which gives us a sense of the shape of the universities' student enrolment profile. The chart shows that the Classical-Elite University and the Enterprising University have had a consistently higher proportion of postgraduate students (between 20% and 25% of their total headcount enrolments) compared to the Niche-Occupying University during the ten-year period. As shown in the previous chart, the Niche-Occupying University experienced a rapid increase in its undergraduate student enrolments while its postgraduate students enrolments remained static, which resulted in the decline (from 1999 onwards) in its proportion of postgraduate students relative to the total student enrolment.

Figure 8: Postgraduate (Masters & Doctoral) Students as a % of total student enrolments (1997–2007)

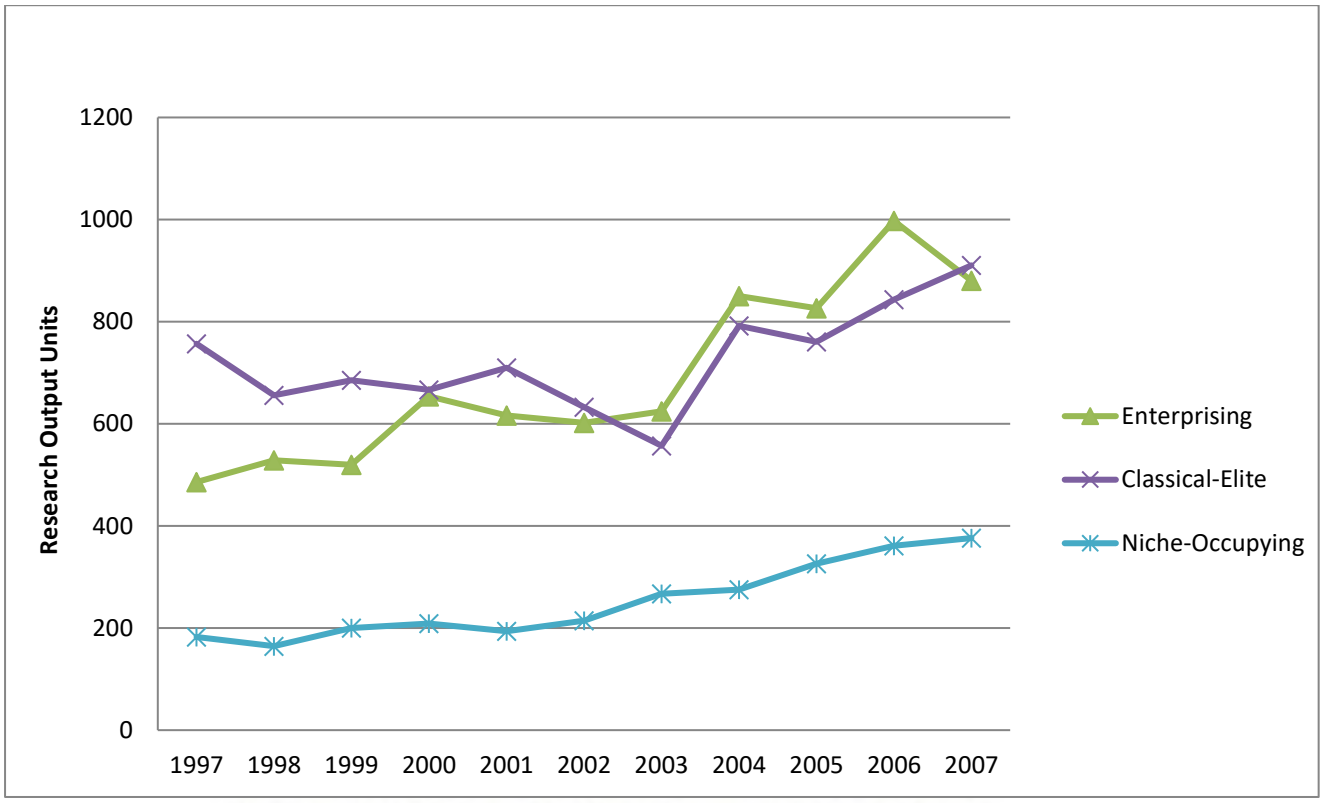
Source: HEMIS database, Department of Education

Research Intensity of the Universities

Two indicators, namely research publications output (journal articles and books) and research publications output per permanent academic, have been selected to serve as proxy metrics for research intensity. Figure 9 below shows the research publications outputs for the three universities, with both the Classical-Elite University and the Enterprising University far outperforming the Niche-Occupying University during the period. Both of these universities were among the top five universities in the country with regard to research publications output during the period in review. The graph also shows that the Enterprising University made considerable strides to catch up with, and at times perform better than, the Classical-Elite University in relation to this metric. As will be discussed in more detail in the

chapter on this case, the Niche-Occupying University was historically focussed on undergraduate education, until it changed its mandate in the late 1990s to focus on the development of its research capacity in selected fields.

Figure 9: Research Publications Output (1997-2007)

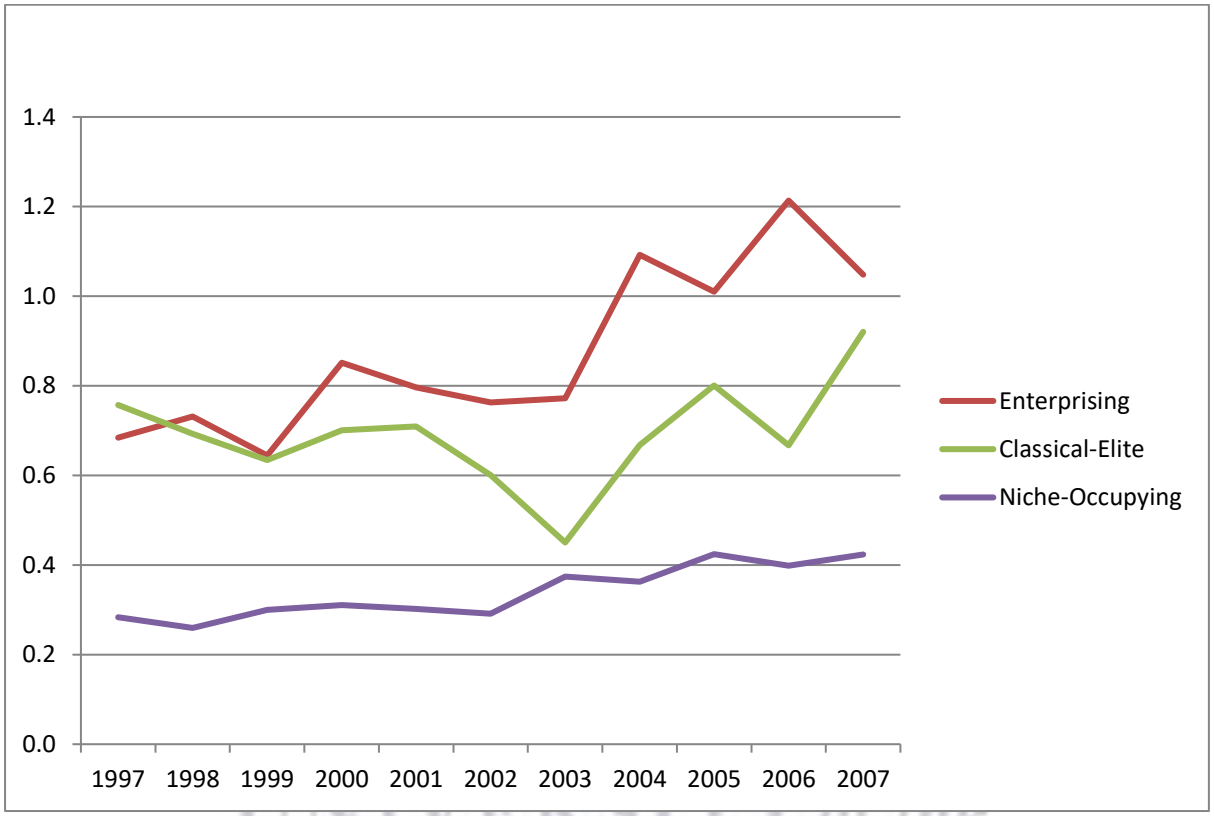


Source: HEMIS database, Department of Education

The second proxy indicator of research intensity measures research publications output per permanent academic. The graph below (Figure 10) clearly shows that, from 1998 onwards, the Enterprising University outperformed the other two universities in this metric. Indeed, the university was the only one among the three to have consistently produced an average of one research publication per permanent academic for the last four years (2004-2007) of the period under review.

Taken together, these two metrics show a greater research intensity at the Classical-Elite and Enterprising Universities, while the Niche-Occupying University made steady progress in its research productivity, albeit starting from a lower base.

Figure 10: Research Publications Output per Permanent Academic (1997-2007)



Source: HEMIS database, Department of Education

Entrepreneurial Orientation of Research Enterprise

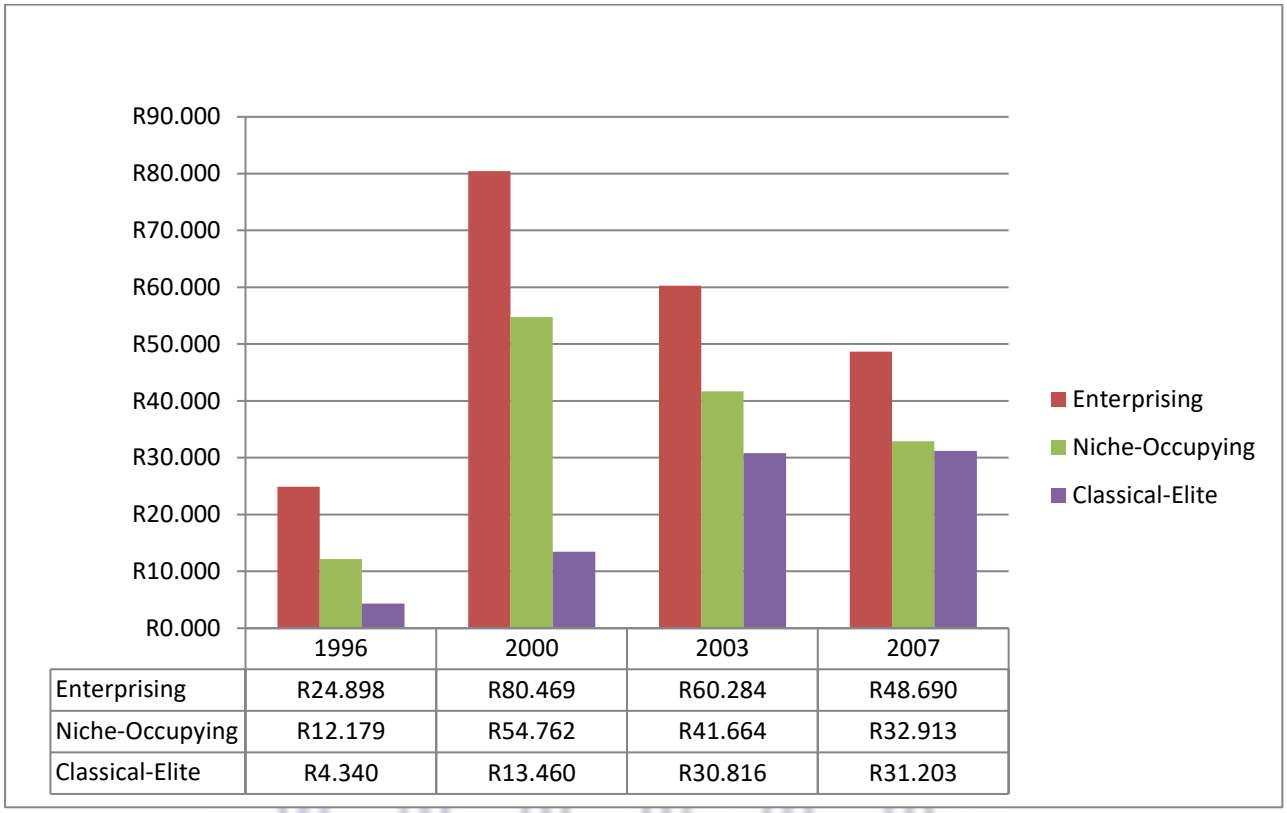
The final indicator in this discussion looks at the extent to which the research enterprise of each of the universities has developed an entrepreneurial orientation. For the purposes of this study, entrepreneurial orientation refers to the collaborative research relationships that a university has developed with industry. In this regard, I have chosen the funding that universities receive through the Technology and Human Resources for Industry Project (THRIP) programme as the proxy indicator for academic-research entrepreneurialism. The THRIP programme, which is a joint venture between the Department of Trade and Industry

(DTI) and industry, seeks to improve the competitiveness of South African industry by supporting and promoting collaborative scientific research, technology development and technology diffusion between industry, higher education institutions, and other science, engineering, and technology institutions (SETIs).[14] Although this is an admittedly crude proxy for the entrepreneurial orientation of a university's research enterprise, it is nonetheless a useful measure of the magnitude of research collaborations and partnerships between universities and research performers in industry.

Although the Enterprising University and the Classical-Elite University had fairly similar characteristics (as depicted in the previous two charts) in terms of the size of their student enrolments, the shape of these enrolments (ratio of undergraduate to postgraduate students), and the extent of their research intensity (at least as far as research publications output is concerned), Figure 11 below shows that there was a significant difference between the two in relation to the extent of their academic entrepreneurialism. The chart also shows that, even though the Classical-Elite University had a far greater research output (see Figures 9 & 10 above), it was less successful than the Niche-Occupying University in obtaining funding through collaborative research initiatives with industry during the period under review.

[14] http://www.thedtic.gov.za/financial-and-non-financial-support/incentives/technology-and-human-resource-for-industry-programme/ (website accessed on 19 October 2022)

Figure 11: THRIP funding per permanent academic for selected years



	1996	2000	2003	2007
Enterprising	R24.898	R80.469	R60.284	R48.690
Niche-Occupying	R12.179	R54.762	R41.664	R32.913
Classical-Elite	R4.340	R13.460	R30.816	R31.203

Sources: Department of Trade and Industry and National Research Foundation

Methods of Data Collection

The main sources of data collection for this study were interviews and documentary materials, both primary and secondary. The use of different sources of data in qualitative research design allows the researcher to conduct cross-data validity checks on the information being gathered for the study (Patton, 1990).

Interviews

Interviews are one of the key methods of data collection in qualitative studies as they enable the researcher to gather data and obtain information relevant to the study from people who are directly involved with the issues under investigation, and are familiar with the contextual

issues to be investigated. The advantage of interviews as a data collection method is undertaken in its 'real world' or natural setting, and the empirical data collected are derived from the informants experiences, and the researcher's interpretations, of that natural setting (Lee, 1999). Interviews provide an opportunity for the researcher to focus the enquiry more pointedly towards the central questions of the study. Furthermore, interviews allow the respondents to provide insights and interpretations to the issues and phenomena under investigation in their own words, something that allows for a rich textual description of the case under investigation (Lee, 1999).

A total of thirty-one interviews were conducted for this study, which is an average of approximately ten interviews per university. The list of interviews conducted at the three universities is appended at the end of this study as Appendix 1. The format of the interviews conducted for this study was generally semi-structured, and sought to strike a balance between a directed and free-flowing conversation (Lincoln and Guba, 1985). A typical format that was followed during the interviews was to initially explore general themes in relation to the overarching topic, and these would then be followed by more specific questions that would be guided by a pre-determined sequence. The semi-structured nature of the interviews provides an opportunity for the interviewer to pursue emerging topics and themes as they arise during the conversation with the informant, and to probe more deeply issues and avenues that a tightly structured interview might not allow for. The interview questions that were used as a guiding framework for the various interviews in the study are attached under Appendix 2.

A distinctive feature of most of the interviews that were conducted was the generally good rapport and high-level of trust that existed between the interviewer and the informants. The main reason for this is that I have had extensive working experience in the South African higher education sector, and have interacted with many of the informants that were interviewed either at a professional level or in the various policy forums and networks that I

have been involved in over the years. The method guiding the selection of informants for the interviews is dealt with in the next section.

Selection of informants

The selection of informants for the case study was guided by stratified purposeful sampling. This sampling strategy is useful when one seeks to distinguish between subgroups or categories from a universe of potential respondents. Stratified purposeful sampling falls under what is also referred to as strategic sampling in the literature, and this is because it is designed to capture the most appropriate or relevant informants for a study, thereby enabling the researcher to make strategic and cross-contextual comparisons from the evidence obtained (Mason, 2002).

The selection of informants also took cognisance of the multi-level nature of the university organisation, where research management takes place at three interconnected, though analytically distinct, levels. The informants were therefore purposely selected not only in order to maximise the range of relevant information that could be obtained, but also to ensure that the variability in the dynamics of research management between these three levels is accommodated through the selection informants at all three levels of university organisation. As such, using a stratified purposeful sample with nested units of analysis also served as a form of data triangulation strategy because the gathering of evidence using different informants within a single case aided the analysis of emerging patterns, the identification of discrepancies within the accounts provided, and the drawing out of contradictions in the data obtained. In this regard, triangulation is not only about validating data through the use of multiple sources, but is also about clarifying meaning through the consideration of diverse perceptions of reality (Stake, 2005).

Depending on the organisational structure of the university concerned, the informants that were interviewed at the executive level of the organisation were the vice-chancellor of the university and/or the deputy vice-chancellor responsible for research. Below the level of the executive management, I strove to select informants from both the natural and social sciences at the level of faculties and at the level of the academic researchers or research groups. In relation to the selection of informants at the level of the research performers, I strived as much as it was possible to interview academics representing research entities or groups whose research leaned towards both Mode 1 and Mode 2. The decision to interview informants from groups involved in Mode1 and Mode 2-type of research was made in order to capture the widest variation of epistemic traditions and research management dynamics among research groups. What is meant by this is that, although there are exceptions, research groups in Mode 1-type of research tend to consist of individuals or small groups working on relatively small grants, and seldom involving collaboration with non-university partners. Research groups working in Mode 2, on the other hand, are more likely to be working in larger teams, supported by substantial external grants, and working alongside researchers or collaborators from entities outside of the university, be these located in government, industry or the non-governmental sector (Gibbons *et al.*, 1994).

Use of primary and secondary material

In addition to the interviews that were conducted, there was extensive use of primary documents such as higher education legislation and national policy documents, national reviews and reports that were produced by statutory entities such as the Council on Higher Education (CHE) and the National Research Foundation (NRF), or by international agencies such as the Organisation for Economic Cooperation and Development (OECD). Other primary materials that were used extensively were university strategic plans, research reports, annual reports, and various other documents that were produced by faculties and research groups. The secondary data consisted of published journal articles and books,

unpublished research reports, occasional papers, conference proceedings, and seminar or working papers.

Approach to Data Analysis

Analytic Strategies

Two analytic strategies were used in this study to analyse the data emerging from the cases (Yin, 2018). The first analytic strategy that was adopted was to develop a descriptive framework that would facilitate the organisation of the data and provide a structure to the discussion of each of the cases for the study. The development of the structure of the descriptive framework was shaped by the main research questions of the study which, in turn, were informed by the conceptualisation of the university as a multi-level organisation. In this regard, the structure of the discussion in each of the cases follows a similar format, starting with research management at top level of the organisation, followed by a discussion on the faculty level, and then concluding with the level of the research performers.

The second general analytic strategy that was adopted was to collate the data obtained from interviews and the relevant documents on the basis of the research questions and the propositions underlying this study. This helped in organising the data that was collected and extracting the relevant responses from interviews and the contextual documents so as to explore the possible explanations to the research questions and examine the evidence that either supports or refutes the propositions of the study.

Analytic Techniques

Pattern matching was used as a technique to help with the analysis of the data from the cases of the study (Yin, 2018). In order to facilitate the analysis of the data, I have developed an analytic schema that will pattern-match the processes or conditions that need to be satisfied, in order for the propositions or anticipated outcomes to be realised. In other

words, the analytic schema will be used in the assessment of the extent to which the evidence presented by the cases supports or negates the propositions of the study for each of the three levels of the university organisation.

