AN INVESTIGATION INTO THE ALLOCATION OF RESOURCES TO ACADEMIA AT THE CENTRAL UNIVERSITY OF TECHNOLOGY, FREE STATE

LOUISE MANCY SMIT

Dissertation submitted in fulfilment of the requirements for the Degree

MAGISTER TECHNOLOGIAE:
COST AND MANAGEMENT ACCOUNTING

in the

School for Entrepreneurship and Business Development
Faculty of Management Sciences

at the

Central University of Technology, Free State

Supervisor: Mr T.M. van Niekerk, M Com, HED
Co-supervisor: Ms L.E.Rossouw, B Compt Hons CA (SA), M Com

BLOEMFONTEIN
2004

Central University of Technology, Free State

DECLARATION WITH REGARD TO INDEPENDENT WORK

I, LOUISE MANCY SMIT, identity number [redacted] and student number [redacted], hereby declare that the research project submitted to the Central University of Technology, Free State for the Degree MAGISTER TECHNOLOGIAE: COST AND MANAGEMENT ACCOUNTING, is my own independent work; and complies with the Code of Academic Integrity, as well as other relevant policies, procedures, rules and regulations of the Central University of Technology, Free State; and has not been submitted before to any institution by myself or any other person in fulfilment (or partial fulfilment) of the requirements for the attainment of any qualification.

L. Smit

SIGNATURE OF STUDENT

2 May 2005

DATE

SUMMARY

The South African Government, as most governments in the world, is constantly confronted by the availability of funds for distribution to the various governmental, departments. Funding, to higher education institutions, by the Department of Education (DoE), will consequently be influenced by this situation. It is therefore imperative for higher education institutions to ensure that resources are allocated in such a way that maximum return on investment becomes a reality.

A question often asked is: "How can a higher education institution best allocate limited resources to optimize returns to best meet the objectives of the institution?"

This investigation was done at the Central University of Technology, Free State (CUT) and the objective of the study was to determine whether the resource inputs were sustainable, and the allocation of resources to academia viable.

The study proofed that the CUT is a sustainable higher education institution, with sustainable sources of funding and revenue, and can therefore provide sustainable services. With regards to resource allocation, the main problem seemed to be the allocation of staff throughout the CUT. As the CUT did not reach the graduation rates of the Department of Education the conclusion was reached that the resource allocation at the CUT did not justify the return on investment in the academia.

The contribution of this investigation is that the conclusions and recommendations clearly indicated that the CUT needs policies, procedures and guidelines for the allocation of staff to the different levels of services. A staff allocation model, with the emphasis on the academia, was proposed for implementation at the CUT.

LIST OF ABBREVIATIONS

A list of the abbreviations as used in the text is listed in alphabetical order below.

C1	Teaching and research professional
CUT	The Central University of Technology, Free State
DoE	Department of Education
DVC	Deputy Vice-Chancellor
EFQM	European Foundation For Quality Management
EP^2M	Effective progress and performance measurement
HEQC	Higher Education Quality Committee
FTE	Full-Time Equivalents
HIV/AIDS	Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome
HPHE	National Plan For Higher Education
HRDS	Human resource development strategy
NQF	National Qualification Framework
PRB	Performance responsibility budgeting
ROI	Return on investment
RRB	Revenue responsibility budgeting
SADC	Southern African Development Community
SET	Science, engineering and technology
SETA	Sector Education and Training Authorities
SWOT	Strengths, weaknesses, opportunities and threats
VRB	Value responsibility budgeting

LIST OF FIGURES

LIST OF TABLES

TABLE OF CONTENT

CHAPTER 1: INTRODUCTION

CHAPTER 2: HIGHER EDUCATION: THE LEGAL FRAMEWORK

CHAPTER 3: STRATEGIC MANAGEMENT

CHAPTER 4: ORGANIZATIONAL RESOURCES

CHAPTER 5: PERFORMANCE MEASUREMENT

CHAPTER 6: THE CENTRAL UNIVERSITY OF TECHNOLOGY, FREE STATE FROM A STRATEGIC AND FINANCIAL PERSPECTIVE

CHAPTER 7: ANALYSIS OF DATA

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 1

INTRODUCTION

The problem statement, the objectives, field of research, the research methodology and the layout of the different chapters are outlined in this chapter.

1.1 BACKGROUND AND INTRODUCTION

Recently higher education institutions have undertaken a fundamental review of their internal resource allocation in response to environmental pressure, as well as constant changes to the funding framework by the Department of Education (DoE).

The question frequently asked is: "How can an institution best allocate limited resources to optimize returns to best meet the objectives of the institution?"

The primary approach to resource allocation is through the budgeting system, of which a number of methods exist for the allocation of resources in either a centralized or decentralized way. Examples of such methods are incremental budgeting, formula budgeting, zero budgeting and performance budgeting. Thomas (1999:1) claims that the use of formulae in resource allocation has gained in popularity within higher education institutions, because of the increasing transparency of formulae, the use of formulae in government funding and, the demand for more efficient and effective management of resources and for greater accountability in the way in which those funds are used. Liverpool, Eseyin & Opara (1998:1) are also in favor of formula budgeting because it presents an attractive option for the allocation of resources, as it reduces the dependence of funding decisions on political considerations, and allow for a fair, equitable and transparent disbursement of funds.

Staff represents one of the main resources of a higher education institution. The expenditure for staff at a higher education institution usually constitutes more than 70% of the total budget of the institution. The allocation of staff is thus of utmost importance to an institution. The severe cutbacks in government subsidies to universities in South Africa over the past years, as well as the capping of student enrolments, with a further decline in government funding in the future, will necessitate institutions to do an in depth study in the utilization of the main resource of an higher education institution, namely academic and administrative staff.