Table 5: Analytic Schema to Assess the Study's Propositions

Propositions / **Conditions**	**Proposition 1:** **Strengthened steering capacity at top level of university**	**Proposition 2:** **Strengthened role of dean in research management**	**Proposition 3:** **Tighter coupling of academic activities with strategic objectives of university**
Condition 1	Development of an organisational policy, plan, or strategy to steer the university's research enterprise	Co-option of deans to executive management layer of the university	University has identified research priorities to shape research agenda of academics
Condition 2	Establishment of a designated research portfolio or office at the executive management level of the organisation	Devolution of research management oversight to deans	Use of indicators to monitor alignment of academic activities to research priorities of the university
Condition 3	Development and use of funding policies and other instruments to enhance the strategic coordination of research	Deans have access to resources to steer research agenda of academics	Provision of university funding to academics is contingent on their research aligning with priorities of university

The second analytic technique that was used for the study is explanation building, which is an iterative process that involves a dual procedure that is partly deductive (in that the data from the cases is organised and analysed on the basis of the propositions that were articulated at the onset of a study), and partly inductive because the study seeks to build towards an explanation of the phenomena on the basis of the analysis of the themes emerging from the cases (Yin, 2018). The two analytic techniques of pattern matching and

explanation building were used in combination with the analytic schema above in framing the summative analysis of the cases that is discussed in chapter 8.

A Note on Research Ethics

In order to address the ethical issues that might arise from conducting the research, I have sought guidance from the British Educational Research Association's (BERA) *Ethical Guidelines for Educational Research,* published in 2018[15]. I will now deal with how I have addressed the key ethical issues that are highlighted in the BERA Guidelines (*in italics)*:

Consent:

It is normally expected that participants' voluntary informed consent to be involved in a study will be obtained at the start of the study, and that researchers will remain sensitive and open to the possibility that participants may wish, for any reason and at any time, to withdraw their consent.

With regard to this code, all the participants gave their consent to being interviewed for the study.

Transparency:

Researchers should do everything they can to ensure that all potential participants understand, as well as they can, what is involved in a study.

[15] See www.bera.ac.uk

The emails requesting permission for the interviews set out clearly the purpose and objective of the interviews and what the information arising from the interviews will be used for, namely my PhD research project.

Privacy:

The confidential and anonymous treatment of participants' data is considered the norm for the conduct of research. Researchers should recognise the entitlement of both institutions and individual participants to privacy, and should accord them their rights to confidentiality and anonymity.

Through the use of the institutional typology, I have sought to adhere to the guidelines on privacy by anonymising the universities that have been selected as cases for the study. Further, the identities of the individuals who were selected as interviewees have also been anonymised.

The Humanities and Social Science Research Ethics Committee of the University of the Western Cape granted approval for the methodology and ethics of this research study on 11 July 2019, with Ethics Reference Number: HS19/5/20.

Chapter 5: The Case of The Classical-Elite University

Introduction

This university is a long-established institution with a strong research tradition. As shown in the previous chapter, this is a medium-sized university when compared to other universities in the South African higher education sector, whose total headcount student enrolment between 1997 and 2007 grew from 17 837 to 25 156. Although a historically white university, the university made great strides in transforming its student demographics to the extent that by 2007 the majority of its students (67%) were black, and 51% female. In addition to the metrics of research intensity that were presented in the previous chapter, two further measures of the extent of the classical-elite university's well-established research tradition are that: a) the university hosts or co-hosts six out of the fifteen DST-NRF Centres of Excellence that are located at South African universities, and b) it has the second largest number of SARChI research chairs in the country[16].

From Financial Crisis to Organisational Restructuring

Prior to 1999, the university had been experiencing financial difficulties that were precipitated by a combination of factors, both internal and external to the university. In relation to the internal factors, a considerable number of academic departments were deemed to be unviable following an assessment commissioned by the university's executive. This assessment sought to examine various areas related to the viability of university's academic departments, including their relative cost to the university, their ability to attract students, and

[16] These figures are from the latest available data accessed from the NRF (www.nrf.ac.za) website in November 2022

the extent of duplication of academic programmes offerings between various departments (Fitzgerald, 2003).

In the administrative support and services domain, there were also a number of service units (such as cleaning and catering) that were regarded as not constituting a core activity of the university, or which were considered to be inefficient and thus a drain on the university's resources (B Johnson and Cross, 2004). According to the Vice-Chancellor, all these factors were contributing to the serious financial difficulties the university was experiencing at the time, which resulted in the university having a deficit of approximately R102m by 2002[17].

As discussed in the chapter on the policy and legislative framework, the South African higher education system saw a period of heightened marketisation that saw increasing competition between higher education institutions for fee-paying students, especially during the second period that was characterised by weak policy steering from government. While the more entrepreneurial of the universities exploited this to their advantage, others, such as this university, did not fare so well during this period. For example, an analysis of the higher education management information system (HEMIS) data from the Department of Higher Education and Training shows that the university experienced a decline in its student enrolment between 1993 (18 159 students) and 1998 (17 552), which translated into a reduction in its subsidy income from government because the funding formula at the time was based on student enrolments.

In response to the crisis in funding, and following the adoption of its first strategic plan in 1999, the university embarked on a restructuring exercise whose main objective was to bring about greater efficiency in, and better management of, the teaching, research, and support activities of the university (Fitzgerald, 2003). In order to achieve this objective, the university

[17] From interview with the Vice-Chancellor of the university.

developed a set of strategies whose aim was to strengthen the strategic coordination of the university's academic enterprise. These strategies were targeted at three areas, namely the consolidation of the structure and organisation of the university's academic enterprise (departments and faculties); the reorganisation of the university's strategic management framework; and in to the domain of research, the strengthening of the strategic coordination of the university's research enterprise (Fitzgerald, 2003; Johnson & Cross, 2004).

With regard to the first strategy of the university's restructuring process, the university embarked on a process of consolidation of its academic programme offerings, through a combination of mergers and closures of academic departments. This aspect of the restructuring process saw the university's approximately 100 academic departments being consolidated into 33 newly established schools (Johnson, 2005). This process also entailed the amalgamation of the university's faculties, which reduced their number from nine to five. The justification for the restructuring of the academic organisation of the university was that the academic enterprise had become a large and administratively cumbersome operation, with inefficient management systems that curtailed the university's ability to adapt to a rapidly changing external environment (Fitzgerald, 2003). According to the university's vice-chancellor at the time, the organisational restructuring was necessary because it would result in the 'freeing up [of] resources and energies so that the university can concentrate on its core business, which is to maintain the highest standards of education and research' (Johnson, 2005)

The second strategy of the restructuring process was the reorganisation of the strategic management structure of the university. This strategy consisted of two components: the first was the devolution of management authority and responsibilities from the centre to designated 'responsibility centres' such as the faculties, and support service divisions such as human resources and finance (Fitzgerald, 2003). The second component was the creation of a new strategic management structure at the executive level of the organisation,

the Senior Executive Team. With regard to the devolution component of the strategy, the decision-making responsibilities that were decentralised to the faculty level were in areas such as academic planning, personnel management (including the recruitment, appointment and promotion of academic staff up to the associate professor level), and financial management (Johnson & Cross, 2004). The rationale for devolving managerial responsibilities to deans and heads of schools was that it would promote more effective and efficient management because decisions would be made by managers at the level that is closest to those most affected by the decisions taken. Furthermore, the argument was made that expanding the scope of decision-making responsibility for deans and heads of schools would enhance their learning experience of university management (Fitzgerald, 2003).

It was also understood by university management that the decentralisation of managerial responsibilities to faculties and schools did not imply the abdication by the centre of its responsibility to manage, because the devolution of authority to the faculties was to be counterbalanced through the establishment of a more robust accountability framework between the centre and the faculties and schools (Fitzgerald, 2003). This robust accountability framework was brought about through the creation of a new strategic management structure in the university, the Senior Executive Team (SET). The primary responsibility of the Senior Executive Team was to provide strategic leadership to the university and to make recommendations on matters of strategic importance to the key governance structures of the university, namely the Council and Senate. At its establishment in 2000, the Senior Executive Team was a 11-member structure that consisted of the vice-chancellor, three deputy vice-chancellors (for the academic, research, and partnerships and advancement portfolios, respectively), the university registrar, the executive director for finance, and the deans of the five faculties (Johnson, 2005). The incorporation of deans into the Senior Executive Team structure coincided with their change in status from being elected on a rotational basis by their faculty peers, to being appointed by the university's Council

(after consultation with Senate) for a 5-year term, which was renewable (B Johnson and Cross, 2004).

The establishment of the Senior Executive Team, together with the co-option of deans into this structure, sought to strengthen the executive management's strategic coordination and oversight capacity at the university, and to ensure that such oversight and coordination cascades to the faculty level of the university. In other words, the elevation of deans to executive management level would shorten the feedback loop between the centre (where strategic decisions were going to be made) and the faculties (where the implementation was going to take place). As Fitzgerald has observed, the Senior Executive Team was established in order to serve as a counterweight to the devolution of decision-making authority to faculties and schools, thereby reinforcing the upward accountability framework of the university (Fitzgerald, 2003). In this regard, the creation of the Senior Executive Team is akin to what Henkel, writing in the context of the managerialisation of British universities, has referred to as the 'centralised decentralisation' of university management, whereby a strong leadership structure is established within the context of a devolved management framework (Henkel, 1997).

The other key structure that was created as part of the strategy of enhancing strategic management and coordination was the Strategic Planning and Allocation of Resources Committee (SPARC), which was established in 2006 as a joint committee of Senate and Council. This structure had two main objectives, the first was to steer and monitor the progress made towards the achievement of the goals and objectives of the university's Strategic Plan, and the second to ensure that the allocation of resources was aligned with the university's strategic goals.[18] This committee also coordinated all the university's key budgetary activities before their submission and approval by the finance committee of

[18] Information obtained from the Annual Report of the University, 2006.

Council. The membership of SPARC consisted of the Senior Executive Team and senior academic staff and managers of support service divisions.

The third strategy of the restructuring process focused on the reorganisation and management of the university's research enterprise. A key component of this strategy was the decision by the university's executive to strengthen the strategic coordination through the development of a university strategic plan for research and the concentration of the university's research investments and support in a limited number of areas, which were referred to as research thrusts. This strategy is discussed in more detail in the next section.

The strategies adopted by the university as part of its restructuring process clearly display elements of the new managerialism (Newman and Clarke, 1994). In particular, the introduction of the following three strategies, namely the devolved management framework in which deans played a greater role is faculty oversight, the tightening of managerial oversight of the centre through co-option of deans to executive management team, and the creation of a new structure, the Senior Executive Team (SET), together sought to strengthen the executive management's ability to coordinate and oversee the strategic direction of the university.

Research management at the strategic level of the university

The university's first strategic plan for research (*Strategic Research Plan: 2002-2005*), was developed after the university had commissioned a study on the organisation and management of research at leading universities internationally, especially in Australia.[19] One of the findings to emerge from the commissioned study was that leading research universities internationally generally followed a similar model with regard to how they

[19] From interview with the Vice-chancellor.

organised and managed their research enterprise: there was a research plan that outlined a framework for strategic research management at the university, and a central office that was established to drive the implementation of the plan. Following the recommendations that emerged from this commissioned study, the university developed its first strategic research plan, which spelt out the principles and objectives that would govern the strategic management of research at the university. There were also other supplementary policy documents that were developed to support the university's strategic research plan, namely the *University Policy on Research Entities, Centres of Excellence and Central Facilities*; and the *Policy Framework for Research Management and Research Training*.[20]

According to the vice-chancellor, the development of the university's research plan was intended to address the lack of effective oversight by the executive management over research at the strategic level of the university.[21] This lack of oversight manifested itself in the absence of an accountability framework that would regulate the relationship between the research performing entities (research groups, units, and institutes) and the executive management structure of the university. In other words, the purpose of developing the strategic research plan was to bring the research enterprise of the university within the university's upward accountability framework that was discussed in the previous section. Another objective of the university's research plan was to consolidate what were regarded as scattered research activities of the university under the umbrella of the newly established research thrusts.

The university identified six research thrusts that were seen as areas in which the university had demonstrable excellence or embryonic research strengths, and which the university would target for accelerated development and support. The six research thrusts that were

[20] Copies of these documents were provided to the author by the University.
[21] From interview with the Vice-chancellor.

identified were the following: HIV/AIDS; materials science and manufacturing; mining, mineral resources, exploration and energy; Johannesburg as a global city; development, and; education for a changing society. The research plan further specified nine criteria that would be used to decide the areas in which to develop future research thrusts of the university, among which the following were the most important: the extent to which each research thrust was responsive or relevant to societal imperatives; existence of a critical mass of researchers at the university; the availability of (human and financial) resources and infrastructure; the extent to which the university enjoyed comparative advantage relative to other South Africa universities in the area identified as a research thrust; and the extent to which each research thrust was addressing the so-called 'big questions' in the discipline

The university strategic research plan stated clearly that the development of research thrusts was necessary in helping the university to identify the areas it would prioritise when making strategic decisions relating to the university's research enterprise, and the allocation of its resources. These strategic decisions included the following: making investments in expensive research equipment; leveraging external funding; providing funds for postdoctoral fellowships and for the university's *Distinguished Visitors Programme*; making senior or strategic academic appointments; and establishing strategic partnerships with external partners. The development of research thrusts was also seen as providing unique opportunities and possibilities for attracting high calibre staff to the university, and developing strategic relationships with government, industry, and civil society. The development of the research plan was driven by the deputy vice-chancellor responsible for research.

Another area of managerial oversight that was introduced by the strategic research plan was the provision for the establishment and the bestowal of formal university recognition to various categories of research entities, namely a research programme, research group, research unit, and research institute. The policy on the establishment and recognition of research entities, titled: *University Policy on Research Entities, Centres of Excellence and*

Central Facilities, identified criteria that would be used to designate formal recognition to research entities, and these included the size of the research entity, the academic eminence of the research leader of the research entity, the alignment of the entity's research focus area to the university's areas of strategic priority (research thrusts), and the research entity's potential to attract external funding.

According to the deputy vice-chancellor responsible for research, the introduction of the policies and strategies discussed above was not intended to usurp the control over the research domain away from academics towards the executive, because:

> Research management is not about managing, but is about facilitating research. You can't manage people like researchers. They are independent professionals. If research management implies researcher management, I don't think that will work. But if it is about creating the conditions for researchers to thrive through the development of facilitating mechanisms, then that is fine.

Notwithstanding the sentiment expressed above, however, some of the strategies adopted in the course of the restructuring process betrayed the undeniable logic of the new managerialism. That logic dictates that in order for the university (or any other public sector organisation) to be able to effectively respond to a rapidly changing external environment, it needs to address internal inefficiencies in its organisational structure and administration through stronger coordination from the centre, which would result in a better managed university. In this regard, the rationale of the university's development of the strategic research plan was essentially to bring the research enterprise of the university within the ambit of executive management oversight. This would be accomplished through a dual process of identifying strategic research priorities (thrusts) for the university and the organisation of research into formally recognised entities. The premise underpinning the university's research management framework was therefore that the more the research activities of the university are organised and managed – especially *via* a policy or a plan – the higher the likelihood of achieving better results with respect to management efficiency

and effectiveness. The main shortcoming of the university's research management framework, however, was that the university's research plan was underpinned by a weak resourcing strategy. This was primarily because, as the university was still recovering from the budgetary crisis discussed in the previous section, it did not have a resource base which it could use at its discretion to drive the strategic research agenda. As the vice-chancellor put it:

> The initial idea was that the University would provide funding, something akin to start-up costs, to research thrusts so that they can get going for the first three years. However, the centre hasn't had enough funding available to realise this commitment

Furthermore, according to the vice-chancellor, because the majority of the funds in university's research budget (70%) were directly disbursed to faculties on the basis of their share of the research subsidy income the university obtained from government, the executive was left with very little in the way of discretionary funding with which it could steer the university towards the strategic research priorities as identified in the university's research plan.

Research management at faculty level

A central component of the organisational restructuring exercise was the delegation of some of the management functions that were located centrally to the executive deans, for example the recruitment and appointment of academics and other administrative staff members in faculties (Johnson, 2005). There were also other functions that deans were responsible for that were completely new, and which emerged as a consequence of the shift to a more managerialist approach to university organisation and management. Some of the new roles deans took responsibility for in the devolved management framework were the following: developing a faculty mission statement and a faculty strategy plan; developing and implementing an academic plan for the faculty; preparing and implementing a financial plan for the faculty; promoting and developing marketing, income-generating and fund-raising

activities in order to contribute to the sustainability of the faculty and its component schools (B Johnson and Cross, 2004).

These changes to the role and functions of the deanship elevated the position from being an administrative responsibility to a managerial position with considerable executive oversight. The twin strategies of restructuring faculties and administrative support structures into responsibility units, coupled with the simultaneous changing of the role of the deans into executive managers of faculties, were intended to introduce tighter framework of managerial oversight over these units. The devolution of functions to the faculty level was also accompanied by the simultaneous transfer to the executive level of managerial oversight over the faculties, whereby the deans were co-opted into the Senior Executive Team, which was a newly established structure that was responsible for strategic decision-making and policy coordination at the university.

The university's research management framework was also predicated on the devolution of powers and responsibility to deans as part of the broader strategy of bringing faculties within the orbit of executive oversight. One of the key mechanisms that was used by the university to implement its devolution strategy in relation to the research domain was in respect to the changes that were made in the formula for disbursing the university's research budget. Prior to the shift to the devolved research management framework, the research budget of the university had been controlled entirely from the centre, from the deputy vice-chancellor's office. Following the adoption of the devolved research management framework, the university's research budget (which was approximately R40 million in 2006) was disbursed in the following manner: 50% of the budget was allocated to faculties on the basis of their proportion of research subsidy income the university received from government; 25% covered institution-wide or centralised research services and facilities (for example, the running cost of the university's Research Office, and the Central Microscopy Unit) ; and the remaining 25% was used at the discretion of the deputy vice-chancellor (research) and the

University Research Committee to meet various obligations, for example the recruitment and appointment of post-doctoral research fellows, and the provision of support for the development of young and emerging researchers.[22] The retention of some research management functions at the central level (for example, the administration of the post-doctoral fellows programme and the management of large research grants from agencies such as the NRF) was a source of tension between the central administration and the faculties. This led to the charge (which was made to me in some of the interviews with the deans and academics) that while the objective of the devolution strategy was to promote organisational efficiency, it had actually increased administrative inefficiencies in the light of the duplication of functions at the faculty and central levels of the university administration.

While faculties were free to use their research budget allocation as they saw fit, there was an expectation from the executive management that, when faculties were making decisions on how to spend their research budget allocation, they would take cognisance of the university's strategic research priorities as set out in the university's research plan. The decision not to direct the faculties to use their allocation of the university's research budget to give effect to the university policy on the prioritisation of research was a tacit acknowledgement of the limited influence that the centre was able to exert on faculties regarding their research priorities. Given that faculties were at liberty to spend their research budget as they saw fit, the university research plan therefore functioned more as a symbolic than a hard or directive research steering instrument. It is also important to note that the university did not provide funding from its research budget for the establishment of research entities or research thrusts. Such funds, limited as they were, were provided from the discretionary budgets of the deans, and in some cases, the deputy vice-chancellor's office.

[22] This information was provided by the deputy vice-chancellor responsible for research.

Another key area of change following the devolution process was in relation to the role of deans in research management at the level of the faculty. Prior to the restructuring process, deans played a very minimal role with respect to research oversight at the faculty level, which was limited to the administration of funds allocated by the central research office for postgraduate bursaries and scholarships. The adoption of the new research management framework by the university saw the deans being provided with more wide-ranging responsibilities with respect to research management. For the purpose of this discussion, the most pertinent of these research management functions were the following: overseeing the development of a faculty research plan with clearly defined goals, objectives, and strategies; monitoring the performance of the faculty in achieving the objectives as identified in the faculty research plan; ensuring that the faculty research committee identifies research performance indicators that are appropriate for the disciplines within the faculty (these performance indicators would serve as benchmarks in the appointment, promotion and performance appraisal of academics in the faculty); and ensuring that the university research funds allocated to the faculty are used to support only research-related activities.[23]

The following discussion is based on the interviews that undertaken were with deans (or the deputy dean responsible for research in the health sciences) from three faculties, namely in science, health sciences, and humanities.