A rational, accountable and t... ...ine the staffing requirements in academic departments is still lacking at most higher education institutions in South Africa. Literature concerning this controversial issue is also far and in between.

1.2 PROBLEM STATEMENT

The strategy of the Central University of Technology, Free State (CUT), supported by its resource allocation to academic faculties, does not maximize return on investment within the faculties.

1.3 OBJECTIVE OF THE STUDY

The objective of the study is to determine the following through an income- and expenditure review:

- The sustainability of resource inputs.
- The allocation of resources to the different levels of services with special emphasis on the allocation of resources to academia.
- The effect of resource allocation on efficiency and effectiveness.

1.4 FIELD OF RESEARCH

An income- and expenditure review will be done on the CUT for the calendar year 2003. An institutional name change took place during the second quarter of 2004, when Technikon Free State became the CUT. For contemporary reasons it was decided to adopt the new name as far as this study is concerned.

1.5 RESEARCH METHODOLOGY

1.5.1 LITERATURE STUDY

The literature study involves the tracing, identifying and analyzing of documents containing information relating to the research problem (Struwig and Stead, 2001:38). In this study, as much as possible available, relevant and recent literature will be collected and used. A summary of the literature study is outlined below.

An overview of the foundation of higher education in terms of legislation and policies, introduces the literature research of this study. The legislation applicable to higher education will be investigated, as it provides a framework within which higher education institutions should operate. The basic principles of the funding framework of the DoE will be outlined.

After tracing the legal- and funding framework of higher education institutions, the focus turns to strategic management. The strategic management process, as set out in the strategic management model, will be scrutinized.

Once the strategy of an institution is determined, it is instrumental in the determination of the resources needed by the institution and the way the resources will be allocated. For this purpose an investigation will be done on resource analyses and resource allocation.

Finally, performance measurement as a means of ensuring that institutions attain their goals optimally, will be discussed.

1.5.2 EMPIRICAL RESEAI

- *Research approach*

The study will use quantitative research methods. Quantitative research is research whereby numerical information is collected under conditions of considerable control, and the analyses of the information conducted by using statistical analyses. Quantitative research is objective, measurable and mechanistic (De Villiers, 2000:1).

The research will be descriptive in nature, as it will attempt to provide a complete and accurate description of the situation mentioned in the problem statement for the 2003 calendar year. Descriptive statements make factual claims and will therefore be applicable to this study (Mouton, 2002:190).

- *Population*

The population is the complete set of elements and their characteristics about which a conclusion is to be drawn on the basis of a sample (Mouton, 2002:134).

The population for this study will include the resource allocation to all academic faculties/departments/schools at the CUT.

- *Sampling*

As a sample can be viewed as a subset of measurements drawn from the population, sampling will not be necessary for this study, because the investigation will be done on all the academic faculties/departments/schools (Strydom and De Vos, 2001:191).

- *Data collection*

Structured procedures and instruments will be used for the collection of data. A structured data collection method provides the researcher with quantifiable data, which means that data can be coded and analyzed quantitatively, using statistics (De Villiers, 2000:3).

For this study, data will be collected from documents in use at the administrative-financial- and human resources departments at the CUT for the calendar year 2003.

The data to be collected are:

Financial data including:

- Funding and revenue.
- Recurrent expenditure.
- Recurrent budgets.

Non-financial data including:

- Services rendered at the academic faculties
- Personnel numbers, categories and disseminations.
- Student numbers, enrolments and disseminations.

- *Data analyses and interpretation*

Ultimately all fieldwork culminates in the analysis and interpretation of the data collected. Analysis involves "breaking-up" the data into manageable trends, patterns or relationships. Interpretation involves the synthesis of the data into larger coherent wholes (Mouton, 2002:108).

Data analysis will be done by making use of various mathematical formulae and statistical techniques. The analysis in this study will be done in such a manner as to

answer to the objectives of the study. The empirical research will conclude with the interpretations of the findings against the background of the research problem.

1.6 CHAPTER LAYOUT

Chapter 1: Introduction

The problem statement, the objectives, field of research, the research methodology and the layout of the different chapters are outlined in this chapter.

Chapter 2: Higher education: The legal framework

The emphasis in this chapter will be on the foundation of higher education in terms of legislation and policies.

Chapter 3: Strategic management

This chapter will introduce an overview on strategy and strategic management.

Chapter 4: Organizational resources

This chapter explores resource analysis and resource allocation.

Chapter 5: Performance measurement

This chapter deals with performance measurement as a means of ensuring that organizations and higher education institutions attain their goals optimally.

Chapter 6: The Central Un ology, Free State from a strategic and financial perspective

This chapter outlines the CUT from a strategic and financial perspective.

Chapter 7: Analysis of data

In this chapter the data collected, in respect of the allocation of resources at the CUT, will be analyzed.

Chapter 8: Conclusions and recommendations

Conclusions reached from the analysis and recommendations regarding resource allocation to academia at the CUT are presented in this chapter.

1.7 BIBLIOGRAPHY

The Harvard method of reference will be utilized throughout the text and in documenting the resources. Various adaptations and versions of the Harvard referencing system exists (Struwig and Stead, 2001:178). The approach that will be followed in this study is to be consistent in the way the system is applied. In this regard the guidelines outlined by Beukes (2002:9) was adhered to.

1.8 SUMMARY

This investigation reports on the 2003 calendar year of the CUT. However, if it should become necessary to refer to the 2004 calendar year in chapter 6 and chapter 8 to put facts in perspective, it will be done in an integral way.

CHAPTER 2

HIGHER EDUCATION: THE LEGAL FRAMEWORK

The emphasis in this chapter will be on the foundation of higher education in terms of legislation and policies.

2.1. INTRODUCTION

Chapter 1 outlined the problem statement, the research objectives and the field of study. It also distinguished between the literature- and empirical research areas to be conducted.

This chapter introduces the literature research, with an overview of the legal requirements for higher education institutions.

The government has a responsibility to society to develop and maintain a well-structured educational system and has to provide the financial and physical resources to operate the educational system. The Government also has the legal function to establish and confirm through legislation the parameters within which higher education institutions can exist and function. These parameters and benchmarks will be the focus of the first section of the chapter.

Thereafter the emphasis will be on the financing of higher education. The Ministry determines the policy on the funding of public higher education. The funding framework, as a means of allocating government funds to institutions, will be discussed.

2.2. DEFINING HIGHER EDUCATION

Section 1 of the Higher Education Act of 1997, as amended, defines the following terms as:

Higher education

Higher education means all learning programmes leading to qualifications higher than grade 12 or its equivalent in terms of the National Qualifications Framework as contemplated in the South African Qualifications Authority Act. 1995 (Act No 58 of 1995) and includes tertiary education as contemplated in Schedule 4 of the Constitution.

Higher education institution means any institution that provides higher education on a full-time, part-time or distance basis and which is-

(a) Merged, established or deemed to be established as a public higher education institution under the Act;

(b) Declared as a public higher education institution under the Act;

(c) Registered or (conditionally) provisionally registered as a private higher education institution under the Act.

Public higher education institution

Public higher education institution means any higher education institution that is established, deemed to be established or declared as a public higher education institution under the Higher Education Act of 1997.

2.3. LEGISLATION

The *governance* of higher education in South Africa is constituted in:

- The South African Constitution of 1996 – Bill of Rights.
- The Higher Education Act of 1997, as amended.

The policy directive of government is further communicated in Tirisano (2002:1) to the effect that government regards the Higher Education Act as a vehicle that will provide for a unified and nationally planned system of higher education.

The current *policy* is set out in

- The National Plan for Higher Education of 2001. The National Plan is a significant addition to the Higher Education Act of 1997. The Plan provides the strategy for realizing the policy goals for a new South African higher education system and is outlining an implementation framework for achieving the vision and goals outlined in the White Paper of 1997.

- The 1997 White Paper on Higher Education.

Zaharia (2002:1) claims that the legal framework for higher education, in all countries, is experiencing a process of change intended to define new forms of education, research and the co-operation with the social and economic environment.

2.4 LEGAL REQUIREMENTS

The mandate given to higher education institutions, through legislation, that is applicable to this study will be discussed underneath.

2.4.1 Access

What is expected of higher education institutions, by legislation, in respect of access in education and especially higher education?

Equity in access

The Bill of Rights (1996: Section 9) reflects the basic principle of equity and emphasizes the fact that everyone is equal before the law and that the state may not unfairly discriminate directly or indirectly against anyone on one or more grounds including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth.

The principle of equality also applies to education. The Bill of Rights (1996: Section 29) outlines that:

Everyone has the right-

- To a basic education, including adult basic education; and
- To further education, which the state, through reasonable measures, must make progressively available and accessible.

Everyone has the right to receive education in the official languages of their choice in public educational institutions where that education is reasonably practicable. In order to ensure the effective access to, and implementation of, this right, the state must consider all reasonable educational alternatives, including single medium institutions, taking into account-

- Equity;
- Practicability; and
- The need to redress the results of past racially discriminatory laws and practices.

The achievement of equity of access in a higher education institution is one of the White Paper's of 1997 goals that require fair opportunities to enter and succeed in higher education institutions (White Paper, 1997: 11).

The equity principle is also firmly entrenched in the Higher Education Act of 1997, which states that a public higher education institution must provide appropriate measures for the redress of past inequalities and may not unfairly discriminate in any way.

Admission requirements

The Higher Education Act (1997:20) also addresses the admission to higher education as follows:

(a) The admission policy her education institution must provide appropriate measures for the redress of past inequalities and may not unfairly discriminate in any way.

(b) The council may, with approval of the senate-

- Determine entrance requirements in respect of particular higher education programmes;
- Determine the number of students who may be admitted for a particular higher education programme and the manner of their selection;
- Determine the minimum requirements for readmission to study at the public higher education institution concerned;
- Refuse readmission to a student who fails to satisfy such minimum requirements for readmission.

It is clear from the above that access to higher education should be equitable, meaning racial, gender and disability equity without discrimination and with access there should also be a fair chance to succeed in higher education. Although all should have equal opportunities to enter they must still comply with the admission requirements of the higher education institution. The criteria for access to higher education has to address the problems of redress and equity, but it is however not necessary for institutions to admit students who do not have the potential to pursue further study and higher education institutions do not have to retain students who have no chance to succeed.

The principle of equality also implies that students who do not have the necessary financial means, should not been excluded from higher education. The Ministry is committed to ensuring that academically able students who do not have the financial resources are not prevented from pursuing higher education studies. The Ministry use The National Student Financial Aid Scheme as a mechanism for addressing the access of poor students to higher education (National Plan, 2001:45).

For the Ministry to monitor e higher education institutions, institutions should indicate in their three-year rolling plans the strategies, including time frames, to:

- Enhanced participation rates with regards to blacks, females and persons with disabilities.
- Ensure increased success rates.