According to the dean in the science faculty, one of the most significant benefits of the university's devolution strategy was the reduction of bureaucratic red tape in academic administration. The dean's view was that the changes brought about by the university's new research management framework had enabled academics in the science faculty to focus more on conducting research, rather than being frustrated by the delays in decision making that characterised the previous (centralised) system. The dean also welcomed the

[23] From the university's policy document on research management and administration

devolution of management authority from the centre to the faculties because it provided deans with greater power and influence with respect to the management of their faculty affairs:

> The designation of executive dean means that you run your faculty as if it were a university. You have sole discretion on managing the salary budget, [and] discretion on the operational budgets of the schools.

Much of the research in the science faculty was undertaken in research entities of assorted sizes and prestige, including a DST-NRF Centre of Excellence. The research agenda of the faculty was thus guided and shaped by the scientists leading these research entities, most of whom were formally recognised in terms of the university policy on research entities. So while the dean of the faculty did not have a direct influence with regard to providing strategic leadership to the research programme of the faculty, the power he wielded through discretionary control of resources meant that he exercised considerable influence in strategic decision making (for example, over academic appointments) within the faculty.

The dean regarded his role in faculty management as akin to being the guardian of the university's interests, in that one of his key responsibilities was to ensure that the faculty's teaching and research activities are congruent with the strategic goals of the university.

> The dean's role is to link the faculty's research initiatives to the university's research agenda while also taking into consideration the international environment. You have to place the institution's mission and vision first

This can be interpreted as arguing that the interests of the faculty are subordinate to those of the university. The dean therefore did not perceive or see any role ambiguity or tension in his position, and basically regarded the deanship as an extension of the executive management layer of the university, rather than a defender of the interests of the faculty. For the science faculty dean, therefore, the restructuring process was of benefit to the faculty for the following reasons: first, it reduced the administrative burden of academics, thereby making it possible for them to devote more time to research; second, devolution enhanced

the management responsibilities and the role of the dean in faculty oversight; and third, it forged a closer alignment between the activities of the faculty and the goals of the university, the latter which he saw his role as a guardian thereof.

The dean in the humanities faculty was, in contrast to the science faculty dean, less complimentary about the benefits of devolution. This was primarily because, following the restructuring process, the faculty had to take over the personnel costs of one of the research entities that previously were the responsibility of the central administration (university research office). According to the dean, this development had a detrimental effect on the faculty's financial position, and in particular its research budget.

> Unlike the dean in the science faculty, I do not have access to a discretionary pot of funds. The bulk of the research fund of the faculty goes to paying salaries for one of the research entities that was devolved to the faculty from the central level.

According to the dean, the consequence of its financial position was that the faculty had less resources available to support its research enterprise, resulting in many young emerging academics in the faculty, who had relied on the faculty's research budget to support their fledgling research careers, having had to seek external research grants in order to support their projects. The case of the humanities faculty shows the double-edged sword of devolution strategy at the university, in that it was not only managerial and decision-making authority that was devolved to the faculties, but also the responsibility to carry the costs for the running and resourcing of research units that were previously the responsibility of the central administration. Another faculty gripe with the university's restructuring process was that, compared to other faculties in the university, it had experienced the highest number of closures and mergers of academic departments into schools, as many of its academic department were deemed not to be cost effective or financially viable (Johnson, 2005). Both of these elements and consequences of the restructuring process gave rise to considerable tension between the humanities faculty and the executive of the university.

Notwithstanding the introduction of a devolved research management framework in the university, the dean in the humanities faculty did not have a role in research management. The dean saw her primary role in relation to faculty leadership and management as providing support to young and emerging researchers. The dean also prioritised staff development as her main research management responsibility because, at the time the interview was conducted, only 40% of the faculty's academics had a PhD qualification, which was below the target of 70% that had been set by the university in its Strategic Research Plan. The faculty also did not have a formal research plan or programme that guided the research agenda of its various schools. The dean was also of the view that there was little appetite in the faculty for the research thrusts initiative of the university. Instead, the five schools that constituted the faculty continued with their research activities, which were influenced by the research interests of individual academics or research groups at the various schools, rather than being an outcome of a deliberate strategic exercise that was driven by the dean or the faculty research committee, as this was envisioned in the university's Strategic Research Plan. It is therefore clear that the university's research management framework did not much of an impact either on the organisation of research within the faculty, nor influence the role of the dean in relation to research management.

As in all the universities with a medical school that is attached to a teaching hospital, the health sciences faculty was a large and complex sub-unit of the university. According to the deputy dean responsible for research in the faculty, this was because the majority of the faculty's academics (approximately 60%) were on joint appointments with the provincial health department, which meant that they were partial employees of the provincial department on account of the (clinical) services they provided to various hospitals that were linked with the university. He further stated that, in some schools (for example in pathology and clinical medicine), the entire academic staff compliment was on the payroll of a government agency, in this case the National Health Laboratory Service (NHLS). For those academics in the employ of the provincial government, their conditions of service only

allowed them to spend up to 30% of their time on research, with the remainder of that time spent on providing clinical services in the academic hospitals that were under the provincial health department. According to the deputy dean, under these circumstances the faculty had limited or no authority with respect to how the majority of its academics spent a considerable amount of their time.

> You can only stimulate research by providing a competitive environment where academics can compete for research support. Academics thrive on competition and acknowledgement. However, it is difficult to motivate people when they are overworked, or do not have time to do research

The deputy dean was of the opinion that, until the university had the resources to support its policy on research thrusts, these would not find traction in the health sciences faculty:

> You cannot legislate research priorities; priorities are determined by those who have the resources. In other words, priorities must be underpinned by real financial investment.

As was the case in the humanities faculty, much of the effort in relation to research management in the health sciences faculty was focused on developing research and career opportunities for young and emerging academics, rather than managing the established ones, especially given (according to the deputy dean responsible for research) that most of the productive researchers in the faculty were of advanced age. While the health sciences faculty was also the only faculty in the university at the time with a deputy or assistant dean responsible for research, it had not yet developed a research plan nor addressed the implications of the university's policy on research thrusts for its own research programme.

What has emerged from our discussion is that the introduction of research thrusts as a mechanism through which the university would shape its research agenda and prioritise its support for research does not appear to have gained much traction within faculties in influencing their research programmes and priorities. Furthermore, none of the faculties whose deans were interviewed had taken into consideration the university's research

management framework in making determinations about their internal allocation of research funds. Instead, the primary criteria for the internal disbursement of the research budget allocation at the faculty and school levels was research productivity of academics (especially the publications outputs), with other priorities (such as the development of young researchers, staff development, and the stimulation of new areas of research) also being taken into account.

There is also a mixed picture that has emerged from this overview of research management at the faculty level at the classical-elite university. While the dean in the science faculty saw his role as being a conduit of the executive mandate at the meso-level of the university, his colleague in the humanities faculty did not share this outlook. Further, in contrast to the policy intent of the university's strategic research plan, the deans in all three faculties played a limited role in actual strategic research management. Due to the constraints they were confronted with (for example, with respect to funding in the case of the humanities, and joint appointments with the provincial government in the health sciences) much of the deans' focus with regard to research management was on the development of young or emerging academics. Further, given that the university did not provide funding to promote the establishment of research entities or the promotion of research thrusts in faculties, the research agenda continued to be shaped by the interests of individual academics and research groups in the case of the humanities, or was influenced by a combination of the research agenda of external funding agencies (especially the research councils in the case of the science and health sciences faculty), and the pressing problems or big questions as determined by their respective disciplines.

At the level of the university's executive management, there appears to have been an expectation that the devolution of managerial authority to the deans, coupled with their ascendancy to the Senior Executive Team of the university, would have enhanced the deans' research management oversight at the faculty level. According to the deputy vice-chancellor

responsible for research, the devolution of research management functions and responsibilities has been a success in those faculties with strong research cultures such as science and health sciences.

> In these faculties the deans have just taken over their research management responsibilities and ran with it. The faculties with little or no research tradition like engineering and commerce, law and management faculty are still struggling to find their feet in this devolved structure.

The vice-chancellor also expressed his disappointment with aspects of the devolution process, where, according to his viewpoint, some deans had not been able to provide what he referred to as 'intellectual leadership' at the faculty level.[24] The vice-chancellor's frustration also stemmed from an apparent lack of enthusiasm that some faculties had shown towards the research thrusts initiative of the university.

Research management at the research performing level

The discussion in this section will examine how the university's organisational restructuring process and the changes brought about by the university's strategic research management framework have influenced the dynamics of research production at the level of the academics in the three faculties of the university. Interviews were conducted with senior academics and research leaders from three research entities that are located in the three faculties identified in the preceding section, together with the head of a school with a strong research tradition.

According to the university's research plan (*Strategic Research Plan: 2002-2005, page 4*), the establishment of research entities was intended to achieve the following objectives: to enhance the status and research profile of the university; to encourage the formation of

[24] From interview with the vice-chancellor.

strong research teams through the active promotion of collaborative and multidisciplinary research; and to recognise excellence in research. As already discussed in the previous sections, there was an expectation from the executive management of the university that the establishment of research entities would prioritise research that falls within the research thrusts that were identified in the university's research plan. However, given that the university had not committed resources to support the establishment or running of these entities, the policy on research thrusts had limited effect on influencing the research agendas of academics. This was particularly the case with respect to the leading research groups in the health sciences faculty, many of whom were phenomenally successful in obtaining large grants from external research funding agencies. The success of the health sciences in raising external research funds is demonstrated by the fact that while the university's entire research budget for 2006 was R40 million, the health sciences faculty received over R600 million in external funding in that same year.[25] As the head of one of these research entities in the health sciences put it:

> In terms of funding, the university is an irrelevant player in my [research] unit. It only funds one PhD student/researcher out of a staff complement of twenty-seven postgraduate students and research staff. Out of an annual budget of approximately R6million, the university's contribution towards my unit's costs is approximately R50 000

This head of the health sciences research entity was also critical of the devolution of research oversight to faculties, seeing it as bad for faculty governance:

> It [devolution] has created an additional layer of bureaucracy at the Faculty level, however without decision-making powers, without resources, and without an administrative support structure.

[25] This information was obtained from the health science faculty's deputy dean responsible for research.

A similar criticisms was also made by a senior academic from the humanities faculty against devolved research management framework, which he also regarded as problematic for academics:

> The devolution has created an incredible bureaucratic nightmare for academics, especially those who have external grants since they have to report not only to the head of School and the faculty offers but also to the central research office. The increase in administrative responsibility since the devolution process has been detrimental to academic productivity.

Interestingly, these views expressed by the academics are contrary to the one expressed by the dean of the science faculty, whose contention was that the devolution strategy had gotten rid of bureaucratic red tape. This demonstrates how the effects of a policy intervention are experienced differently by its recipients in an organisation, especially if those recipients are located at different levels of the organisation.

Another criticism of the university's restructuring initiative among researchers, especially in relation to the establishment of research thrusts, was in relation to funding. According to the head of a school in the science faculty, whose research programme fell under one of the university's research thrusts, the school did not receive any additional funding from the university. From the perspective of the head of school, the lack of funding from the university and the absence of an administrative support infrastructure undermined the effectiveness and impact of the research thrust initiative across the university. The head of school also highlighted the ambiguous role of the heads of schools in the research management framework of the university as another source of concern. This was because, while the formal responsibility for research management had been devolved to the deans in the devolved research management framework, in reality the key decisions with respect to the strategic priorities for research in a faculty were made at the level of the school, rather than at the faculty level:

> The devolution process has been a mixed success in that, while many academic management responsibilities have been devolved to the faculties, they end up at the

> school level. However, many [of the] decisions that relate to finances are still made at the central level. This has resulted in tensions between schools, faculties, and the centre about the managerial capacity or competence at the faculty and school level with regard to the management of research

Incidentally, this tension about the locus of decision-making authority with regard to the university's research management framework was also picked up in the CHE Audit report of the institution, which noted that, from interviews the audit panel had conducted with staff at the university, there appeared to be 'insufficient clarity as to whether research responsibility and decision-making authority lies with the School, Faculty or Centre'.[26]

Concluding Observations

The discussion of this case has shown that elements of the new public management doctrine are evident in the strategies that were adopted by the university as part of its organisational restructuring process. These elements are exemplified in the following initiatives that were introduced as part of this process: the devolution of authority to lower levels of the organisation, in this case the faculty deans; the focus on lowering unit costs by improving efficiency and effectiveness through the merging of academic departments into larger schools and reducing the number of faculties; and the conceptualisation of faculties and schools as cost units whose performance would be assessed through the use of performance measures to be monitored by deans.

However, unlike in other higher education systems internationally (for example in Australia, the UK, and the Netherlands), where changes to university governance and management were instigated by new public management reforms that were driven by governments, this case provides evidence of a bottom-up reform process in that the university implemented

[26] The CHE Audit review for the institution was conducted in 2006.

these strategies in the absence of a policy directive from government. In the case of this university, these strategies were introduced in order to address the problems the organisation was faced with at the time, some of which were financial (budget deficit) and others operational (organisational inefficiencies brought about by duplication of services or programmes). In addition, there were also new policies developed to strengthen the strategic coordination of research at the university-wide level, which were borrowed from other organisations. In this regard, this case provides a classic example of the phenomenon of 'lesson drawing' or policy transfer whereby the university drew from the experiences of other universities - mainly in Australia, and to a lesser extent, in the UK - for guidance on how to address the challenges it was facing (Dolowitz and Marsh, 1996). Policy transfer or lesson drawing refers to a phenomenon whereby policy actors borrow policies developed in one setting in order to develop programmes and policy interventions in another setting, often applying the knowledge regarding policy development in the original setting, along with all of the administrative arrangements and institutions necessary for its development (Dolowitz and Marsh, 1996).

The organisational restructuring process also sought to strengthen the strategic coordination capability of the executive management at the university through a dual strategy of, first, devolving decision-making authority to the deans (while simultaneously co-opting them into the executive management layer) and, second, the creating of a new structure, the Senior Executive Team (SET). Taken together, these strategies sought to strengthen the executive management's ability to coordinate and oversee the strategic direction of the university, thereby enhancing its ability of becoming a strategic actor.

The response of the deans to these organisational reforms was mixed: for example, the dean in the science faculty saw the enhancement of his decision-making authority as a welcome development, while the humanities dean regarded the absence of a resourcing strategy for the devolution framework as having been detrimental to her faculty's financial

health. Thus the logic of the university's research management framework, which was premised on upward accountability (from research entity, to head of school-to dean of faculty-to central research office), was undermined by the fact that most of the successful or excellent research entities (especially in the health sciences faculty) obtained their funding from outside the university, something that undermined the dean's authority with respect to influencing or steering their research agenda. This confirms Whitley's argument that the lack of discretionary control over resources limits the university's ability to steer or direct the research activities of academics (Whitley, 2008).

Further, the deans' role in providing strategic leadership to research entities was limited because some of the research entities, for example the centres of excellence and some of the institutes, operated within their own governance framework and management structures, often outside the research accountability framework of the faculty. For example, from the interview with the head of school, it is apparent that it is at the school, rather than the faculty level, that much of the research agenda setting and prioritisation takes place. Thus the greater influence that the heads of schools have is also a function of their proximity to the research performing layer and the bonds of kinship (and solidarity) that the heads of schools have developed with the academic layer, a dynamic that usually afflicts the role ambiguity of the deanship – of being simultaneously an academic leader and a member of the executive (Wolverton, Wolverton and Gmelch, 1999).

At the level of the research practitioners the new research management framework appears to have been largely ineffectual. The biggest criticism regarding the process was in relation to the lack of provision of resources and infrastructural support for the establishment of research thrusts and research entities. This lack of a resourcing strategy to a key university policy led to it being largely a symbolic instrument with regard to steering the research agenda and priorities of the university. This was particularly the case in relation to research entities or individual academics who were successful in obtaining research funding from

outside the university. Another criticism that was levelled by academics at the devolution process was that it had, rather ironically, not simplified or lessened the 'authorisation iterations' that had been identified as a bureaucratic nightmare in the system that was being overhauled (Fitzgerald, 2003). Instead, devolution had added more layers of authorisation because decisions that had resource implications at the lower levels still had to go through various iterations of authorisation (from head of school, to dean, to the central research office), which led to the frustration of academics about the added administrative responsibilities they had to take responsibility for.

Chapter 6: The Case of The Enterprising University

Introduction

In its policy documents and mission statement, the enterprising university has profiled itself as a research-driven university with a wide range of degree and research programmes that have a strong emphasis on fundamental research. Furthermore, the university regarded the advancement of knowledge entrepreneurship and the development of an institutional culture that is strongly entrepreneurial as one of its strategic priorities for research.[27] According to the deputy vice-chancellor responsible for research, the term 'knowledge entrepreneurship' was chosen because it captured the university's twin goals of advancing the frontiers of the production of new knowledge, and of being actively engaged in the application of knowledge for the development of South African society and beyond.[28] A key performance metric that was adopted by the university as a measure of knowledge entrepreneurship was in relation to research or scholarly activity that attracted 3rd stream income. On basis of the analysis of data sourced from the Technology and Human Resources for Industry Programme (THRIP) annual reports for the years 1996 – 2007, the university is shown have been indeed the leader among higher education institutions in the country during this period in relation to its success in obtaining research grants from industry and the private sector.

The university, like the classical-elite university discussed in the previous chapter, is a historically white university that has benefitted from preferential resourcing of the apartheid to develop a research capability. However, unlike the classical-elite university, it had not been as successful in transforming the demographics of its student population, which was still overwhelmingly white (73%) in 2004, ten years after the advent of democracy. With regard to its gender profile, 53% of its student were female in the same year. In 2005, the

[27] From the university's Strategic Plan, published in 2000
[28] From interview with the deputy vice-chancellor (DVC) responsible for research

university had a total enrolment of approximately 22 000 students, with an almost equal proportion of students enrolled in science, engineering, and technology (SET) and in social sciences and humanities programmes.

The strategic coordination of research

Following the adoption of the university's strategic plan by Council in 1999, the university also developed a strategic framework document for research, with the title *Action Plan for Research: 1999-2002*. The strategic management of research as a domain of executive management oversight and responsibility emerged following the adoption by the university of this framework document, whose stated purpose was to identify the university's strategic priorities for research. Prior to the adoption of this framework, the executive management of the university played no role in strategic research management.

The development of this framework document and the subsequent shift in the university's approach to the strategic management of research was precipitated by the publication of a report that was based on a study that was commissioned by the university, which identified shortcomings that were seen as posing a threat to the university's goal of becoming a research-driven institution. Some of the key findings that were highlighted in the commissioned report were the following: university resources were not being utilised efficiently; research funding opportunities were not being exploited optimally; research was not regarded as a priority by all of the university's academics, and; research often happened without sufficient planning or effective management.

According to the deputy vice-chancellor responsible for research, the shift in the university's approach to strategic research management was prompted by the need to develop a coherent organisational response to the shortcomings highlighted in the commissioned study. The challenging facing the university, according to the deputy vice-chancellor, was to

develop a common understanding of what it meant to become a research-driven university. For the deputy vice-chancellor, the university's mission of being research-driven had to be understood as follows:

> Our essence [as a university] is defined by research, there is no doubt about it. And being driven means being managed. The university is now very much a managed [research] environment. It is simply because you now can't just leave it to the coming and going of individuals. It's much more driven. There is huge money coming in from the outside. It means contracts, it means being able to deliver on those contracts. It means having a proper system for research management to take place.

The strategic framework document identified three objectives for the university in relation to achieving its mission of being research driven. The first objective was to give prominence to the research mission of the university through the introduction of what the document referred to as the 'focused research model', which would constitute the basis for setting the research priorities for the university.[29] The second objective was to bring about greater improvement in research quality and in accountability for the use of resources for research, which would be achieved through the introduction of a performance management framework. The third objective of the strategic framework document was to improve research productivity, which would be achieved through better research planning and management, including the devolution of managerial oversight to deans, who would take responsibility for 'directing, co-ordinating, and monitoring' research in their faculties.[30] Considered together, these three strategies constituted what the document referred to as a shift to an intensified research management model, which was predicated on the university's executive management playing a more prominent role with respect to research oversight at the strategic level of the university.

[29] From *Action Plan for Research: 1999-2002*
[30] From *Action Plan for Research: 1999-2002*.