(National Plan, 2001:42).

Broad benchmark parameters of the Department of Education for equity are 60% black students and 50% female students.

2.4.2 Staff equity

The achievement of equity in relation to staff is one of the White Paper's central goals for higher education. Employment equity is worded in the Employment Equity Act of 1998 and the requirements of the Employment Equity Act of 1998 are:

- The elimination of unfair discrimination. Every employer must take steps to promote equal opportunity in the workplace by eliminating unfair discrimination in any employment policy or practice.
- Prohibition of unfair discrimination. No person may unfairly discriminate, directly or indirectly, against an employee, in any employment policy or practice, on one or more grounds, including race, gender, sex, marital status, family responsibility, ethnic or social origin, colour, sexual orientation, age, disability, religion, Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) status, conscience, belief, political opinion, culture, language and birth.
- It is not unfair discrimination to take affirmative action measures consistent with the purpose of the Act or to distinguish, exclude or prefer any person on the basis of an inherent requirement of a job.
- Harassment of an employee is a form of unfair discrimination.

To monitor the implementati... , higher education institutions' three-year rolling plans should indicate strategies, including time frames for the development of their employment equity plans with clear targets for rectifying race and gender inequities. More attention should be given to increasing and retaining the pool of qualified black and women staff, as well as the disabled (National Plan, 2001:42).

2.4.3 Meet the national development needs

The Higher Education Act of 1997 demands the restructure and transformation of programmes and institutions to respond better to the human resource, economic and development needs of the Republic and that of the community served by the higher education institution.

The White Paper argues that higher education must provide education and training to develop the skills and innovations necessary for national development and successful participation in the global economy (White Paper, 1997:9).

To comply with the above requirements the following should be adhered to:

Increased participation rate in higher education

Labour market trends indicate the need for the higher education system to produce more graduates. To produce an adequate supply of high-level human resources for social and economic development, an increased participation rate of 20% of the age group 20-24 in public higher education should be the target over the next 10-15 years (National Plan, 2001:20).

Increased graduate outputs

The increased participation rate must be complimented by increased graduate outputs.

The Ministry expects all ir...rove the graduate outputs based on the following benchmarks for graduation rates.

Table 2.1

BENCHMARKS FOR GRADUATION RATES

Qualification-type	Graduation rate	
	Contact	Distance
Up to 3-years: undergraduate	25%	15%
4 Years or more: undergraduate	20%	10%
Postgraduate: up to honours	60%	30%
Masters	33%	25%
Doctoral	20%	20%

(Source: National Plan, 2001:23)

The increased graduate outputs should not be at the expense of the quality of academic outputs. The White Paper (1997:12) defines the principle of quality as the maintenance and application of academic and educational standards, both in the sense of specific expectations and requirements that should be complied with, as well as the sense of ideals of excellence that should be aimed at.

Higher education institutions also have a moral and educational responsibility to ensure that they have effective programmes in place to meet the teaching and learning needs of the students admitted to the institution. This requires higher education institutions to integrate academic development programmes into their overall academic planning. The role of these academic development programmes in improving the efficiency of the higher education system is crucial in terms of graduate outputs.

For the Ministry to monitor g nstitutions should indicate in their three-year rolling plans their strategies to improve throughput, success- and graduation rates (National Plan, 2001:33).

Broadened social base of students

The labour market expects of the higher education system to produce more graduates to address the shortage of high-level skills workers. The pool of recruits to higher education needs therefore to be increased to include non-traditional students such as workers, mature learners and the disabled.

The establishment of the Sector Education and Training Authorities (SETA), worded in the Skills Development Act of 1998, provides the opportunities and channel through which higher education institutions could develop programmes targeted at workers, mature learners and the disabled. The role of the SETA, according to the Government's Human Resource Development Strategy, is to identify the skills gap and shortage, provide bursaries to learners and to identify appropriate higher education providers to develop and deliver the required programmes.

The Ministry expects higher education institutions to indicate in their institutional plans the strategies and steps taken to increase the enrollment of workers, mature learners and the disabled (National Plan, 2001:28).

Increased recruitments of students from Southern African Development Community (SADC) countries

The SADC commits member states to targeting a maximum of 10% of their student places for students from other SADC countries. The significance of increasing the recruitment of students from the SADC region lies in the fact that it would contribute to the broader human resource development needs of the region.

To enable the Ministry to mo higher education institutions will have to indicate their strategies to increase the recruitment of students from SADC countries in their three-year rolling plans (National Plan, 2001:29).

Changed enrolments by fields of study

The National Plan (2001:2) emphasizes that one of the key issues is to ensure that all graduates are equipped with the skills and competencies necessary to function in modern society, in particular, computer literacy, information management, communication and analytical skills.

The Ministry will therefore shift the balance in enrolments between humanities, business and commerce and science, and engineering and technology to a ratio of 40%: 30%: 30% respectively and will further increase enrolments in career-orientated programmes in all fields of study, with the emphasis on increasing enrolments in information and communications technology. The Ministry will also encourage the development of programmes in marginalized fields of study such as African languages (National Plan, 2001:30). The Ministry also emphasizes in the National Plan (2001:28) that although changing the balance of enrolments towards science, engineering and technology, it does not follow that all institutions are necessarily required contributing to addressing this goal.

The Ministry expects of higher education institutions to indicate in their three- year rolling plans the institution's shape profile in terms of the balance between the humanities, business and commerce and science, engineering and technology programmes in relation to the institution's location, vision, mission and capacity and the Government's Human Resource Development Strategy (National Plan, 2001:34).