Following a process of discussion and consultation within the university academic community, it was only in 2004, almost five years after its adoption, that the strategic framework document was implemented by the university. One of the initiatives undertaken by the university as part of this process was the restructuring of its academic structure, which included the merging of academic departments and the creation of cross-faculty academic units to promote multidisciplinary cooperation.[31]

This was followed by the introduction of the focused research model, whose aim was to concentrate the research activities of the university into fewer areas of research priority. This saw the university identifying ten research focus areas that were deemed to be areas of 'exceptional strategic importance' to the university, and which would form the core around which the university's research enterprise would be consolidated.[32] The ten focus areas were the following: language and culture within a multicultural society; the knowledge economy; building a new community; a competitive economy; biotechnology; sustainable biodiversity and the environment; the production and provision of food; the struggle against disease and the promotion of good health; technology for industry; fundamental theory, mathematics and complexity.

The ten research focus areas that were identified were framed in such a way as to be broad and inclusive, rather than narrow and exclusive. According to the deputy vice-chancellor for research, the executive management of the university would have preferred a shorter list of research focus areas, but a compromise was reached during the process of consultation with the university community so that the widest possible areas of research activity and interests in the university could be accommodated. Furthermore, the university had stated in its strategic framework document that the objective of the focused research model was to

[31] University Annual Report, 2005.
[32] University Annual Report, 2005

identity areas of research priority that would enable the university to be more selective in the utilisation of its resources. The reality was, however, different when it came to the implementation of this mode because the identification and establishment of the research focus areas was not linked to a resource allocation strategy. According to the deputy vice-chancellor (research), the university would not be able to commit resources to the exercise until a phase of research maturity was reached, which would be achieved only when the initial (ten) focus areas would have been trimmed down into much more focused, and fewer, areas of research priority.

The second objective of the intensified research management model was to bring about greater improvement in (research) quality and resource utilisation through the introduction of a performance management framework. The performance management framework was introduced in 2005 as part of the roll-out of a broader restructuring and 'right-sizing' initiative at the university.[33] One of the main objectives of this initiative was to translate the university's mission and vision statements into measurable goals and indicators. According to the deputy vice-chancellor responsible for research, the university was conscious of the fact that the performance management framework could be applied uniformly across faculties:

> We have to take into account the peculiarities of each field, especially the professional fields such as law and accounting, which do very little research. Similarly, we cannot pressurise the agricultural science people to chase the ratings of the national research foundation; they must be working with farmers in a mode 2 fashion instead of chasing publications.

The performance management framework that was introduced to target research quality improvement was underpinned by measurable goals that were aligned to the university's five vision statements. The five vision statements of the university were the following: excellence

[33] From *Action Plan for Research: 1999-2002*

and knowledge partnerships; capacity building (scientific, technological and intellectual) in Africa; responsiveness; promotion of diversity (with respect to people and ideas); and promotion of Afrikaans as a language of teaching and science. As an example, in relation to the university's vision statement that relates to excellence and knowledge partnerships, the measurable goals on which performance indicators were to be developed were the following: third-stream income; publication outputs; NRF-rated researchers; postgraduate students; and graduation rates at postgraduate level.

The third objective of the intensified research management approach was to improve accountability and increase research productivity through greater involvement of deans in research management and planning. The performance management framework would also be operationalised at the faculty level, with the deans playing a leading role in its roll-out. Both of these aspects of the intensified research management framework are discussed further in the next section.

Research management at the faculty level

In order to discharge its mission of becoming a leading research university, the strategic framework document committed the university to introducing decentralised management as a strategic priority of the organisation. In pursuance of this objective, the university embarked on a reorganisation of its faculty management structure that resulted in the decentralisation of managerial responsibility to the deans. The document further stated that, in order to realise a decentralised management organisation, changes to the role of the dean with respect to academic and research management were necessary, and would require the strengthening of the academic managers' managerial accountability[34]. According to the deputy vice-chancellor (research), the increased managerial accountability under terms of

[34] From document: *A Strategic Framework for the Turn of the Century and Beyond,* 2005.

the devolved management framework meant that deans were henceforth required to sign a contract committing their faculties to achieving a set of annual performance objectives. As the deputy vice-chancellor (research) put it:

> One of the key changes with respect to the role of the dean in the devolved management framework is the shift from *promoting* to *managing* research [my emphasis]. It means that before I sign a [performance] contract, a dean must take responsibility for that contract... [the dean] has to take responsibility for the results

Some of the tasks and responsibilities that were devolved to the deans included the development of faculty business plans, the monitoring of academic and research performance, and the management of faculty finances. In reality though, the implementation by the university of the shift to a managed research environment through the devolution of managerial responsibilities to the deans was uneven across the faculties.

In the Faculty of Science, the devolution of managerial responsibility saw the dean taking a leading role in developing the faculty's research strategy, which was done in consultation with the heads of departments.[35] According to the science faculty dean, he saw his central role in the devolved management framework as facilitating the creation of an environment for academics to flourish while, simultaneously, seeking to align the research programme of the faculty with the strategic priorities of the university. In this regard, one of the challenges facing the faculty was the need to reconcile a key objective of the faculty (to push the frontiers of fundamental science) with one of the strategic priorities of the university (to increase third stream income). This challenge, according to the dean, became a difficult balance to strike, and gave rise to an unavoidable trade-off:

> A consequence of the reliance on external funding sources is that the faculty is now going to focus on recruiting people who are able to seek funds or obtain funds from industry, which will have an adverse impact on 'blue skies' research. There is no doubt about it.

[35] From interview with the dean of the Faculty of Science

In other words, the pursuit of one of the strategic priorities of university, that of 'knowledge entrepreneurship', created a predicament for the dean in the science faculty because the pursuit of this priority had the potential to undermine another equally important strategic objective of the university, namely that of promoting fundamental ('blue skies') research, which had been identified as one of the focus areas of the university. For the dean, the resolution of the tension lay in recruiting people who had amassed experience of working in industry and would therefore be able, relatively easily compared to your traditional academic, to raise third stream income. For the dean, this was a better strategy if contrasted with the expectation that academics whose expertise and experience lay in undertaking fundamental research to suddenly switch to a new role of becoming knowledge entrepreneurs:

> The only way that you are going to generate and grow entrepreneurial academics is to make sure that they grow up in an environment in which academic entrepreneurial activity is a requirement

The dean in the agricultural sciences faculty also had to contend with a similar trade-off, although this was of a slightly different permutation. The dean regarded one of his main responsibilities in research management as that of ensuring that the research undertaken by the faculty addresses the problems identified by the faculty's major clients, who were primarily from the agricultural and forestry sectors. According to the dean, the applied sciences and industry-driven nature of the faculty's research programme gave rise to one of its key dilemmas, which was the reluctance by many of the faculty's clients in its target markets to fund projects whose primary focus was basic research, especially if they (the clients) were not convinced of its direct benefit to their enterprises.

> Being a faculty that is in the applied sciences means that my role as the Dean is to ensure that our research is aligned with the needs of our industry partners. The problem, however, is that industry doesn't want, or is not keen, to fund research at the fundamental level unless it will have benefits, even in the long-term, to industry

And given that the faculty obtained approximately 43% of its research income from its industry clients, the latter exerted considerable influence on the orientation of the faculty's research programme. The key challenge facing the agricultural sciences faculty was therefore one of translation and negotiation, whereby researchers had to find solutions to problems as presented by their clients while, simultaneously, translating or repackaging these problems into research questions that addressed the fundamental questions in their fields. In other words, while it was good for the faculty's bottom line that it was able to attract third stream income, it was also understood that it was through addressing the fundamental problems of science that the researchers would gain prestige among their peers in the academy and beyond, which would also translate into publications that would earn the university subsidy income. The other aspect of the challenge facing the dean related to the need for the faculty to convince its clients to sponsor research (more often undertaken by postgraduate students and postdoctoral fellows) that may not be address the problems they faced in the short term.

The third faculty in this case is in the health sciences, and it faced a different set of challenges to the faculties discussed above. Research management in this faculty was the responsibility of a deputy dean, a position that was created in 2005 as part of the process of academic restructuring that also saw the faculty reducing the number of its departments from 35 to 10.[36] As was the case with other universities whose health sciences faculties are partnered with a teaching hospital, the faculty's academics who were also clinicians were on the payroll of the provincial government's health department. This meant that, in terms of their contracts of employment, their first obligation was to be of service to the patients under their care, rather than to the university. According to the deputy dean responsible for research, this meant that these academics had to undertake their research in their own time, and the situation in the faculty was also compounded by the decision of the provincial health

[36] University Annual Report, 2005.

department to reduce its financial support for research, and emphasising the need for teaching hospitals to prioritise the provision of service, rather than focusing on research. As a result, many of the faculty's clinicians who were research active academics were under pressure to spend more time with patients, rather than focus on research.

> An important change or challenge from the external environment within the health sciences is the fact that the provisional government is no longer interested or seems to be less enthusiastic about funding research; it is now all about providing service. They are now demanding more time from the clinicians to work with patients, rather than spend time on doing research. In the past, they used to be generous in terms of allowing the clinicians to conduct research, but they are now clamping down on that.

Given that many of the health faculty's academics held joint appointments with the provincial health department, there was therefore an element of realism in the faculty's approach to research management. In this regard, the deputy dean had reservations about the extent to which the university's shift to an intensified research management model could be implemented in the health sciences:

> The general problem is that universities have a cookie cutter approach with respect to management, so that, for example, the management systems for research do not take into account the unique challenges of a faculty like ours

The disinclination of the faculty towards adopting the intensified research management model was also reinforced by the fact that academics in the faculty (including the clinician scientists) were already successful in obtaining external research grants, and the faculty had consistently been the most productive at the university with respect to research publications output (Centre for Research on Science and Technology, 2004). According to the deputy dean therefore, there was general indisposition in the faculty towards introducing a new research management framework that could create tensions with academics who were able to be research active despite the very demanding employment conditions they were working under.

Unlike much of the research in the Faculties of Science, AgriSciences and Health Sciences, which was undertaken by scientists working collaboratively in large research groups, the dominant mode of knowledge production in the Faculty of Arts and Social Sciences, mostly constituted of lone researchers working on discrete topics, often on small budgets.[37] Not only was research undertaken mostly by individual academics on small budgets, but there was also very little research collaboration with partners in industry or in the private sector. A consequence of this dominant mode of knowledge production was that most academics in the faculty were not reliant on external funds in order to conduct their research and, as a result, there was not much research administration at the faculty level, in as far this related to the management of external funding and contracts. The dean in this faculty was largely indifferent to the university's strategic management framework, regarding it as being of little utility or relevance to his faculty because it did not help him address the faculty's most pressing needs:

> The exercise of developing strategic management priorities on the basis of the five-point vision statement of the University is not going to have an effect on our work and will not change the way that I manage the faculty since they still take away our money to cross-subsidise the (natural) sciences. We are supposed to contract on these things (performance management indicators). I have told them (the executive management) that I'm not going to do that. Let the people with 10:1 or 12:1 (student: lecturer) ratios do it; we are still struggling to find people to teach our students. We have the faculty business plan to which departmental business plans are aligned, and we will use that to do our best to achieve the five vision statements of the University.

Not surprisingly, therefore, the introduction of an intensified research management model by the university did not gain much traction with the dean in the arts and social sciences faculty, and, as a consequence, there was little research management oversight in the faculty. According to the dean, the faculty had also resisted pressure from the executive management to restructure its departments into schools, which was one of the objectives of

[37] From interview with the dean of the Faculty of Arts and Social Sciences

the university's restructuring and right-sizing initiative. The dean was also critical of the lack of strategic leadership or direction from the university's Senate with respect to the introduction of the intensified research management model at the university, which he felt was being driven from the central administration with little input from the senior academics at the university. The dean attributed the Senate's inability to play a more strategic role with respect to research oversight and management to its lack of control over the use of the university's strategic resources.

The picture that is emerging from this overview of research management at the faculty level is that it found expression in different forms: the devolution of management responsibility for research to deans; the introduction of performance monitoring through indicators that sought to promote the university's strategic objectives; the enhancement of the oversight role of the dean with respect to the faculty's research strategy. What the discussion has shown, however, is that the internal and external conditions in which faculties and their academics operated under elicited vastly different approaches from deans with regard to how, or whether, the intensified research management model was implemented in their faculties.

In the faculties of science and agricultural sciences, the approach to research management was shaped by the need to strike a balance between the contending demands for relevance and responsiveness on the one hand and, on the other hand, the interests of academics to pursue research that addressed the fundamental questions in their knowledge fields. In the arts and humanities faculty, the dean resisted the introduction of the university's research management framework, regarding it as being on little utility in helping him address the challenges facing his faculty. He was also critical of the university's focused research model for lacking a resourcing strategy:

> There is no faculty wide policy with regard to research management in my faculty. Research management can be seen as the identification and provision of support to potential centres or nodes of excellence. There is no point in having a research strategy if there are no funds to support or drive that.

Finally, the health sciences faculty had also shown indifference to attempts by the university to introduce the intensified research management model, given the unique circumstances facing the faculty, especially the joint appointment of its clinician scientists with the provincial health department. In summary, while the strategic management framework of the university sought to strengthen the role of the deans with respect to strategic research management by devolving managerial responsibilities to the faculty level, the actual role that deans played in research management turned out differently in each faculty.

Research management at the research performing level

As was the case at other research-intensive universities in South Africa during the period 1997-2007, the Enterprising University also was caught up in the growing trend whereby hitherto scattered research activities were brought together under some form of umbrella structure, be it within a formally established research entity, or in a loosely organised research collective, usually operating under the auspices of an academic department. However, unlike at the two other universities in this study, the emergence of focused research entities in the Enterprising University was not as a result of the adoption of a university-wide formal policy that sought to regulate the establishment and formal recognition of research entities. Instead, the university's desire was that these research groupings would emerge through the process of undertaking collaborative research within the ten research focus areas of the university. In many instances, research entities such as centres, institutes or units grew organically from the collaborative efforts of academics, and later became formalised with the support of academic departments or faculties, often leveraging this linkage to the university when seeking external funding. Research leaders from four different research entities (one each from the four faculties that were discussed in the previous section) were interviewed at this university.

The first research entity, based in the Faculty of Science, was made up of multidisciplinary teams of researchers from biology, physics, computer science, and mathematics. Notwithstanding its focus on fundamental research, the research group was nevertheless successful in obtaining funding from external sources. According to the research group's co-leader, the group's success in obtaining grants from national research agencies (such as the NRF) and internationally was attributable to the track record of research excellence and international visibility of the group's research leaders in its knowledge field of systems biology.

The leader of this research entity was very critical of the university's attempts to consolidate its research activities through the introduction of research focus areas, arguing that research collaboration that is forged through managerial diktat, however well-meaning it may be, often did not last because it was the product of administrative fiat, rather than an outcome of organic efforts and initiatives led by academics themselves to work collaboratively in order to achieve a common goal:

> The [research] focus areas are very much window-dressing because they're not saying very much, and nothing has happened with that. They are not worth the paper they are written on... Forced collaboration from the top, which typically has been through the formation of schools that are supposed to cut across departments or disciplines, doesn't work. [It] will work only [when] driven from below, from the academics themselves. The successful ventures are the ones that were not forced from the top. University administrations have become far too powerful and therefore think that they can organise everything.

The comment above illustrates the level of scepticism among some senior academics regarding the utility or wisdom of the intensified research management model and the research focus area initiative. It also appears that while the deputy vice-chancellor (research) had indicated to me that there was a process of campus-wide engagement on the formulation of the research focus areas, there was a lack of ownership of this initiative at the level of the research academics. The leader of this research entity was also dismissive of

the efforts by the university's management to enhance its oversight over the university's research enterprise through the introduction and use of performance indicators, deeming these as ineffectual instruments for motivating academics to increase research productivity:

> At the level of the research group, nobody is thinking about the right-sizing initiative; all we think about are projects and publications. Nobody in this department thinks of indicators when they are doing their work; people here worry about science, not indicators. At any rate, if you want to be the best [scientist], you would do well on most of those indicators.

The second research entity that was the subject of enquiry is in the health sciences faculty. In addition to being generously funded through the DST/NRF Centres of Excellence programme, this research entity, which had an established international profile and record of research excellence, was also successful in obtaining external funds for its research programmes. The director of the research entity was dismissive of how the research focus areas of the university were determined, arguing that the university management chose the route of minimum possible resistance from academics by formulating the focus areas as broad as possible in order to accommodate the widest possible number of research activities or groups. He was also of the view that the university opted to develop the themes for the research focus areas around the fields where there was already established excellence in the university, so as to avoid having to face resistance from those strong research groups who would have fallen outside a narrower focus of research areas. In other words, the selection of research focus areas was seen not to be taking risks with research areas that were not yet well established but were promising. According to the director of the research entity, the formulation of the university's research focus areas was a conservative rather than an inspired, forward-looking, approach to setting priorities that would shape a future-focused research agenda for the university.

Expressing sentiments that were in accordance with those of the leader of the research group from the science faculty cited above, this research entity's director was also of the

view that the university management's attempts to steer the research agenda of research groups through the introduction of research focus areas was an exercise in futility, because:

> …there is no way that the executive management of the university can steer the research agenda because we are the research academics, and they are not. And if they decided that my research doesn't fall within their research focus areas, it wouldn't make much difference to me since, anyway, most of my funding comes from outside the university.

Interestingly, as shown by the comment below from a senior administrator at the university's research office, there was also a realisation at the senior level of the university of the limited capacity the centre had to steer the research agenda of the leading academics:

> To the extent that the university becomes reliant on outside money for research, it will be reluctant to use internal control over those staff members bringing in the money, because they become extremely strong star-players, like in a soccer team. And you can't steer them too strongly because they might object and then leave

The third research entity from which interviews were undertaken at this university was from the agricultural sciences faculty. This entity was unique in that it was established as a research institute that was a joint initiative between the university, industry, and government, to conduct research that would be of benefit to the industry relevant to its field of expertise, which was in wine biotechnology. The research entity was initially established outside the formal academic structures of the university, and was later incorporated into the faculty of agricultural sciences following the intervention of an external but powerful stakeholder in the industry that its research was located. This industry stakeholder, which was a major funder of research in the entity's area of expertise, implored the university to play a greater role in ensuring the sustainability of the research institute. The funding arrangement following the research entity's incorporation into the formal structures of the faculty was that the research entity would continue to rely on external sources for the funding of the majority of its research projects, and the university would cover the salaries of its professorial staff and, with assistance from government, also provide support for the purchase of expensive

research equipment. Because this research entity was the first in the country conducting research relating to problems in its relevant industry, it had a well-established and fairly strong funding base that ensured its sustainability.

The structure of the research programme of the institute was such that it balanced the interests of individual researchers with those of its clients in industry. According to the institute's director, this approach to knowledge production was the outcome of an 'organic process' whereby the selection of the institute's research projects was guided by the need to identify the most relevant problems in industry and translate those into topics that also sought to investigate the fundamental questions in the institute's fields of specialisation. In this regard, the institute designed its research programme on the basis of meeting two criteria that were fundamental to its mission: namely that of industry relevance (which was the basis of the institute's founding mandate) and intellectual curiosity (pushing the boundaries of the knowledge field). It is perhaps not surprising that, given its unique position in its field of research, its strong funding base and support from industry, and that its area of research fell under one of the university's research focus areas, the director of the entity did not have any issues with regard to the university's approach to strategic research management.

The fourth research entity was a multidisciplinary research unit in the Faculty of Arts and Social Sciences, which also collaborated with researchers from the Faculty of Engineering. The research entity brought together researchers from African languages, experimental phonology, phonetics, and electronics engineering. The research entity was established in 2005 following the adoption of the research focus area framework by the university. Prior to its establishment as a research entity, there had been a long-established, but informal, collaboration between the researchers from these different fields, whose goal was to develop the field of human language recognition and speech processing technologies into one of the university's areas of research expertise.

As the research entity did not receive much funding support from the university, it was a small operation that relied mainly on part-time researchers to carry out its research programme. There was lack of support from the university despite the entity's research programme falling in a field that was considered to be of strategic importance to the university's research profile.[38] The research projects that were conducted by the centre were primarily applications-oriented and were largely determined by the needs of industry and government. The centre's director acknowledged that there was scope to improve the entity's focus on more fundamental research, given that the centre's research output was negligible. In this regard, while the centre met the university's objective in relation to 'knowledge entrepreneurship', it had not developed a sufficiently strong profile in basic/fundamental research in its field that would have enabled it to enhance its academic reputation within the university. In other words, this research entity struggled to translate the applications-driven research projects that it was undertaking into a strong programme fundamental or basic research.