2.4.4 Diversity in higher edu

One of the White Paper's goals is the achievement of diversity in the higher education system in terms of the mix of institutional missions and programmes that will be required to meet national and regional needs in social, cultural and economic development (White Paper, 1997:13).

The Ministry will ensure institutional diversity through mission and program differentiation based on the type and range of qualifications needed. Therefore, the balance between the broad fields of study and the qualification types linked to the mission of an institution will determine the programme mix offered at the specific institution. This enables institutions to define their missions based on the location of the institution and social and economic context (National Plan, 2001:54). The process for determining the programme mix of institutions will be based on an interactive and consultative process between the Ministry and institutions linked to the institutional rolling plans (National Plan, 2001:58).

2.4.5 Sustaining and promoting research

The White Paper (1997:13) argues for a secure and advanced high-level research capacity that can ensure both the continuation of self-initiated, open-ended intellectual inquiry, and the sustained application of research activities to technological improvement and social development. The White Paper (1997:31) also recognizes the role that research plays in the production, advancement and dissemination of knowledge and the development of high-level human resources.

To adhere to the research needs, the Ministry expects an improvement in postgraduate outputs, particularly masters and doctoral graduates, as well as an increase in research outputs (National Plan, 2001:78).

2.5. THE FUNDING OF PU EDUCATION

The financial picture has changed in higher education from one of constraints to one of entrepreneurialism, pursuit of new markets and additional income, and increased marketing. Winston (2001:25) claims that higher education institutions has become businesses as it produces and sells educational services to customers for a price and it buys inputs to make the product.

2.5.1 Sources of funds

Bray (2001:677) maintains that the government does not exclusively finance higher education. Individuals also contribute through fees and higher education institutions may also have other sources of revenue.

Section 40 of the Higher Education Act of 1997 outlines the typical funds of a public higher education institution as:

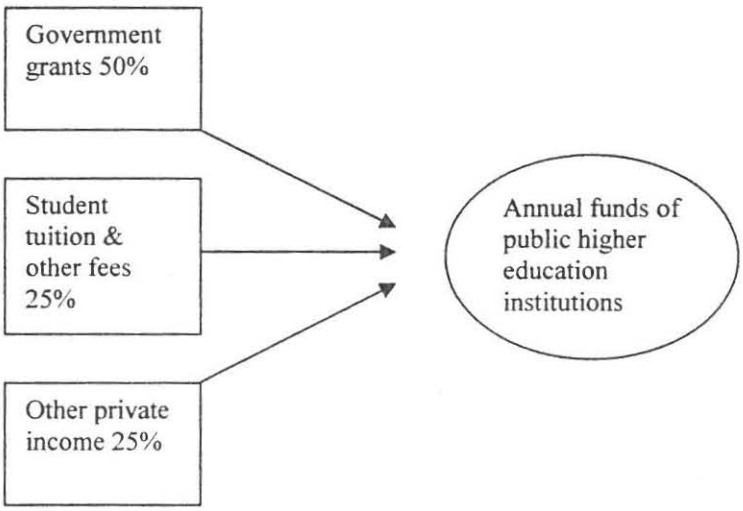
- Funds allocated by the Minister in terms of section 39 of the Act.
- Donations and contributions.
- Money raised by means of loans and overdrafts.
- Money raised by the institution.
- Income derived from investments.
- Money received for services rendered to other institutions or persons.
- Money payable by students for higher education programmes provided by the institution.
- Money received from students or employees of the institution for accommodation or other services provided by the institution.
- Other receipts from whatever source.

The Ministry has direct control over only government grants to public higher education institutions and takes no account of income raised from student fees and other private sources when distributing government grants to individual institutions.

Figure 2.1 below offers a bro ıe ways in which funds flow to public higher education institutions.

Figure 2.1

SOURCES OF FUNDS OF PUBLIC HIGHER EDUCATION INSTITUTIONS



(Source: The New Funding Framework, 2004:2)

2.5.2 Funding legislative and policy frameworks

Legislative framework

The Higher Education Act of 1997, paragraph 39, states:

- That the Minister, after consulting with the Council for Higher Education and Minister of Finance, determines the policy on the funding of public higher education institutions, which must include appropriate measures for the redress of past inequalities.

- The funding will be [illegible] appropriate balance between institutional autonomy and public accountability as well as procedures that are transparent, flexible, manageable and fair.
- The Minister may impose different conditions in respect of different public higher education institutions, different instructional programmes or different allocations, if there is a reasonable basis for such differentiation.

Policy framework

The White Paper (1997:45-55) outlined the principles and policy framework for the funding of higher education that can be summarized as follows:

- The planning process in conjunction with funding – the funding formula and appropriate incentives – will be the main levers through which the Ministry will ensure that targets and goals, as outlined in the National Plan, are realized.
- The funding formula have two main elements, namely for general purposes, block funding to institutions on a three-year rolling plan basis, and earmarked funds to achieve specific purposes such as targeted redress of inequities in access and capacity, development of curriculum and research.
- The funding formula will make provision for teaching and support activities, including funds for academic development and foundation programmes, and funds for research.