Concluding observations

The discussion has highlighted the key elements of a strategy that sought to enhance the central university management's oversight over the research enterprise of the university. While the overall strategy sought to strengthen the steering capacity of the central management of the university with respect to strategic research management, its effectiveness was undermined by two factors. First, the formulation of the focus areas was so broad as to render them ineffectual as a viable steering instrument. The second factor that undermined the research focus area initiative was that the university did not commit any resources to the initiative. As a result, the exercise in introducing a focused research

[38] From interview with the director of the research entity

management model appears to have been primarily symbolic in its intent, as did not result in the consolidation of the university's research agenda in areas deemed to be of strategic importance to the university. The intervention seems to have been intended more as a signal of the university management's desire to see more research consolidation being undertaken (perhaps some time in the future), rather than a concrete strategy whose outcome would result in the university investing its resources in only those (fewer) areas that were deemed to be of strategic value to the university.

At the level of the faculties, the challenges faced by the deans in implementing one of the university's key goals (that of knowledge entrepreneurship) highlight the tension that arises in seeking to pursue research that is of relevance to industry (thereby attracting external or third-stream income) and that simultaneously pushes the boundaries of fundamental science. While in the agricultural and health sciences faculties this tension was less pronounced, primarily because the research questions in the health and agricultural sciences fields are shaped by real world problems, the dean of the Faculty of Science has argued that seeking to achieve the one objective (attracting third stream income by being responsive to industry needs) would have a detrimental effect on an equally important objective (that of pursuing blue skies research) because the academics working in fundamental science did not have the interest nor the inclination in undertaking applications-oriented, and therefore revenue generating, research.

None of the deans that were interviewed seem to have bought into, or showed strong support for, the new research management framework of the university. While the conditions and contexts were clearly different between the three faculties, the deans appear not to have had a strong affinity with the ideals of the executive. This is probably because, unlike in the case of the Classical-Elite university, the deans at this university did not form part of the executive management of the university, but had one representative in a structure called the

'Rector's Management Team'. As a result, deans were not regarded as an extension of the university's executive management and therefore retained strong loyalties to their faculties, as expressed by the sentiments of the deans from arts and the health sciences faculties.

At the level of the researchers, the university' initiative to introduce research prioritisation and a performance indicators framework was met with indifference. Leaders of research groups in the science and health sciences faculties regarded the research focus area initiative either as forced collaboration from the top or more of a symbolic intervention ('window-dressing' is the term that was used), rather than a serious attempt in promoting or being supportive of the university's research enterprise. As far as the scientists that were interviewed were concerned, their primary objective as researchers was to produce good science, and not to perform well in relation to targets set by the university management in its performance indicators framework. What constitutes good science is not dependent on the judgement of university managers, however, but is an assessment made by the researchers' scientific peers in the various epistemic communities of which they are a part. In the case of the established and top performing research groups, the research focus area and performance indicator initiatives were also seen to be of little consequence, because the university's contribution to the funding of these groups' research projects was minimal, and also because these groups already exceeded the research productivity benchmarks set by the university – indeed, the leaders of the research groups in the science and health sciences faculties who were interviewed for this study were NRF A-rated scientists.

Thus, the extent to which the research entities at this university were able to assert their academic and professional autonomy – with respect to defining and shaping their research agenda - is a function of the academic reputation and prestige they enjoyed on the basis of their record of research excellence. It is also a product of the research entities' ability and success in obtaining research funding outside, and independently of, the university. This

observation echoes insights from resource dependency theory whereby these research entities, having been successful in obtaining external funding independently of the university, were able to lessen their dependence on the university for the funding of their research programmes, thereby providing themselves with greater discretion in shaping their research agenda (Pfeffer and Salancik, 1978). This case amply illustrates the difficulties or obstacles faced by the university management in attempting to mobilise support and direct the academics' commitment towards achieving the university's objectives, thereby undermining its ability to become a strategic actor.

Chapter 7: The Case of the Niche-Seeking University

Introduction

The Niche-Seeking University was established in 2004 following a merger between a historically black and historically white university. This university was part of a series of institutional mergers that took place in the early 2000s following the proposals of the National Working Group that was appointed by the Minister of Education to provide advice on the restructuring of the higher education system. Based on its total enrolment of approximately 40 000 students in 2004, which were spread across its three campuses, the merged university can be considered to be a large university relative to other universities in the system. With respect to its research productivity and outputs, the Niche-Seeking University occupied the middle-tier universities during the period of this study.

Notwithstanding the merger guidelines issued by government, which required the newly merged institutions to develop a new identity that was commensurate with their new missions and goals, the Niche-Seeking University that was the outcome of a merger largely retained much of the research mission and agenda of the historically white university. There are a number of reasons for this, but the most relevant for the purposes of this study is that the historically white university was the better resourced of the two institutions in many respects, and accounted for most of the research activity between the two institutions prior to the merger. An example of the gulf in research productivity between the two institutions is that in 2000, the research publications output at the historically white university was 202 research publication units, while at the historically black university there were only 4 research publications units for the entire university.[39] As a result, this focus of discussion in this case is, in essence, on the initiatives that were introduced prior to the merger at the

[39] These figures were obtained from the Higher Education Management Information Systems (HEMIS) of the Department of Higher Education and Training.

historically white institution, which then came to shape the mission, profile and organisation of research at the merged university.

The strategic coordination of research

Prior to the merger of the two institutions in 2004, the historically white university embarked on a process of consolidating its research activities and postgraduate programmes into research focus areas. The stated objective of this exercise, which commenced in 1997, was to build a culture of research at the university, and to improve the quality and quantity of its research output (Verkleij, 1997). According to a senior administrator (senior director for research support) that was interviewed, prior to the introduction of research focus areas, the research enterprise at the university was characterised by thinly scattered activities that were largely unstructured and uncoordinated. Furthermore, as shown in the comparative overview of the cases in the research design chapter of the study (see Figure 10 and Figure 11), the combined research output of the two universities started from a low base. The reorganisation of research activities into more focussed research entities was driven by the desire to transform the university from being an institution that was primarily oriented towards undergraduate education, to one that sought to strike a balance between teaching and research (Verkleij, 1997).

According to the senior administrator at the university, the introduction of research focus areas was prompted by signals from the Green Paper on Higher Education Transformation (released in December 1996) that the funding of university research in the post-apartheid higher education policy regime would promote research concentration and selectivity as a means of improving efficiency in the higher education system. Even though the Green and White Papers did not make any specific proposals with regard to how funding as a policy instrument would be used to promote research concentration and selectivity, nor provide a time frame for its implementation, the university nevertheless embarked on this exercise,

thereby becoming the first university in South Africa to introduce research prioritisation long before it became fashionable among other higher education institutions.

According to the executive director for research and innovation,[40] prior to the university deciding on areas of research priority and the subsequent establishment of research entities, a research quality assessment exercise that consisted of an internal self-evaluation and an external audit was undertaken by a panel of national and international experts. Following the research assessment exercise, the university embarked on a process that resulted in the identification of twelve themes or focus areas on which it would develop its research endeavour, which incorporated areas or fields where the university had existing or nascent research strengths. The focus areas that were agreed to were organised into twelve research entities that were established in 1998, and which were headed by research directors.

As part of this exercise, the university also undertook an appraisal of the strategic value, relevance, and viability of the identified research themes to the university and the country, and an assessment of the existence of sufficient capacity and complementarity among academics to form research entities that would undertake research on the identified research themes. According to the executive director responsible for research and innovation at the university, the comprehensive nature of the process that led to the identification of research focus areas meant that most, if not all, of the existing and potential areas of research excellence were accommodated within the scope of the research entities that were established in 1998. The executive director articulated the university' position as follows:

> Because the focus areas were developed around excellent research, the expectation of the university is that excellent research is conducted within the focus area, or should be within the focus area. This means that the university only invests its funds within the focus areas. The university actively discourages stand-alone

[40] Unlike at the other two universities in this study, the niche-seeking university did not have a deputy vice-chancellor position but an executive director for research and innovation.

> research, so efforts are made to encourage people to construct their research interests around research focus area themes.

The process of reorganising the university's research enterprise into research focus areas was initiated and driven from the centre by the executive management of the university, who were assisted by international consultants from the Netherlands. Indeed, the quality assessment process that informed the identification of research focus areas closely resembled the research quality assessment protocol used in Dutch universities (Verkleij, 1997). In this regard, this case provides yet another example (as was the case with the Classical-Elite University) of lesson drawing or policy borrowing and transfer, whereby a South African university introduced an organisational restructuring exercise or initiative on the basis of a policy intervention borrowed from another (international) context (Dolowitz and Marsh, 1996).

As was also the case at the Classical-Elite University, the research reorganisation process at this university was part of a broader academic restructuring exercise that saw the consolidation of approximately seventy-five academic departments into thirty-five schools. Another important aspect of the reorganisation was the creation of a division for research development and support, headed by a dean, whose main responsibility was to provide support to the newly established research entities. The dean of research position was later upgraded to an executive director position (responsible for research support and innovation), a position that was equivalent to that of a deputy vice-chancellor (Geertsema, 2000).

The approach to the strategic coordination of research at this university is outlined in one of its key documents, titled: *The Strategic Plan for Research and Innovation.* According to this document, a special committee of Senate, the Institutional Committee for Research and Innovation, was established to guide the strategic agenda and direction for research at the university. The remit of this committee was to provide Senate with advice on various

aspects of research development and support at the university, including research policy development, planning, and financing. The committee was chaired by the university's vice-chancellor, and its members included all the members of the university's executive, the directors of research entities, the executive director for research support and innovation, the deans of faculties, and the university's leading researchers (based on their NRF rating). This committee was basically responsible for developing the policy framework and strategic research agenda for the university, which would then be implemented by the office for research support and innovation.

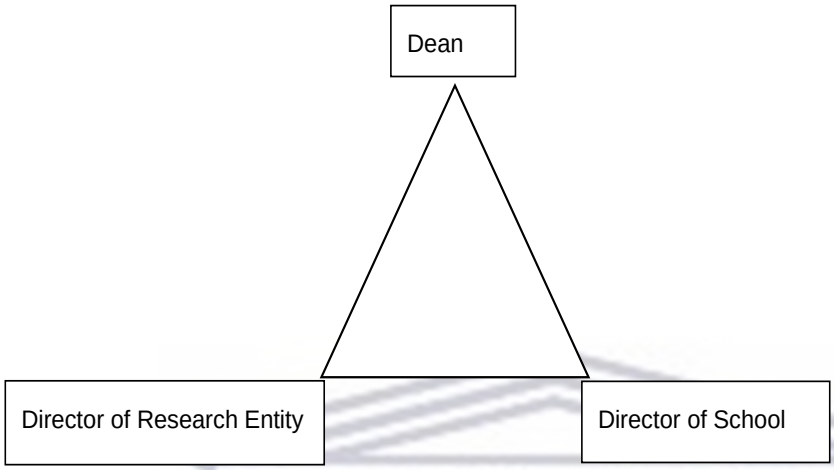
There was also a second special Senate committee that was established, whose remit was to coordinate the periodic self-evaluation exercise that each of the university's research entities had to undertake every two years, and to consider applications for the establishment of new research entities at the university. The implementation of the university's research policy, the allocation of the strategic research fund, and the provision of management support to the research entities, were the responsibility of the executive director for research and innovation. According to the executive director, a strategic research fund was created by the university to support the development of research entities, and included the financing of the position of the research director and a small support staff for all the research entities for a period of two years. What is remarkable (and probably unique within the South African higher education system) about how this process unfolded at this university was the central role that was played by Senate in driving and overseeing strategic research management in the organisation. It is also the only university among the three cases where decisions relating to the strategic coordination of the research agenda and direction of the university were made by a committee of Senate. The executive management of institution was responsible for the execution of these decisions, rather than the determination thereof as was the case in the other universities.

The management of research at the faculty level

As part of the academic restructuring exercise that accompanied the process of research consolidation, the university adopted a decentralised model of academic organisation and administration. In this model, undergraduate education and coursework postgraduate programmes became the responsibility of the newly established schools, and the research activities of the university, including the research-focused masters and doctoral programmes at postgraduate level, became the responsibility of the twelve research entities.

In addition, as part of its academic reorganisation exercise, a new governance model was by the university adopted at the faculty level. In terms of this governance model, the deans took overall administrative and managerial responsibility for the faculty as a whole, the directors of research entities were in charge of the organisation and management of the research and (research-focused) postgraduate programmes in their respective research entities, and the directors of the schools oversaw the academic (mostly undergraduate and taught postgraduate) programmes offered by their schools. The main responsibility of the dean was to ensure that the teaching and research programmes of the faculty were aligned with the strategic plan of the university. Deans were also responsible for disbursing the faculty's budget to the schools and the research entities. This model of academic governance at the level of the faculty, which was also referred to as the 'management triangle' by the university, is depicted by the diagram below.

Figure 12: Management triangle model of faculty governance



Source: Association of Commonwealth Universities, 2004

A report of an external review on research quality at the university, which was conducted by the Association of Commonwealth Universities (ACU), noted that there was an 'inherent structural tension' in the decentralised academic administration model adopted by the university (Association of Commonwealth Universities, 2004). This was because, in terms of the university's decentralised human resources framework, academics who were involved in research projects that were undertaken under the auspices and management of the research entities were on the payroll and administrative oversight of the schools, and rendered their services to research entities subject to the approval of the director of the school that employed them. In other words, although the management triangle model depicted in the diagram above appears to convey an equal status between the director of a research entity and that of a school, the reality was that the director of a school had more leverage over the availability of academics to conduct research, which was undertaken by research entities. A consequence of this faculty level governance model was that, because academics were in the employ of schools and sub-contracted to research entities to do

conduct research, directors of schools exercised indirect control over a resource - the time academics had available to conduct research - that was of critical importance to the research entities. According to the ACU review report, because the directors of research entities were deemed to be accountable for research productivity, even though they did not have the authority to recruit and appoint the academics to conduct research, this gave rise to a structural tension that resulted in the 'operational disempowerment' of the research entity director in relation to the director of a school (Association of Commonwealth Universities, 2004).

According to the executive director responsible for research and innovation, the resolution of this inherently conflict-ridden faculty governance framework was dependent on the personal relationships between the directors of research entities and directors of schools. In other words, in the absence of a formal mechanism to address the structural tension inherent in the university's decentralised management model, it was left to the directors of the schools and the research entities to forge relationships of mutual trust, and develop an awareness that their respective responsibilities served a higher, institutional, purpose. There was also an expectation that the dean would play a role in mediating the conflicts that could arise from this structural tension. According to the executive director for research and innovation, this would be accomplished through a mechanism - which he referred to as a 'task agreement' – whereby, on an annual basis, between the directors of research entities and the schools would be engaged in a process of negotiation to determine the availability of academics to undertake the respective tasks of teaching and research within their faculties.

The role of the dean at this university was mainly to oversee and manage the administrative aspects of faculty management and leadership. Deans had therefore limited influence in strategic decision-making over academic matters as they did not have executive authority over the teaching and research functions at the faculty level, and were also not part of the executive management structure of the university. The role of deans with respect to

research management was limited to providing funding (from the faculty budget) for the small pockets of research activity that continued to exist outside the domain of the research focus areas.

Research management at the research performing level

Following the academic reorganisation, the research enterprise of the university was consolidated into four types of research entities, starting with a research niche area at the bottom or entry level, followed by a research focus area, a research unit, and a research centre of excellence at the apex of the typology (the last entity not to be confused with the DST/NRF Centre of Excellence). The criteria used by the university to make distinctions between the types of research entities were research output (which was calculated on the basis of publications in DHET accredited journals), and the proportion of research income that the research entity obtained from external sources. Once established, research entities were required to undergo an internal evaluation every two years (overseen by the aforementioned committee of Senate), and an external review every six years (conducted by local and international experts), at which stage a decision would be taken as to whether they retained or lost their designation, or were promoted to the next level.

The entry-level research entity, the research niche area, was defined in the university's research policy as an emerging research programme that would be earmarked for research capacity development. The main performance criterion for the continued funding of a research niche area was that it would need to achieve an average research output of at least 0.5 articles (DHET accredited) per senior lecturer equivalent academic/researcher per year. Niche areas were also given a period of five years in which to establish themselves. Thereafter, they were expected to have fulfilled the criteria for elevation to the next level, namely the research focus area. The performance criteria for the research focus area were that it would achieve a target of at least 0.75 articles per senior lecturer equivalent

academic/researcher per year, and raise at least 50% of its research income from external sources. Like the research niche areas, research focus areas were expected to have developed sufficiently over a period of five years to qualify for promotion or elevation to the next level, namely that of a research unit.

The third type of a research entity, the research unit, was described in the university policy as a significant, multidisciplinary, and transdisciplinary research programme that would have been recognised nationally as an entity of research excellence. Research units were expected to obtain at least 60% of their research income from external sources, and be able to demonstrate evidence of significant research output, whose target was set at an average of at least 1 article-equivalent per senior lecturer equivalent per year. While there seemed not to be an expectation in the university policy that research units would graduate to the next level (to become a research centre of excellence), the policy stipulated that the status of a research unit would be reviewed every 10 years.

The research centre of excellence stood at the apex of the university's research entity model, and was described by the university policy as an internationally recognised entity that would obtain at least 75% of its research income from external sources, and produce an average of at least 1.2 articles per senior lecturer equivalent per year. There was no relationship (in status or recognition) between the university's research centre of excellence research entity and the DST/NRF Centres of Excellence initiative that is managed by the National Research Foundation.

By the end of 2007, the university's research enterprise was organised into fifteen research entities, which consisted of two research niche areas, five research focus areas and eight research units. No entity had yet reached the status of a research centre of excellence. Thirteen out of the fifteen research entities were located at the campus of the formerly historically white university of the merged institution, with the remaining two at the historically

black university. This should not be surprising, given the historical paucity of research at the historically black university prior to the merger that was mentioned earlier.

One of the key goals of the university, as espoused in its strategic plan, was that of becoming a 'Mode 2 University'.[41] From interviews conducted with the executive management at the university, becoming a Mode 2 university was understood to mean the development of partnerships with the private sector or the undertaking of collaborative research that leads to patents or some form of commercialisation of research output. Curiously, the university management's understanding of Mode 2 knowledge production was focused primarily on the undertaking of research that is driven by a commercialisation or application of knowledge (the term used in university documents) motive, rather than being about the process of knowledge production, in particular the inter- or transdisciplinary feature of this mode of knowledge production (Gibbons *et al.*, 1994). This narrow understanding of Mode 2 was reinforced in the interview with the dean of the natural sciences faculty, who saw Mode 2 research as a saviour for research entities in the fundamental or theoretical sciences who, at the time, were struggling to raise external funding.

One such research entity facing this predicament was undertaking fundamental research in astrophysics, and was also the strongest research entity at the university in terms of its research profile and prestige.[42] The research entity obtained its funding mainly from the NRF and from the university's strategic fund. Although the research entity was undertaking research in one of the national priority areas of the government's research and development strategy (namely astronomy and earth observation), it was struggling to meet the university's target of generating at least 60% of its funding from external sources. As a result, the

[41] From the university's Strategic Plan, 2016.

[42] The university's two (NRF) A-rated scientists in 2006 were in this research entity. In the same year, the research entity also had one P-rated scientist, and three of the university's eight B-rated scientists.

research entity was under pressure to undertake research that generated external income. According to its director, this pressure placed the research entity in an untenable position:

> We may soon find ourselves in a situation where we have to scale down our activities [in fundamental research] and do something that is financially lucrative, or find something else to do. The university cannot, on the one hand, boast about its A-rated scientists, who are all in our group, and then, on the other hand, say that they must pay for themselves

The quotation above captures the tension between excellence and relevance (when interpreted to mean not only responding to external needs but also benefitting financially from one's research activities) that research entities undertaking fundamental research at the university were confronted with. Given a research policy that expected research units to become largely self-sufficient in terms of research income, this research entity presented the university with a conundrum because, while it was struggling to generate its own funds, it was also the most productive and prestigious research entity at the university. The research entity did, however, exploit its position as the premier research unit at the university as leverage in resisting the pressure to conduct research that was oriented towards industry needs or commercial applications.

In contrast to the research unit discussed above, a multidisciplinary research entity in the Faculty of Arts was able to generate a considerable share of its research income from its three research programmes (in literary studies, applied and sociolinguistics, and human language technology) that were, according to its director, a combination of Mode 1 and Mode 2 research. The research unit consisted of approximately forty researchers whose academic background was in literary studies, computer science, linguistics and computational linguistics. According to the director, 70% of the contract research that was undertaken by the research entity was structured such that it addressed or informed new research questions in the unit's major field of study, namely linguistics. And while the researchers undertaking Mode 2 work generated considerable funding for the research entity, the unit's

research programme created space for researchers who were interested in basic (Mode 1) research to continue to focus on the fundamental questions in their areas of interest. This strategy seems to have paid dividends for the research entity because in a review of its research programmes that was conducted by an international panel in 2004, the research entity scored highly (4 out of 5) with respect to both the scientific quality and the relevance of its research.

One of the key issues that arose with respect to the introduction of the research entities model at the university is the fate of academics whose research fell outside of the university's twelve research focus areas. While there was recognition in the campus community of the benefits of the research entities model to the development of research capacity at the university, in particular the extent to which the university used its own resources to invest in this initiative, there was also criticism of the model among some of the academics who were interviewed. The first criticism was the extent to which the model created an impression that there was no life or future for those academics wishing to undertake research in areas that lay outside the formally recognised research entities of the university. According to the director of a research entity:

> Freedom of choice to conduct research outside the research focus areas is stifled at this university. Consequently, a number of researchers have fallen by the way side as they couldn't find themselves fitting in into the model.

According to this director, this may have had the unintended outcome of stifling whatever nascent research that was flourishing in those areas that found themselves outside the approved research entities. This was an issue that was overlooked by the university as there was no mechanism in its research strategy for stimulating new areas of research that were outside the existing research entities, even though the university committed itself to supporting the development of new research entities through a centrally controlled seed funding.

In a related example to the issue above, an external review report from the Association of Commonwealth Universities found that a research entity undertaking research in a particular field in the Faculty of Health Sciences was only responsible for half of the research that was conducted in that same field at the university, with the rest of the research being undertaken independently of the research entity. This example seems to undermine the assertion made by a member of the university's executive management in an interview with me that the establishment of research entities had resulted in the absence of any significant research activity outside the research entities. This example also served to highlight the limitations of the university's strategy of seeking to herd all its research activities into organised research entities.

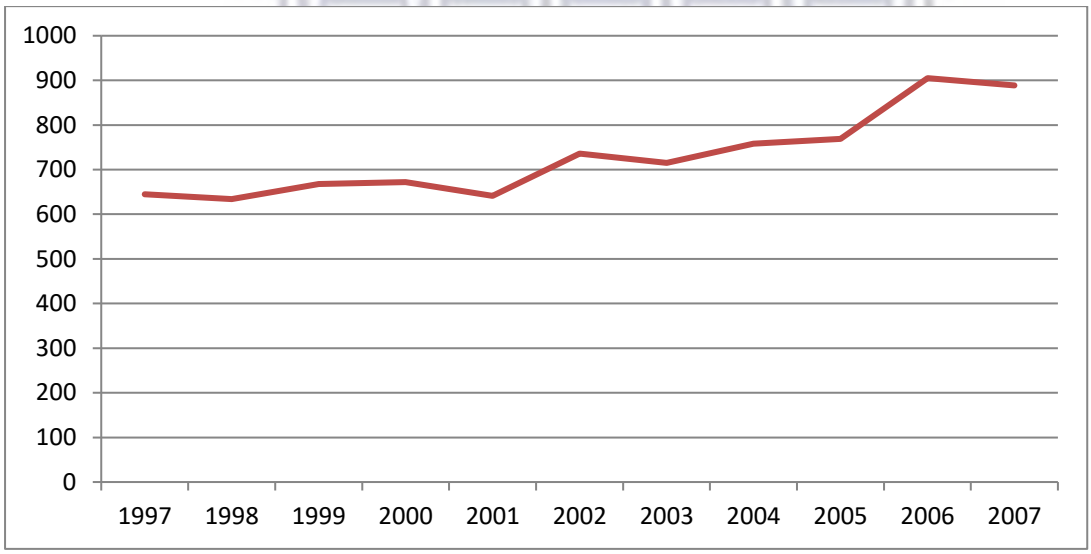
Finally, the university's approach to knowledge production was also criticised by some academics for being too rigid in its application of the laboratory sciences model of working in teams and on tightly circumscribed research themes. This appears to be an example of the failure of an organisational intervention to take stock of the multi-layered dynamics and the differentiated nature of the knowledge production process, which does not always lend itself to a Mode-2 approach to knowledge production (Rip, 2000). The paradox is that while the research entities, in keeping with the university's mission, were expected to conduct Mode-2 research, which assumes a structure and approach to knowledge production that is characterised by flexibility, openness (porous boundaries), and responsiveness, they found themselves locked into an approach to knowledge production that was inflexible and likely to stifle their creativity, thereby putting constraints on their ability to be agile and responsive.

Concluding Observations

The preceding discussion has highlighted how this university embarked on a strategy whose objective was to improve its research output and quality and also develop a culture of research in the institution by prioritising a limited number of research areas for targeted

development and investment. This niche-focused strategy was undertaken through the creation of twelve research focus areas organised into four types of research entities. From interviews with senior academics and university managers, there appears to be consensus that the introduction of the focussed research model resulted in increased financial commitment from the university to research capacity development. For example, the university's annual research report for 2006 notes that while in 2005 the university spent R3million in research equipment and training, this investment increased to almost R14million the following year. The increase in research investment following the introduction of research focus areas was also reflected in the steady increase in research publications outputs at the university, which are reflected in the graph below.

Figure 13: Research publications output at the Niche-Seeking University (1997-2007)



Source: Department of Higher Education and Training

There are also a number of factors that seem to have provided legitimacy to the introduction of the focussed research model at the university. The first was the significant role played by international experts in the conceptualisation of the model, as well as their involvement in the university's research quality audit process. Given that the university did not have a strong

research culture or tradition prior to the inception of the research focus areas model, the involvement of international experts lent credibility among the academic community to an exercise that was otherwise fairly directive and rigid in its approach. The second factor that lent legitimacy to the process (and consequently garnered acceptance among academics) was the unique role (in the context of the South African higher education sector as a whole) played by Senate with respect to providing strategic direction and oversight to the development of the university's research agenda. This role resided with a standing committee of Senate that consisted of the university's executive management, together with the university's leading academics, the deans, and the directors of research entities. According to some of the senior academics who were interviewed, this approach ensured that, notwithstanding the extent to which the initiative was driven from the centre, it gained legitimacy at level of the research performing layer. A third factor that ensured that there was little opposition to the initiative from academics was that the university had a culture of top-down management that was characteristic of the historically Afrikaans-speaking universities, many of whom were highly administered institutions that did not have a strong collegial tradition (Kulati, 2000). The combination of these factors enabled the university to embark on an organisational adaptation strategy which, although characterised by directive steering, was met with little resistance from academics.

Chapter 8: Summative Analysis of the Cases

Introduction

The purpose of this chapter is to provide a summative analysis of the main findings from the three cases that have been discussed in the preceding chapters. In the chapter on the study's research design, it was proposed that the shift from a facilitatory to a directive or deliberate approach to strategic research management – which, I have argued, is an indicator of the emergence of strategic actorhood in universities - was brought about by demands emanating from the external environment of universities. The chapter on the legislative and policy framework discussed in detail the nature of these external demands, the primary of which were the goals of the government's transformation agenda for higher education as articulated in the White Paper of 1997, and the subsequent policy steering instruments of planning and funding that were introduced following the release of the National Plan in 2001. The literature review chapter further discussed how, internationally, the emergence of the new public management as an external pressure and key driver influenced changes in the governance and management of universities. The new public management was also characterised as a multifaceted reform agenda that manifests itself in three ways: first, as a doctrinal framework that seeks to entrench the role of managers in the running of public sector organisations; second, as a template for organisational (re-)design; and third, as a set of management approaches and techniques that have been borrowed from the private sector to promote efficiency and effectiveness in public sector organisations and to strengthen their strategic actorhood.

The structure of the summative analysis is framed by the analytic schema that was presented in the chapter on research design. The purpose of the analytic schema is to help us assess - with the help of markers that were developed for this purpose - the extent to

which there is a discernible shift from a facilitatory to a more directive approach to strategic research management at the three universities that constitute the empirical cases for this study. The chapter on research design also presented the study's hypothesis and a set of propositions (or likely outcomes) regarding the extent to which there is a shift in the strategic management of research in universities, which will be tested or assessed through the analytic schema that was presented as Table 5 in the chapter on research design (Chapter 4). The propositions were formulated such that they took into account the study's conception of the university as a multi-level organisation. It was further argued that the shift to a more directive form of strategic research management will manifest itself through the following anticipated outcomes:

1. *The strengthening of the steering capacity at the top (or executive management) level of the university, will be evidenced through:*
   a) The development of an organisational policy, plan or strategy that provides the rationale and legitimating discourse or framework for the executive management to exercise increased oversight over the university's research enterprise.
   b) The establishment of a designated portfolio or office at the executive management level of the organisation whose mandate is to drive the implementation of the university's research policy and strategy.
   c) The development and use of funding policies and other instruments (for example performance indicators) to enhance the strategic coordination capacity of the executive management.

2. *The strengthening of the role of deans with respect to research management, whose markers are:*
   a) The co-option of deans into the university's executive management structure or layer.

b) The devolution of executive responsibilities for research management to the deans, especially with respect to the monitoring and periodic review of research performance at the faculty level.
c) The use of instruments (such as funding and performance management) by deans to steer the research agenda of their faculties.

3. *The tighter coupling of the research agenda of academics to the strategic objectives of the university; this will be evidenced by the following markers:*
   a) The identification of research priorities whose purpose is to shape the research agenda of the university
   b) The use of indicators to monitor the extent to which research activities of academics are aligned to the research agenda of the university
   c) The provision of resources to researchers that is made contingent upon the achievement of research objectives as prioritised by the university's strategic research agenda.

The next will summarise the findings from the discussion of the three cases in relation to each of the propositions of the study.

The strengthening of steering capacity at the central level of the university

Condition 1: The development of an organisational policy, plan or strategy to steer the university research agenda

With regard to this condition, the evidence from the cases is that all three universities developed plans and policies whose central objective was to strengthen the executive managements' capacity to steer the research agenda of their universities. The reasons for this are, however, varied. At the Classical-Elite University, the research policy framework that laid the basis for the executing management's efforts to steer the university's research

agenda was part of a broader academic restructuring exercise that was precipitated by the budgetary crisis the university was facing at the time. The reorganisation process saw a reduction in the number of academic departments, the amalgamation of faculties, and the devolution of responsibility for academic administration and research management from the centre to the deans. The research policy framework was introduced following the adoption of the recommendations of a report the university had commissioned, which had reviewed the organisation and management of research at top research universities abroad, especially in Australia.

At the Enterprising University, the strengthening of strategic research management capacity at the top level was introduced following an assessment of the university's research performance in comparison to other research-oriented universities in South Africa. One of the findings of the assessment was that research happened haphazardly, instead of being planned, and that university resources were not being used efficiently in relation to research production, and it was recommended that the university adopt a more focused research model.

The Niche-Seeking University's research policy and approach to strategic research management was developed with the assistance of international consultants from the Netherlands, following the university's decision to shift from being a teaching focused to a research-oriented university with an enhanced capacity to conduct high-level research in targeted areas. The university's executive, together with a newly created Senate standing committee, played a leading role in the development and coordination of the university policy and strategy, especially as these related to strategic research management oversight and research agenda setting at this university.

At two of the three university cases, therefore, the organisational restructuring efforts that sought to strengthen the steering capacity of the top management over the university's

research enterprise were not precipitated or driven by external pressures from government such as the emergence of the new public management, but were informed by an internal financial crisis (at the Classical-Elite University), and lessons drawn from other (international) contexts, which were deemed to be international best practice by the universities concerned (Classical-Elite University and Niche-Seeking University). With respect to the Enterprising University, organisational restructuring was initiated in response to concerns from the university's management that the institution was lagging behind its main competitors in the South African higher education research landscape in relation to research performance. Another important observation to make, which is probably not be a coincidence, is that all three universities embarked on these initiatives during the third phase (1998 – 2000) of the policy development period, which was characterised by weak or absent policy steering from government.

Condition 2: The establishment of a designated research portfolio or office at the executive management level of the organisation

In relation to satisfying the second condition, all three institutions established designated portfolios that had overall responsibility for research management at the executive level of the university. Historically, and especially prior to the adoption of the White Paper on higher education in 1997, a few universities in South Africa had a dedicated office for research administration (rather than management) at the executive level. However, following the release of the National Plan on Higher Education in 2001, which saw the introduction of a planning regime (through three-year rolling plans) and a new funding framework for university research (which ushered a shift from an input-driven research subsidy formula, to one that was based on research performance), a number of universities began establishing offices whose function went beyond research administration to also encompass strategic research oversight at the executive level of the university.

Condition 3: The development and use of funding policies and other instruments (for example performance indicators) to enhance the strategic coordination of research

With regard to the third condition, only one university, namely the Niche-Seeking University, used funding as an instrument to steer the institution's research agenda. The university set up a dedicated fund to drive its ambition of developing research capacity in areas that it had earmarked for targeted development. Conforming to some of the characteristics of a niche-seeking university that we had identified in the typology of universities that was discussed in the chapter on research design, the university management committed its resources to developing research capacity in a limited number of areas the university sought to excel in. In pursuit of its niche-seeking strategy, the university embarked on a research concentration and selectivity exercise that was geared towards shifting the university away from its focus on undergraduate education to one that had pockets of research excellence in its profile. As it was argued in the chapter on this university, while this strategy was strongly driven in a fairly top-down and rigid approach, it appeared to have elicited very little resistance from academics, primarily because of the involvement of Senate in the coordination and oversight of the strategy, and also because of the top-down management culture that historically characterised institutional governance dynamics at the historically Afrikaans universities.

Although the two other universities, namely the Classical-Elite University and the Enterprising University, had expressed an intent in their strategic research policies and plans to use funding to steer their institutions' research agenda in order to give effect to their research prioritisation and selectivity exercises, both universities failed to do so in the course of implementing their policies. At both universities, this was due to a lack of a resourcing strategy to back up these policies and plans, but also, in my assessment, a result of the ability of leading academics and research entities to obtain research funding independently of the university. In this regard, both universities' efforts at strengthening the strategic coordination and steering capabilities of the centre through their strategic plans and frameworks remained largely symbolic, without having any steering leverage at the level of

the research performers. So unlike the case of the Niche-Seeking University, which did not have a strong research tradition, the introduction of measures to steer the research agenda at these two universities was resisted by those academics with established track records for excellent research, and who already had strong networks of research funding outside of the university. The diagram below summarises the findings in relation to the proposition of a strengthened steering capacity at the strategic level of the university.

Table 6: Indicants of an enhanced central (research) steering capability

Conditions / University	Development of policy, plan, or strategy to steer organisational research agenda	Establishment of designated portfolio for steering research agenda	Development and use of funding instruments to drive research agenda
Classical-Elite University	✓	✓	×
Enterprising University	✓	✓	×
Niche-Seeking University	✓	✓	✓

The strengthening of the role of the dean with respect to research management

Condition 1: Co-option of deans to executive management layer of the university

The evidence from the discussion of the cases shows that, at only one of the three universities, namely the Classical-Elite University, were deans formally co-opted to the executive management layer of the university, where they were part of the Senior Executive Team (SET). Deans at the Enterprising University and the Niche-Seeking University were not part of their respective universities, executive management structures, although at the Enterprising University they had a representative in the executive team on a rotational basis.

Condition 2: Devolution of research management oversight to deans

At two of the universities there were efforts made (introduced through university policy) to enhance the role of the deans in strategic research management. At the Classical-Elite University, the research policy framework of the university conferred formal oversight for research management at the faculty level to the deans. Much of the focus of the deans in relation to research management, however, was in the development of young and emerging researchers, and in the humanities faculty, to assisting the faculty's academics to obtain their PhDs, as the faculty was well below the university's target with regard to this university goal.

At the Enterprising University, deans also had formal responsibility for research management oversight, in particular for monitoring research performance in terms of the performance indicator framework that was developed by the university as part of its shift to a focused research model.

Of the three universities, the deans at the Niche-Seeking University had the weakest role in strategic research management, and this was not only because they were not part of the executive management team of the university, but also because they played no role in research management oversight at the faculty level, as this was the responsibility of the directors of research entities. Their role in research management at the faculty level was therefore more administrative than managerial.

Condition 3: Deans have access to resources to steer research agenda of academics

Although deans had formal responsibility for research management at two of the three universities, in practice they had little direct influence in strategic research management in their faculties, largely because of a lack of funding that deans could use at their discretion to

support their faculties' research agenda at a strategic level. The deans at the Classical-Elite University and the Enterprising University had access to small discretionary budgets from their faculty allocation of the research subsidy received by universities from government, which they used to support young and emerging researchers. So while there was a formal devolution of managerial responsibility for research oversight to deans at both these universities, this did not translate into a strengthening of their authority with respect to research management as they lacked the resource base that is necessary to exercise such authority. Furthermore, the leading academics and research groups at both institutions had well-established reputations for research excellence, which enabled them to obtain external research funding independently of the university.

The table below summarises the findings with regard to the three markers on the strengthening of the role of the dean in strategic research management. The picture that emerges is that of an intermediate layer of organisational management whose role in research management was generally minimal, notwithstanding the development of a policy framework (Classical-Elite University) and instruments (in the form of performance indicators at the Enterprising University) whose objective was to strengthen the role of deans in research management oversight.

Table 7: Indicants of a strengthened role of the dean in research management

Conditions / University	Deans are co-opted to executive management layer	Devolution of research management oversight to deans	Deans have access to resources to steer research agenda
Classical-Elite University	✓	✓	×
Enterprising University	×	✓	×
Niche-Seeking University	×	×	×

The tighter coupling of the research agenda of academics with the strategic objectives of the university

Condition 1: University has identified research priorities to shape research agenda of academics

There is a considerable degree of convergence in the strategies adopted by the top management at the three universities to forge a closer alignment between the research agendas of their universities and the research activities of the academic layer. In terms of our first marker in relation to this proposition, all three universities identified areas of research focus that were designated as the focal points of the research agenda of their universities.

At two of the universities, namely the Classical-Elite and the Niche-Seeking universities, the development of areas of research priority was accompanied by the establishment and formal designation of various categories of research entities as the focal point of the research concentration and activity at these two universities. However, as discussed in the chapter on the Classical-Elite University, the introduction of research priorities through the

establishment of research thrusts did not gain much traction at this university due to the lack of a resourcing strategy to support this initiative.

Condition 2: Use of indicators to monitor alignment of academic activities to research priorities of the university

Another development that was common among the three universities was the introduction of indicators to monitor research performance and alignment to the strategic objectives of the university. At one of the universities, namely the Niche-Seeking University, the use of research performance indicators was integral to the process of the formal recognition of the university's research entities, as well as the periodic evaluation of their performance for the renewal of their formal recognition by the university. The Enterprising University had also introduced research performance monitoring, although these were not used to for the recognition of research entities but to assess the alignment of the activities of academics to the research priorities (or vision statements, as they were referred to) of the university. The usage of performance indicators by university managers to monitor research performance became widespread in the South African higher education sector following the introduction of a research output driven subsidy formula by government in 2004.

Condition 3: Provision of funding to academics is contingent on their research aligning with the priorities of the university

With regard to the third condition, the Niche-Seeking University was the only university that had created a special fund, using its own internal resources, to support its research priority-setting exercise. The university allocated earmarked funding for the development and support of formally recognised research entities in the approved research focus areas. Although the policies of both Classical-Elite University and the Enterprising University had articulated the universities' intention to invest resources in order to support the development of areas of strategic priority, and the development of research focus areas, both universities

did not provide funds to support this exercise. As a result, there was poor to little alignment or coupling between the research agenda of the universities and the research activities of the academics. As already stated, there were also other factors at play, not least the established reputations of the leading academics and research groups at both universities who were able to secure external funding independently of their universities.