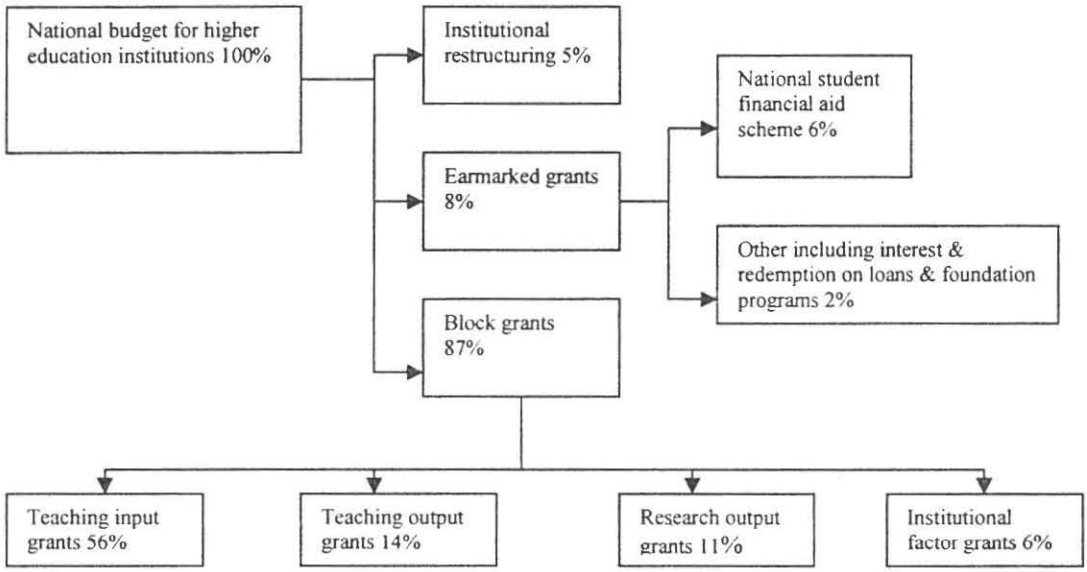
2.5.3 The funding framework

The basic principle of the funding framework is that it links the government grants to national and institutional planning. This funding/planning link makes the framework a goal-oriented mechanism for the distribution of government grants to institutions, in accordance with national planning and policy priorities, funds made available in the national higher education budget and the approved institutional plans.

The Ministry divides, on a tl... basis, the higher education budget into various components. Figure 2.2 below shows what divisions have been approved for the triennium 2004/05 to 2006/07.

Figure 2.2

DIVISION OF GOVERNMENT BUDGET BETWEEN GRANT CATEGORIES



(Source: The New Funding Framework, 2004:5)

(a) Institutional restructuring grants

These grants are special earmarked amounts used to assist institutions that will be merging in either 2004 or 2005.

(b) Earmarked funds

The White Paper (1997:50) claims that the funding formula cannot take into account all the differences between institutions without becoming too complex. The funding formula

will not lend itself to accomm s. Therefore the mechanism of earmarked funds was introduced to meet special needs and often short-term needs.

Earmarked funds consist of:

- A national student financial aid scheme.
- Interest and redemption payments on approved loans.
- Foundation programmes.

(c) Block grants

Block grants are for general purposes and consist of:

- Teaching input grants

Teaching inputs are generated by approved Full-Time Equivalents (FTE) places. Funding for an agreed number of publicly subsidized FTE enrolments will be announced three years in advance in order to give institutions a predictable basis for planning. The Ministry of Education will negotiate the number of publicly subsidized FTE places with institutions each year in respect of the following three years of the rolling triennium (White Paper: 1997:48). Government funding rates per FTE student will vary according to the broad field of study and the level of study, but will be standard for all institutions (White Paper, 1997:49).

Institutions will be able to enroll students in addition to the agreed number of publicly subsidized FTE students, but they must be able to do so from funds raised by themselves and not by the government (White Paper 1997:48).

The FTE is passed through a grid. This grid places FTE enrolments into categories that are weighted according to course material, course level and instruction-delivery mode. The funding grid approved by the Ministry is presented in table 2.2 below.

Table 2.2

INPUT FUNDING GRID

Funding groups 2004/5 to 2006/7	
Funding group with weights	**Categories in funding group**
1 (1,0)	Education, Law, Librarianship, Psychology, Social services, Public administration
2 (1.5)	Business, Communication, Computer science, Languages, Philosophy, Social sciences
3 (2.5)	Architecture, Engineering, Home economics, Industrial arts, Maths, Physical education
4 (3.5)	Agriculture, Fine arts, Health services, Life and physical sciences

(Source: The New Funding Framework, 2004:7)

- Teaching output grants.

The National Plan for higher education emphasizes that student graduation rates must improve. Incentives designed to encourage institutions to increase their graduation rates has been included in the funding framework. Non-research graduates and diplomats generate an institution's teaching output grants. The institution's output of non-research graduates and diplomats are weighted according to a grid, on a rolling three-year basis, as illustrated in table 2.3 below.

Table 2.3

TEACHING OUTPUT GRANTS

Weighting factors for teaching outputs	2004/5 – 2006/7
First certificates and diplomas of 2 years and less	0.5
First diplomas and bachelors degrees: 3 years	1.0
Professional first bachelors degree: 4 years and more	1.5
Postgraduate and post diploma	0.5
Postgraduate bachelors degrees	1.0
Honours degrees/higher diplomas	0.5
Non-research masters degrees and diplomas	0.5

(Source: The New Funding Framework, 2004:9)

- Research output grants

The categories and weighting for research output are summarized in table 2.4 below.

Table 2.4

RESEARCH OUTPUT GRANTS

Weighting for research outputs	
Research output category	**2004/5-2006/7**
Publication units	1
Research master graduates	2
Doctoral graduates	3

(Source: The New Funding Framework 2004:13)

- Institutional factor gra

Institutional factor grants are additional money added to teaching grants for a greater proportion of disadvantage students. It also includes grants offered to institutions depending on size.