Table 8: Indicants of the tighter coupling of the research agenda of academics to the strategic objectives of the university

Conditions / University	University has identified research priorities to shape research agenda	Use of indicators to monitor alignment of academic research activities to priorities of university	Provision of funding is contingent on achievement of research priorities of university
Classical-Elite University	✓	×	×
Enterprising University	✓	✓	×
Niche-Seeking University	✓	✓	✓

Summative Analysis

Based on the preceding discussion, the purpose of this section is to provide a sense of the overall picture that is emerging with regard to the approaches adopted by the three universities to strategic research management. This will be done on the basis of the aggregate score that each institution has obtained for each of the anticipated outcomes (propositions) of a shift to a directive approach in university research management. As depicted in Table 9 below, for each proposition there are three aggregate scores (*Low*, *Moderate*, and *High*), which are based on the number of ticks (✓) that each of the

universities has obtained for that particular proposition in the preceding discussion. The aggregate score for each proposition thus serves as a proxy for the extent to which there is a discernible shift in strategic research management at each of the three levels of the university organisation.

Table 9: Aggregate Scores for Shift in Strategic Research Management

Score / **Proposition**	**Low** *One or no tick*	**Moderate** *Two ticks*	**High** *Three ticks*
Proposition 1: Strengthening of central steering capacity		*Enterprising U* *Classical-Elite U*	*Niche-Seeking U*
Proposition 2: Strengthening of the role of deans in strategic research management	*Niche-Seeking U* *Enterprising U*	*Classical-Elite U*	
Proposition 3: Tighter coupling of university research agenda with research activities of academics	*Enterprising U* *Classical-Elite U*		*Niche-Seeking U*

In terms of the aggregate scores for the first proposition, the strengthening of the steering capacity of the executive management, two of the three universities (Classical-Elite University and Enterprising University) have a moderate aggregate score as they have developed policies and strategies to enhance the steering capabilities at the top level of the university: first, by developing policies and plans whose objective is to shape the research agenda of the university, and second, by giving responsibility for strategic research

management to a designated portfolio, namely the office of the deputy vice-chancellor responsible for research. Of the three universities, only the Niche-Seeking University displayed the most directive approach to strategic research management. This was primarily because, in addition to developing policies and strategies to steer the university's research agenda, the university had also mobilised its own resources to implement the university's research development strategy. What was also unique about the approach to strategic research management at this university was the central role played by its Senate - through special committees that consisted of the executive management and the leading researchers at the university - not only in guiding the strategic agenda of the university (including the identification of research focus areas and the establishment of research entities), but also its role in monitoring the performance and funding of these units.

With regard to the approach to strategic research management at the intermediate layer of university, the evidence from the cases shows a less prominent role played by the deans in research management than was anticipated by the proposition of the study. In the aggregate score in the table above, the Classical-Elite University has a moderate score with respect to the strengthened role of deans in research management, compared to the other two universities, whose score is low. The reason the Classical-Elite University has a better score is because, unlike at the two other universities, the deans at Classical-Elite University were part of the senior executive team of the university, a position that afforded them the opportunity to influence strategic decision making at the top level of the organisation.

Although at two of the universities (namely the Classical-Elite University and Enterprising University) the formal policy provided for a more prominent role for deans in strategic research management, in practice, key decisions concerning faculty research matters were discussed and approved by the universities' respective faculty research committees (FRCs), with the deans having the responsibility for implementing the decisions taken by these bodies. In other words, even though both universities had adopted managerialist

approaches to strategic research management at the top level, the faculties retained their strong collegial traditions to university governance. The intermediate layer was the weakest at the Niche-Seeking University, where the deans played a marginal role in strategic research management. As already mentioned, the key structure that drove the research agenda at the university was a special committee of Senate, rather than the faculties.

At the level of the research performers, among the three universities the Niche-Seeking University has shown evidence of the strongest alignment between the research activities of academics with the strategic goals of the university. As it has already been indicated, the goal of this university to develop its research capacity in targeted areas gave impetus to the setting of research priorities and the establishment of research focus areas. The establishment and provision of funding to research entities was made contingent on the achievement of targets that were tightly linked to research productivity and alignment to the university's research priorities. It is for these reasons that the university scores highly with regard to this proposition.

While the Classical-Elite University and the Enterprising University also sought to forge a closer alignment between the research programmes at the level of the research performers and the strategic priorities of the university through the identification of research areas that were deemed to be of strategic importance, at both universities these initiatives were nothing more than symbolic exercises that failed to achieve their desired objectives. Senior academics that were interviewed at both universities were dismissive of these initiatives, regarding them as having no influence on their decisions about what research to undertake. Instead, they regarded these initiatives as being yet another administrative burden that would require more reports to be submitted to their respective research administration offices without there being significant benefits for the universities' scientific endeavour.

As a conclusion to this chapter, I will now reflect on the extent to which the approaches to strategic research management that were (tentatively) associated with the three institutional typologies that were developed for this study, and which are discussed in the chapter on research design, are corroborated by the evidence emerging from the analysis of the cases.

A general observation about the overall findings is that there is a departure in the approach to strategic research management adopted by two of the universities from what had been anticipated in the typology. In the case of the Classical-Elite University, it was anticipated that, because of its historically strong collegial traditions, this university would be less predisposed than the other two university types to a managerialist approach to strategic research management. The evidence from the cases, however, clearly shows that the managerialist push was no less strong at the classical-elite university than at the other two universities. In this regard, a key factor highlighted by the case of the Classical-Elite University is the role played by agency from the executive management in shaping organisational policy, something that is associated more with private firms than a public university that is steeped in a collegial governance tradition. In the case of this university, the adoption of a planning-driven approach to research management was at the instigation of the deputy vice-chancellor responsible for research, who was instrumental in commissioning the study that recommended the adoption of the Australian model to strategic research management at the university.

In the case of the Enterprising University, the overall pattern that has emerged from the discussion is of a less directive steering than was anticipated in the assumptions underlying the typology. This outcome, however, is not for a lack of organisational intent, as the university did indeed adopt an intensified strategic research management model whose objective was to enhance the role of university managers in strategic research management. Rather, the strategic objectives of the university's research management model were subverted by the lack of a resourcing strategy that would have provided impetus to the

university's policy framework. It was also undermined by the fact that there was already a strong research tradition underpinned by the extensive epistemic and funding networks and relationships that the leading researchers had developed over time, networks that also provided these academics with access to resources independently of the university.

With regard to the Niche-Occupying University, it has scored highly in terms of both a centralised steering capacity and a tighter coupling of the research activities of academics with the research agenda of the university. There are two possible explanations to the pattern that has emerged from this case: the first is that the university managed to adopt a more directive approach to research management because it had the combination of a weak research tradition coupled to a strong commitment to deploy university resources in order to achieve its organisational objectives. The second explanation for the more directive role in research management is that the university, as a historically Afrikaans institution, had a history of being highly administered with a top-down management culture. As a university that was focused on teaching and did not have an established research base, it had a weak tradition of academic self-governance. If this explanation is correct, then one would expect that, as the university settles into its niche and, over time, sheds the apartheid imprint in its highly administrative organisational culture, it will become less directive in its approach to research management.

Chapter 9: Conclusion

Introduction

Universities are regarded as important players in their nations' development agendas, and are increasingly being called upon to make a more direct contribution to human and socio-economic development. And in a world where knowledge is seen as providing competitive economic advantage, there is pressure on universities to go beyond their traditional missions of teaching and research, and to harness their research activities for social and economic benefit. Furthermore, as many countries in the developing south are faced with challenges of poverty and inequality, there are growing demands on higher education to demonstrate their effectiveness in addressing these challenges, while also improving their efficiency in the light of diminishing or constrained public resources. It is against this background that the emergence of the new public management and managerialism in higher education must be understood. A key issue in this regard is whether, and to what extent, universities have been able to develop the organisational capabilities that will enable them to act strategically in response to these pressures and demands for change.

This chapter will summarise the findings in relation to the main hypothesis of this study, which is that, in response to the demands and challenges for transformation, there was a shift in the approach to the strategic management of research at South African universities, from a facilitatory to a directive mode of strategic research management. This directive mode, it was argued, saw the executive management playing a more prominent role in shaping the strategic research agenda of the university organisation, thereby becoming a strategic or organisational actor (Krücken and Meier, 2006; Whitley, 2008). On the basis of the conception of the university as a multi-level organisation, it was further proposed that the changes to strategic research management have brought about the reconfiguration of the

role of the dean at the meso-level of the university. The role of the dean was being transformed from that of an academic administrator to that of a 'manager-academic' who has to be 'bi-lingual', conversant in the language of the new managerialism while, at the same time, advancing the interests of his/her academic colleagues (Deem, 2003). The research performers also had their own dilemma to contend with, as they sought to pursue, on the one hand, research that addresses the fundamental problems and puzzles in their scientific domains, while also being under pressure to undertake research that is in alignment with the university's strategic agenda and attracts external funding.

The External Pressures for Transformation and Responsiveness

The literature review chapter has shown how higher education reform processes in many countries, particularly with regard to the need for greater accountability and responsiveness, have been influenced by the emergence of the new public management. The emergence of the new public management as a guiding force behind public sector reforms in many OECD countries, has seen the rise of managerialism in higher education whereby there have been increasing pressures on university managers to harness the efforts of academics in order to respond to external demands for relevance and responsiveness (Salminen, 2003; Deem and Kevin J. Brehony, 2005). Reflecting on developments in Australia, Marginson and Considine have argued that, for a long time, the research enterprise in the traditional university existed as 'a shadow-life beyond the scrutiny of managers' (Marginson and Considine, 2000). In relation to South Africa, this study has sought to examine whether the higher education legislative framework that framed the post-apartheid transformation agenda contained elements of the new public management, and the extent to which the legislative and other pressures for change have shaped institutional responses and strategies as these relate to strategic research management.

The White Paper on Higher Education Transformation, which was released in 1997, articulated the values and principles that would underpin a transformed higher education system, especially in areas such as the increasing of access to higher education for previously disadvantaged groups, and the democratisation of institutional governance. While the policy and regulative frameworks were lauded for their transformative intent, they lacked the necessary detail, and the requisite instruments, to drive and guide the implementation of the government's reform agenda. It is only after the release of the National Plan in 2021 that a more coherent implementation agenda and a tightening of the regulatory framework was unveiled, which included the introduction of policy instruments in the areas of national planning and funding.

I have discussed in the chapter on the higher education legislative framework how the new output-driven research funding model put the management of research performance as a strategic organisational objective that required the scrutiny and oversight of university managers, and how the institutionalisation of planning as a performance management instrument sought to tighten the accountability framework between higher education institutions and government, thereby strengthening the role of university management in strategic organisational decision making. It was also argued that the shift to an output-based research funding formula at the national level, and the introduction of three-year rolling plans at the level of higher education institutions, offered a clear indication of an emergent new public management agenda in the South African higher education policy framework.

And although there were undoubtably elements of the new public management agenda in the higher education policy framework, I have also drawn attention to the ambivalence in government about the possible unintended consequences of its implementation for the higher education transformation project. For example, there was apprehension in government that the creation of a marketised higher education environment through the promotion of open competition among institutions for resources (especially for fee-paying

black students and for research funding) would disadvantage the historically black higher education institutions, the very institutions that were under-resourced under apartheid. The realisation that certain policy interventions may accentuate inequalities between historically black and white higher education institutions gave rise to a tentative and somewhat confused implementation of the new public management reform agenda, which saw the emergence of a marketised higher education alongside the introduction of initiatives that sought to redress historical institutional inequalities.

The concluding remarks in this section are in relation to the extent to which there is evidence from the cases whereby the external research agenda of the universities was influenced or shaped by the external research funding priorities. The only unambiguous evidence from the discussion of the cases is from the Niche-Seeking University, whose research focus areas initiative was introduced in anticipation of the changes in the government's approach to the funding of research, which would be linked to national development goals. In the case of the two other universities, both of which are comprehensive, research-oriented, universities, the government's research priority setting initiatives, through programmes such as the DST-NRF Centres of Excellence initiative, did not result in these institutions shifting their research priorities to align with those of government. As the evidence from the cases has shown, the attempts at research priority setting through the research thrusts initiative (Classical-Elite University) and the focused research model (the Enterprising University), were largely symbolic gestures that had insignificant effect at the level of the research performers.

The next three sections discuss the main findings of the study and are structured according to the formulation of the three propositions of the study.

The Emergence of a Strengthened Steering Capacity in Universities

A key assumption underlying the legislative and policy frameworks of government, and indeed the organisational restructuring initiatives adopted by the universities themselves, was that, in order to respond to the external pressures for transformation and responsiveness, universities as organisations can, or should, develop the capacity to act strategically by enhancing the steering capacity of institutional managers through greater managerial oversight and coordination of the activities of their organisations.

The first proposition of the study identifies three markers of an enhanced steering capacity, namely the development of an organisational policy; the establishment of a designated portfolio to drive the university's (research) policy and strategy; and the use of instruments (especially funding) to steer the research agenda of the university. Implicit within this proposition is the idea that the doctrinal element of the new public management is often reflected in the mission statements and policy documents of universities. These can provide pointers with regard to the extent to which the university, and especially its leadership, has assimilated the rhetoric and ideological underpinnings of managerialism and the new public management.

With respect to the first proposition, the evidence from the discussion of the cases shows that all three universities introduced measures (in the form of policies, structures, procedures) to enhance executive oversight over the research enterprise of the university. Furthermore, all three universities established offices or portfolios at the executive level of these organisations' management structure, whose primary remit was to coordinate and oversee the implementation of the universities' (research) policies and strategies. As two of the three cases demonstrate, however, the ability of the executive management to translate the formal authority that was conferred on them by institutional policies into substantive capacity to steer their universities' research agenda was circumscribed by several factors.

At the Classical-Elite University, the strategic research plan identified research thrusts as areas of strategic priority that the university would make investments in. The development of a research management framework in which the university's executive management (through the office of the Deputy Vice-Chancellor: Research) sought to play a key role in the strategic coordination of the university's research enterprise, had negligible success. The development of research thrusts and the establishment of entities of research excellence was largely a failure at this university, primarily because of a lack of a resourcing strategy and a sustained effort from the centre to support these initiatives.

At the Enterprising University, attempts to steer the university's research agenda were also hamstrung by the executive management's inability to mobilise resources to give effect to its strategy of consolidating its research enterprise into areas that were deemed to be of 'exceptional strategic importance' to the university. In addition, the fact that the strategy did not find favour with two of the three deans who were interviewed for the study, and with some of the leading researchers at the university, undermined its implementation, thereby diluting its impact.

The Niche-Seeking University is the only one out of the three cases to have fulfilled all three conditions for a strengthened steering capacity at the central level of the university. In this regard, the university developed a policy and strategy that sought to concentrate the university's research enterprise in a limited number of formally recognised focus areas; it established performance monitoring capacity at the central level, albeit with the involvement of Senate; and the university used funding to drive its research prioritisation agenda. That the university was able to act decisively in pursuit of its goal of becoming research active can be attributed to three factors: the first was the determination and willingness of the executive management to commit resources to the realisation of the university's objectives. The second success factor was that the strategy was driven and overseen by Senate, with the support of the leading (that is, most research productive) academics at the university – this

lent it legitimacy to the wider academic community of the university. A third, and not insignificant, factor was that the university, given its history as a conservative Afrikaans institution without a strong research tradition, was characterised by a top-down management culture and a relatively weak collegial governance tradition, which meant that the university executive did not have to contend with resistance from the broader academic community (Kulati, 2003).

The analysis of the cases therefore demonstrate that while structural reform and the development of a legitimating framework are important, and perhaps even necessary, conditions for enhancing the central management's capacity to steer a university's strategic reform agenda, it is the ability to mobilise and deploy resources (the third indicant of the first proposition) that was the decisive element in providing the centre with more leverage to influence the strategic agenda of the university. This leverage only works under certain conditions, however, and these will be addressed later in this chapter.

The Changing Role of the Deanship

The role of the dean is pivotal in the managed university, especially in the context of the emergence of the new managerialism and the concomitant trend towards decentralised university governance, which has gained currency in higher education not only in South Africa but internationally (Meek *et al.*, 2010). The devolution of executive authority to deans is intended, in the parlance of the new public management, to get 'managers to manage' (Hood, 1991). It has seen the devolution of responsibility for academic governance to the deans and, in many cases, the simultaneous enhancement of (upward) managerial accountability of the faculty level to the central management through the co-option or elevation of the deanship to the executive layer of the university, giving rise to the so-called 'centralised-decentralisation' model of university management (Henkel, 1997).

The changing role of deans from their traditional role as administrator-academics to being professional managers or 'manager-academics' (Deem, 2003), has seen them playing a more prominent role in strategic decision-making in universities. It has also accentuated their ambiguous role with respect to higher education governance and management, as they have striven to balance, on the one hand, their role as professional managers that have to discharge their responsibilities as members of the university executive with, on the other hand, their traditional role as custodians of the interests of their academic peers in their faculties (Bright and Richards, 2001; Harman, 2002; Cloete and Kulati, 2003).

The evidence from the analysis of the cases confirm the role conflict or ambiguity of the deanship in the organisational structure of the university (Wolverton, Wolverton and Gmelch, 1999), where, is some cases, deans regard their role as the conveyors and agents of executive authority at the faculty level (an example would be the dean of the science faculty at the Classical-Elite University), and in other cases where the deans see themselves as representing the academic voice and interest of their faculties (exemplified by the arts faculty dean at the Enterprising University). While there is more recent evidence of a heightened role of the dean in strategic management at South African higher education institutions generally (Seale and Cross, 2018), it was at only in one of the three case universities that deans were formally part of the senior executive structure of the university during the time frame of this study (1997-2007).

An examination of the cases reveals three models of deanship emerging. The first is the emergence of what I refer to as the 'strong dean' model, which formed the basis of the governance and management framework at the Classical-Elite University. In this model, the deanship is an extension of the sphere of executive oversight and influence, and is meant to play a leading role in academic leadership (in teaching and research) and administrative management at the meso-level of the university. The model underpinning the deanship at the Classical-Elite University also demonstrates, however, that a distinction needs to be

made between policy intent – the ideal typical model of the dean - and what transpires in practice or implementation. In this regard, while the influence of deans in decision-making at the meso and strategic levels of the organisation may have been enhanced, their role in strategic research management at the faculty level was marginal. In reality, therefore, the strong dean model attests to the increased influence of the dean in strategic decision-making with regard to institution wide decision making, rather than an increased capability to steer the research agenda of the faculty. This is demonstrated by the fact that, even after the organisational restructuring and devolution exercises were implemented at the Classical-Elite University, the key strategic decisions relating to the broad research agenda of the faculty continued to be taken by the strong research groups themselves, with the faculty research committees also playing a role in shaping the broad research programme of the faculty, and deciding on the criteria for disbursing the faculties' research budgets.

The second model of the deanship that emerges is that of the buffer role or intermediary, which is most visible at the Enterprising University. In this model, the university has devolved managerial responsibility for academic leadership and management at the faculty level to the deans, but they play no role in strategic oversight at the executive level of the university. The intermediary role of the dean can be internal, as was the case with the health sciences faculty where the dean sought to sensitise the university about the unique challenges faced by academic clinicians who were on joint appointments with the provincial government. There can also an external dynamic to the intermediary role, as was shown by the dean in the agricultural sciences faculty, one of whose roles was to balance the interests of the faculty's academics (in conducting basic research) with those of the faculty's key clients in industry, whose primary interest was in funding research that solved their problems. Given their lack of representation at the executive level of the university, the deans at this faculty tended to have greater allegiance to their faculties – which was the case at two of the three faculties - than to the executive.

The third model, that of the weak deanship, is discernible at the Niche-Seeking University. The deans at this university, like those at the Enterprising University, were also not part of the university's senior executive team, and therefore had minimal influence in the overall strategic decision-making framework of the university. Furthermore, the provision of strategic leadership with respect to teaching and research at the faculty level was divided between the directors of schools and the research entities, respectively, which resulted in the hollowing-out of the deanship of its academic leadership and managerial authority in both the teaching and research domains at the faculty level. This rendered the deanship at this university to be largely an administrative role, providing support (mainly in personnel administration matters) to schools and research entities and mediating tensions that may arise between the directors of schools and those of research entities, without having any strategic management role, either at the faculty or the executive level of the university.