2.5.4 Non compliance with the Higher Education Act

The Higher Education Act of 1997, paragraph 42, maintains that if the council of a higher education fails to comply with the provision of the Act, the Minister may call upon such a council to comply with the provisions or conditions within a specified period. If the council thereafter fails to comply with the provision or conditions, the Minister may withhold payment of any commensurate proportion of any allocation appropriated by parliament in respect of the public higher education institution concerned.

2.6 HIGHER EDUCATION AND HIV/AIDS

It is predicted that HIV/AIDS will have a devastating effect within South Africa with a growing impact on the economy generally, individual businesses, as well as the education system that serves the community in terms of, for example:

- Decreased productivity, e.g. through death, sick and compassionate leave;
- Increased overhead costs, e.g. healthcare and insurance;
- Reduction in the available skills base;
- A contracting consumer base and changes in consumer spending patterns;
- Reduced profitability; and
- Diminished investor confidence generally.

  (King Report, 2002:109)

In the early days of the HIV/AIDS epidemic it was largely discussed in health terms. But the growing understanding of the disease has increasingly placed the Department of

Education as a central player [illegible] pandemic. Progress has been made with the development of policies and guidelines for educators and learners with reference to HIV/AIDS. Some of the most important provisions from the National Policy on HIV/AIDS for Learners, Students and Educators, are summarized as:

- The constitutional rights of all learners (students) and educators must be protected equally.
- There should be no compulsory disclosure of HIV/AIDS status.
- The testing of learners as a prerequisite for attendance at an institution, or of an educator as a prerequisite of service, is prohibited.
- No HIV+ learner or educator may be discriminated against.
- No learner may be denied admission to or continued attendance at an institution because of his or her actual or perceived HIV status.
- No educator may be denied appointment to a post because of his or her perceived HIV status.
- Infection control measures must be universally applied to ensure safe institutional environments.

(National Policy on HIV/AIDS for Learners, Students and Educators, 1999)

As HIV/AIDS effects higher education institutions they need to conduct impact studies with regards to staff and students to enable them to implement strategies and steps to limit the effects that HIV/AIDS could have on the workforce, and also the productivity, financial viability and services to students. Such studies can also help institutions to implement strategies to reduce the impact of HIV/AIDS through preventative programs amongst the student population of an institution.

2.7 SUMMARY

In this chapter the Act on Higher Education, the policies and plans set out in the White Paper and the National Plan provided the necessary information for the framework on the governance and funding of higher education institutions.

In the perusal of the sources, a: hapter, it became clear that the mandate given to higher education institutions entails the following:

- Equity in access.
- Access with success.
- Staff equity.
- Graduates that meet the national development needs.
- Diversity in higher education.
- Sustaining and promoting research.

The chapter concludes with a brief discussion on HIV/AIDS and the implications of the pandemic. All involved, especially those in education should remain committed to learning about the pandemic and strategies to address its impact and spread.

This chapter provides the parameters within which any institution of higher education has to operate in order to be sustainable. The remaining part of the study will be addressed according to these guidelines.

The following chapter will introduce an overview of strategy and strategic management.

CHAPTER 3

STRATEGIC MANAGEMENT

This chapter will introduce an overview of strategy and strategic management.

3.1. INTRODUCTION

The Higher Education Act, White Paper and National Plan for Higher Education, as discussed in the previous chapter, provide the strategic- and legal framework within which higher education institutions should operate. To enable institutions to follow these guidelines it is necessary to develop institutional strategies accordingly.

In this chapter the core areas needed to enable a higher education institution to develop institutional strategies, certain phases should be followed. A proposed model by Wright, Kroll and Parnell (1998:3) forms the framework according to which these phases are discussed.

The first phase is concerned with the internal and external environment of the institution that will obviously affect the institution's choice of strategies. In the second phase the focus is on the development and formulation of strategies through which an institution might achieve certain objectives. The third phase consists of the implementation of chosen strategies that is necessary to spell out more precisely how the strategic choice will come to action. The last phase entails strategic control that consists of determining the extent to which institutional goals are being attained.

3.2. DEFINING STRATEGY AND STRATEGIC MANAGEMENT

"Strategy" is a term that can be traced back to the ancient Greek word *strategia* meaning "generalship" (Grant, 2002:16).

There are a variety of definitions on the concept of strategy.

Lynch (2000:7) describes strategy as an organization's sense of purpose. Plans and actions need to be developed to put the purpose into practice. He then summarizes the definition of corporate strategy as the pattern of major objectives, purposes or goals and

essential policies or plans for goals, stated in such a way as to define what business the organization is in or is to be in.

Segal-Horn (2001:13) explains that strategy is about choice, which affects outcome and centers on the following elements, namely:

- The concept of fit.
- The relationship between the company and its competitive environment.
- The allocation of resources among competing investment opportunities.
- The long-term perspective in which "patient money" figures prominently.

Ghenmawat (2000:1) defines strategy as the determination of the basic long-term goals and objectives of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out those goals.

In Grant (2002:17), Quinn defines strategy as the pattern or plans that integrates an organization's major goals, policies and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocates an organization's resources into a unique and viable posture based upon its relative internal competencies and shortcomings, anticipated changes in the environment, and contingent moves by intelligent opponents.

Rea and Kerzner (1998: 2) claim that traditional definitions of strategy agree on the following:

- That it involves the formulation of long-term goals.
- The marshalling and allocation of resources.
- It is used to create a "vision of success".
- That free will and intentional design are essential to strategy.