The analysis of the three cases therefore demonstrates that, contrary to our second proposition that the shift from a facilitatory to a directive approach to research management will see the strengthening of the role of the deans in strategic research management, the evidence is mixed regarding the influence of the deanship in meso-level academic leadership at the universities in this study. While their role was seen to be pivotal in the changing nature of higher education management at the meso-level of the higher education organisation, the three cases have highlighted the importance of taking into account the governance and management framework that is operative at each university, and the dynamics of knowledge production that this gives rise to at the level of the research performers.

The Tighter Coupling of the Research Agenda of Academics with the Strategic Objectives on the University

The third proposition of the study is, in some respects, a logical consequence of the first proposition, in that a strengthened steering capacity at the centre is likely to lead to a tighter coupling between the strategic objectives of the university and the activities of the research performers. All three universities in the study developed policies and guidelines for the establishment of areas of research priority and the creation of entities of research excellence and relevance, whose primary mission was to be the focal point of the research enterprise of their respective universities. The efforts by the universities to promote research concentration and selectivity through the establishment of research focus areas emerged following exhortations from government and research funding agencies, especially following the release of the National Plan on Higher Education in 2001 and the National Research and Development Strategy in 2002, for universities to focus on their strengths, and maximise efficiencies by encouraging the consolidation of their research activities into larger, and networked, entities of research excellence.

As two of the cases attest – both at the Classical-Elite and Enterprising universities - many of these efforts at promoting research selectivity and consolidation, primarily through the establishment of research focus areas, have been more of a symbolic gesture than an effective management strategy at reconfiguring the respective institutions' research agendas and profiles. One of the key shortcomings of these interventions at both these universities was the lack of a resourcing strategy to lend support to these interventions. A successful case at introducing a focused research model was at the Niche-Seeking University, where the research selectivity exercise was buttressed by a funding strategy that concentrated the university's research funds in a limited number of formally recognised research focus areas. It is also my contention, however, that the intervention succeeded at the Niche-Seeking University because the institution did not have a strong research tradition, in which a

considerable number of academics did not have a record and reputation for research excellence, and therefore were unlikely to have access to external funding opportunities independently of the university. Furthermore, the dominant university in the merger that gave rise to this university was a historically Afrikaans institution which, as a has it has already been highlighted in the previous chapter, did not have an entrenched culture of collegial governance, having had a history of top-down institutional management and governance (Bunting, 2006b). As a consequence, initiatives from top management in these universities were often not challenged by academics, who were often reduced to 'powerless observers of a centralised process' (Jansen, 2001).

In contrast to the response of academics at the Niche-Occupying University, individual academics and research groups or entities that had a reputation for research excellence at the Classical-Elite and the Enterprising universities were able to ignore or resist the introduction of initiatives that sought to forge a closer alignment between their research activities and the strategic goals of the university, if these initiatives were deemed to be contrary to their research interests or agenda. Those academics and research groups in these universities that had gained recognition for research excellence were able exploit their reputational capital and academic prestige in order to obtain resources independently of the university, thereby gaining relative autonomy and remaining aloof from attempts to steer their research towards the university's priorities (in the cases where these were not aligned). Attempts by university managers to steer the research activities of academics at universities with strong research traditions (such as the Classical-Elite and the Enterprising universities) are likely to face obstacles in achieving their objectives because these universities are characterised by a strong network form of organisation, which consists of loosely coupled organisational research sub-units that are made up of 'cosmopolitan' academic experts whose allegiance is likely to be split between the university and the epistemic communities and peers outside the university, from whom they obtain recognition and prestige (Gouldner, 1957; Burns and Stalker, 1996).

Therefore, two of the three universities in the study do not show evidence of a strengthened role for the executive in strategic research management, especially as far as this relates to the tighter coupling of the research agenda of academics to the strategic agenda of the university. The evidence from two of the cases also debunks the claim made by some of the authors cited in the literature review, who saw the emergence of managerialism in universities as signalling a shift in the balance of decision-making power away from the professoriate, towards the executive management (Braun and Merrien, 1999; de Boer and Huisman, 1999). The evidence from this study suggests otherwise: that the proclamation of the triumph of managerialism over academic self-governance at the level of the research performers is premature. In other words, although academics have had to take into account the interests and needs of the university in setting out their research programmes, and have had to be more accountable about the work they do (to external interests such as government and funders), they still enjoy considerable discretion over their work. This finding confirms the utility and relevance of the model of the university as a loosely coupled organisation, whereby the level of the academics or research performers continues to exercise and retain a level of autonomy and discretion within the organisation.

Another observation to make is that, although the emergence of these new entities of research excellence and relevance may be signalling new forms of organising and managing research in the networked or post-modern university, they have not entirely superseded the traditional modes of academic organisation and governance. The evidence from the study suggests that, while the managerialism-oriented interventions have resulted in modifications to the research management repertoire of universities, these have tended to coexist with, rather than supplant, the traditional modes of organising and managing research. In this regard, this study confirms the findings made by Deem in her research, whereby the introduction of new forms of organising the university research enterprise, and the management procedures, techniques, and technologies that have come to be associated

with the new managerialism, have resulted in some of form of accommodation – in what she refers to as a 'hybridisation process' - so that they coexist alongside the traditional modes of university research organisation and governance (Deem, 1998).

The University as a Strategic Actor: The Utility of Strategic Choice Theory

The closing comment for this concluding chapter will reflect on the utility of strategic choice theory in explaining and advancing our understanding of the dynamics of strategic research management at South African universities. This study has sought to bring to the fore the dynamic (and political) interplay between organisational agency or strategic actorhood, the nature of the university as an organisation (including the limits that its internal functioning place on organisational agency), and the environment (both internal and externa to universities) within which these organisational choices are made (Child, 1997).

From the perspective of strategic choice theory, organisations are more than just a creation or product of environmental forces (*á la* contingency theory), but are also shaped by the choices that are made by those in leadership to direct or determine organisational action (Child, 1972). In other words, organisations have, or can develop, the capacity for agency, or strategic action. Further, the strategic choices that organisations are confronted with are themselves circumscribed by possibilities and constraints that are essentially political in nature. Internally, organisational agency is bounded by existing organisational routines and power dynamics, including the traditions and cultures of the academy. Universities as organisations also have to contend with outer structuration, namely the external environmental conditions, such as the actions, inactions, or missteps of governmental interventions, which shape, or place limits, to organisational action or choices.

This study has sketched how universities, in response to the legislative changes brought by government and the increasing competition for resources, have sought to act strategically

through various interventions, from internal organisational restructuring to the setting of research priorities. The study has also examined how the organisational structure of the university (its multi-level nature) and the interplay between these levels has put limits or undermined the efforts of university managers to bring about the desired organisational reforms.

The study has highlighted the various factors that have impeded universities from becoming 'authoritatively integrated and directed' organisations that are capable of exercising independent organisational action (Whitley, 2008). The main factors that undermine the strategic actorhood of universities are the following: their inability to determine the collective objectives (purposes and priorities) of the scientific research conducted by academics - although the study has identified the conditions under which this may occur, as provided by the case of the Niche-Seeking University; their inability to impose a particular way of organising the process of knowledge production, either through collaboration or the integration of scientific activities (across disciplines) in order to achieve organisational goals; and their inability to introduce new ways of evaluating research performance, independently of the systems and mechanisms (such as peer review) that academics themselves have developed to validate what constitutes good science. The findings from the study therefore confirm Whitley's central thesis that universities, because of these factors and their organisational features - the loosely coupled nature of university organisation; the allegiance of academics to their disciplines and epistemic communities (for prestige and recognition) rather than to the university, and the cosmopolitan nature of their research relationships and networks - are limited in their ability to develop the capabilities or competencies that would enable them to become strategic actors (Whitley, 2008).

Postscript to the Study

This section will briefly consider some of the developments in South African higher education after the period that is the focus of this study (from 1997 to 2007), and discuss whether these developments, at the national and institutional levels, may raise new questions and challenges with respect to the management of change in higher education, especially as it relates to strategic research management in universities. The three areas that will be the focus of the discussion that follows are the following: the release of the White Paper for Post-School Education and Training by government in 2013, developments in relation to the programmes promoting the development of research excellence at universities, and developments with regard to strategic research management at the three universities post 2007.

The Higher Education Legislative Framework after 2007

The White Paper for Post-School Education and Training (WPPSET)[43], which was released in 2013, was the third major piece of post-apartheid higher education legislation to be promulgated by the government since the release of the previous legislation in 1997, namely the White Paper on Higher Education Transformation and the Higher Education Act (Department of Higher Education and Training, 2013). The development of this legislation was prompted by the incorporation of the college sector – the old further education and training (FET) colleges, which were renamed the technical and vocational education and training (TVET) colleges – into the sphere of responsibility of the DHET. It also followed the transfer of the agencies responsible for skills levy grants – the Sector Education and Training Authorities (SETAs) - from the jurisdiction of the Department of Labour to the DHET. According to the WPPSET, the post-school system comprises all the education and training

[43] The full title of the document is: *White Paper for Post-School Education and Training: Building an Expanded, Effective and Integrated Post- School System.*

that is provided to those who have completed their schooling, those who have not completed their schooling, and those who have never attended school (Department of Higher Education and Training, 2013). The post-school education and training sector thus consists of the following post school education institutions, all of which fall under the regulatory oversight of the DHET:

a) Twenty-six public universities
b) Fifty public TVET colleges
c) Community colleges (this is a sub-sector that is in the process of being established, which will incorporate the Public Adult Learning Centres (PALCs)
d) Private post-school education and training institutions such as registered private TVET colleges and private higher education institutions
e) SETAs and the National Skills Fund (NSF)

The policy objectives of the WPPSET are to promote the development of:

a) a post-school system that can assist in building a fair, equitable, non-racial, non-sexist and democratic South Africa
b) a single, coordinated post-school education and training system
c) expanded access, improved quality, and increased diversity of provision
d) a stronger and more cooperative relationship between education and training institutions and the workplace; and
e) a post-school education and training system that is responsive to the needs of individual citizens, employers in both public and private sectors, and involved in broader societal and developmental objectives.

(Department of Higher Education and Training, 2013)

Given the policy objectives stated above, it is clear that the primary purpose of the WPPSET is to provide the legislative framework for the expansion and diversification of the post-school sector through the incorporation of the TVET college sector and the creation of a new

college sector consisting of the community colleges. The promulgation of the WPPSET therefore did not signal a fundamental departure from the policy direction of government as outlined in the National Plan on Higher Education that was released in 2001, which provided the policy instruments and steering mechanisms that underpin the higher education policy reform process that provides the context for this study. As such, the higher education sector continues to be guided and regulated on the basis of the same legislative framework (that is the White Paper 3 and the National Plan) that prevailed in the period that is the focus of this study.

Programmes Promoting Research Excellence and Relevance

The discussion on the research landscape in Chapter 2 highlighted the emergence of research entities of excellence and relevance alongside the traditional structures of academic organisation (namely the discipline-based departments) at South African universities. These entities became a feature of the higher education research landscape following the introduction of the DST-NRF Centres of Excellence (CoE) programme in 2004 and the South Africa Research Chairs Initiative (SARChI) in 2006, and heralded the emergence of new forms of research organisation and funding at South African universities. During the period covered by this study, these research entities were still in their infancy in the organisational ecology of the university research enterprise.

The entities of research excellence and relevance as exemplified by the DST-NRF Centres of Excellence and the SARChI programmes have since become the pre-eminent model of research organisation and funding in the networked university, having come into prominence largely in response to efforts by government and national research funding bodies to drive research priority setting, and thereby benefit from the efficiency gains of greater research collaboration, concentration, and selectivity. Perhaps inevitably, the emergence of entities of research excellence and relevance as the more prestigious (and lucratively funded) form of

research organisation at South African universities may have increased the pressure towards the centralisation of steering and coordination of strategic research management at some universities, especially those with aspirations of being research intensive. This is because research concentration and selectivity have become one of the criteria and instruments of national research funding agencies (such as the NRF and the MRC) for providing research support at higher education institutions. As a consequence, the steering of the university research enterprise towards meeting national goals has moved beyond being solely the responsibility of the university to one that now resides with national (and supranational) funding agencies as well.

Developments in relation to strategic research management (post 2007) at the three case universities

The final comment in this postscript addresses the question as to whether one of the key mechanisms adopted by universities to strengthen the steering capacity of executive management, that of research concentration and selectivity, is still a feature of the organisation of research at the three case universities that are the focus of this dissertation. The only way of accomplishing this task, short of undertaking another full-scale study, is to look at the relevant documents that have been made available (mainly online) by the respective institutions.

From the information available online, these are the updates I was able to obtain about the three universities: the Classical-Elite University appear to be the only one among the three cases to have moved away from organising its research according to areas of strategic priority to the university. The latest university strategic plan for research that is available online states that the pursuit of research driven by one's own curiosity will be balanced by an approach that supports research that seeks to build critical mass in five broad areas or

themes, which are listed in the research plan.[44] There is no further detail provided as to how, or whether, these themes will be supported through targeted funding by the university.

The Enterprising University, in its latest available annual research report, lists five of what it refers to as 'interdisciplinary strategic research areas' that will drive the research agenda of the university.[45] The five strategic research areas are described as 'overarching umbrella themes' that will be 'pro-actively developed and supported as trans-disciplinary research foci in areas of societal need'.[46] Finally, the Niche-Seeking University has largely retained its strategic research management framework over the years, including the nomenclature that is used for the various research entities as described in this study. The research and innovation policy of the university also continues to apply the same criteria for the recognition and funding of these research entities as have been outlined in this study.[47]

On the latest available (albeit limited) evidence therefore, it appears that two of the three universities, namely the Enterprising University and the Niche-Seeking University, have continued to organise their research on the basis of thematic areas that will receive targeted support from the universities. Obviously, it is not possible, solely on the basis of this information, to make an assessment as to whether the dynamics of research management within these institutions have changed, or to what extent they differ from those highlighted in the findings from this study. That is the subject of a new study.

[44] University Research Plan (2023-2027), *accessed online.*
[45] University Annual Report, 2022 *accessed online.*
[46] University Annual Report, 2022 *accessed online*
[47] Research and Innovation Policy (latest update 2013), *accessed online.*

Appendix 1: List of Informants by designation

Classical-Elite University

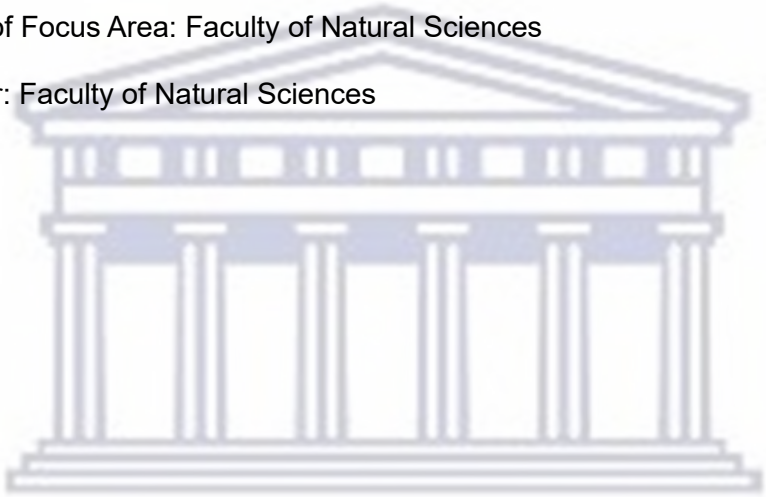
1. Vice-Chancellor
2. Deputy Vice-Chancellor: Research
3. Head: Research Office
4. Dean: Faculty of Humanities
5. Dean: Faculty of Science
6. Deputy Dean (Responsible for Research): Faculty of Health Sciences
7. Director: DST-NRF Centre of Excellence (Faculty of Health Sciences)
8. Director: Research Entity in Faculty of Humanities
9. Associate Professor in Faculty of Humanities
10. Head of School (Faculty of Science)
11. Director: DST-NRF Centre of Excellence (Faculty of Science)

Enterprising University

1. Deputy Vice-Chancellor: Research and Innovation
2. Senior Director: Research
3. Senior Director: Institutional Planning
4. Dean: Faculty of AgriSciences
5. Dean: Faculty of Arts
6. Dean: Faculty of Health Sciences
7. Dean: Faculty of Science
8. Director: Research Institute (Faculty of AgriSciences)
9. Director: Research Entity (Faculty of Arts)
10. Director: DST-NRF Centre of Excellence (Faculty of Health Sciences)
11. Research Professor in Faculty of Sciences

Niche-Seeking University

1. Executive Director: Research and Innovation
2. Senior Director: Research Support
3. Senior Director: Innovation and Commercialisation
4. Research Support Officer
5. Dean: Faculty of Arts
6. Dean: Faculty of Natural Sciences
7. Director of Focus Area: Faculty of Arts
8. Director of Focus Area: Faculty of Natural Sciences
9. Professor: Faculty of Natural Sciences



Appendix 2: Interview Questions for the Informants

Questions for Executive Management

1. What is the organisational framework for decision-making with regard to the research mission of the university? For example, does the university have an office responsible for research oversight at the strategic level of the organisation, and what are the responsibilities of this office?
2. To what extent is the university guided by an overall vision, mission or strategic plan for research? If so,
    a. What was the motivation for developing the vision/plan?
    b. Who was involved in developing the mission statement/plan (structures, offices, academic management layers, etc.)?
    c. To what extent was the development of this plan in response to developments in the external environment of the university, including government policy and legislation?
3. How would you describe the research mission and profile of your university? In other words, what, if any, are the areas of research focus and strength of the university's research enterprise?
4. How did the university develop its research profile? In other words, did it emerge over time or is it an outcome of a deliberate intervention or response to specific challenges facing the university?
5. What are the key challenges facing the university with regard to the organisation, administration and management of its research mission and enterprise?

6. How is the university responding to the changes in its external environments, for example in relation to the increased competition for the funding of research, and the shift towards research prioritisation and selectivity?
7. How is the university responding to external demands and pressures to shift from the traditional mode of university governance and management towards more business-like management approaches?
8. To what extent have these demands and pressures had an effect/impact with regard to the management of research within the university?
9. What has been the impact/effect of the changing nature of the knowledge production on the role of executive management in strategic research management?
10. How is the executive management in universities balancing the need for flexibility with the need for organisational stability?

Questions for the Deans

1. Does the faculty have a research programme or profile?
2. How did the research programme/profile of the faculty emerge?
3. What was your role as the Dean in relation to the development of the faculty's research profile?
4. What is your understanding of research management within the context of your role as the dean of a faculty? Has this role changed over time, and why?
5. What are the responsibilities of the dean with regard to the organisation, funding and management of research within the faculty?

6. Does the faculty have a research plan? If so, how are the priorities for research determined at the level of the faculty?

7. Is the dean a member of any executive management structures within the university?

8. What is the role of the executive management of the institution in steering the research agenda of the faculties within the university?

9. How have the changes in the way that research is conducted (the so-called shift to new modes of knowledge production or Mode2) affected or impacted the organisation and management of research within the faculty?

10. What have been the effects of the changes in the external research environment (for example the funding of public research, research prioritisation, etc.) been on the research agenda (including its organisation and management) of the faculty?

11. How are Deans balancing the pressures from above (executive management) as well as the pressures from below (research performing groups and individual academics) in relation to the setting the faculty's research agenda?

12. Is the research mission (and thus profile) of the university steered from the centre or is it an outcome of the aggregation of the efforts of individual Centres/Institutes/Faculties?

13. Do you see an increasingly directive mode – in contrast to a facilitatory one - emerging within the university in relation to the management of research? Is this a good development in relation to the future of knowledge production in university?

Questions for the Research-performing level

1. How are the priorities for research within your research group determined?
2. How is the research in your research group funded?
3. Does the faculty or university have any role in shaping the research agenda or programme of your research group?
4. How has the changing nature of knowledge production affected the way in which your research group conducts, organises, and manages research?
5. What are the challenges facing your research group with regard to the external pressures for research prioritisation and responsiveness?
6. How has the changing regime for research funding from government affected the research agenda of your research group, including its organisation and management?

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