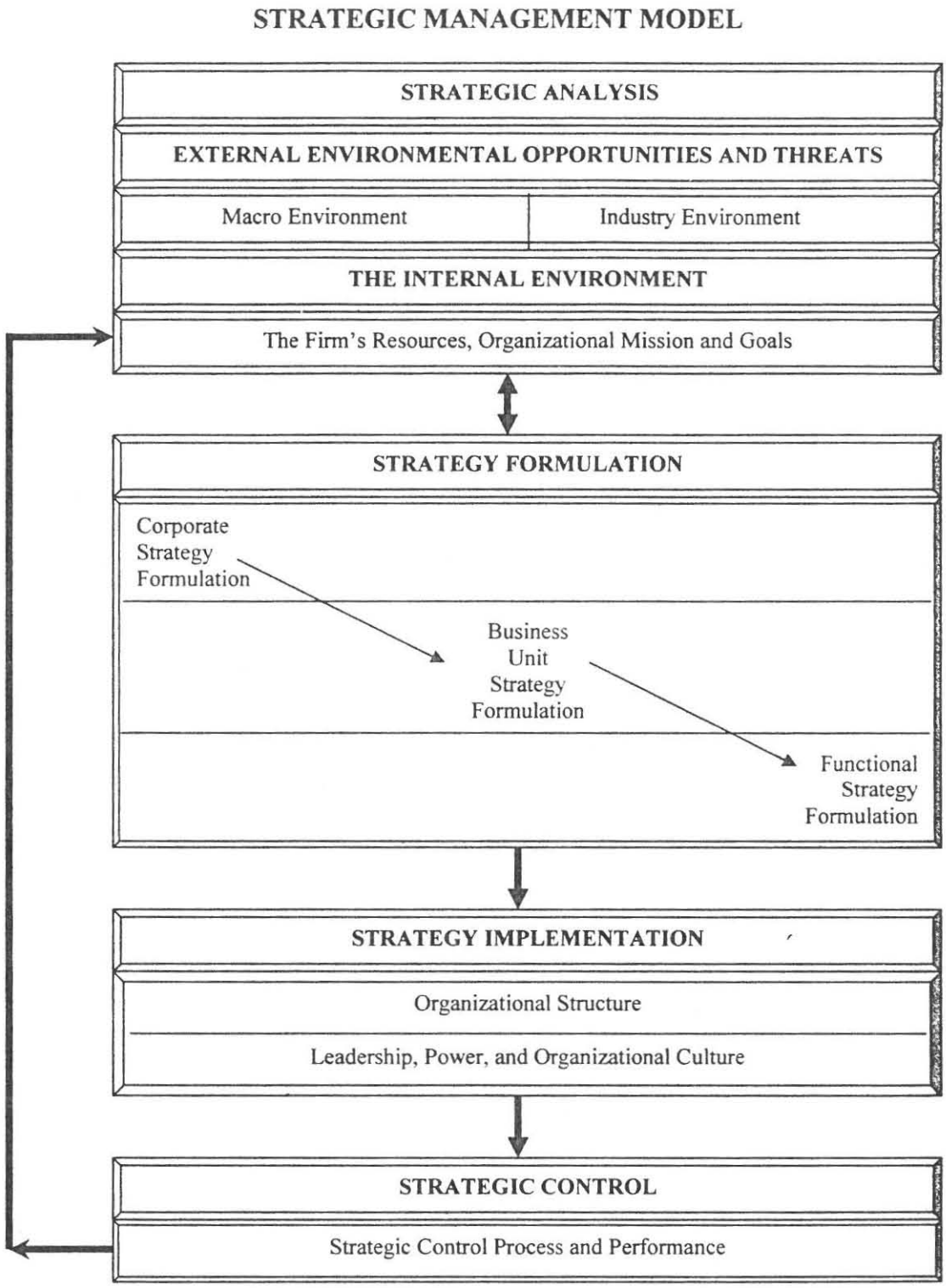
From the various definitions given, it is clear that the word "strategy" is more complex than it might appear and that "strategy" can be summarized as a plan used to achieve the objectives of the organization.

Strategic management is def and Robinson (2000:17) as the set of decisions and actions that result in the formulation and implementation of a plan designed to achieve the objectives of an organization.

Wright et al. (1998:3), on the other hand, outline the fact that strategic management is far more than simply setting goals and then order employees to attain those goals. According to them the strategic direction of the organization will depend upon a variety of considerations such as the external environment of the organization.

Pearce and Robinson (2000:15) describe strategic management as a process. In the strategic management process, the flow of information involves historical, current, and forecast data on the operations and environment of the organization. The strategic management process will be set out in the strategic management model as illustrated by Wright et al. (1998:22) in figure 3.1.

Figure 3.1



(Source: Wright et al. 1998:22 adapted)

According to the strategic management model proposed by Wright et al. (1998:22), the core areas of strategic management are:

- Strategic analysis.
- Strategy formulation.
- Strategy implementation.
- Strategic control.

3.3.1 STRATEGIC ANALYSIS

Strategic analysis is concerned with understanding the relationship between the different forces affecting the organization and its choices of strategies (Johnson and Scholes, 1999:95).

Strategic management involves two levels of analysis:

- Analysis of the external environment.
- Analysis of the internal environment.

Miller (1998:68) emphasize that, although strategic analysis separates the external and internal analysis, these two components of analysis are not unrelated but are complementary for a complete strategic analysis.

3.3.1.1 External environment

Each organization exists within a complex network of environmental forces that can influence a firm's choice of direction and actions and, ultimately its organizational structure and internal processes (Pearce and Robinson, 2000:71).

Pearce and Robinson (2000: an organization's external environment consists of three interrelated set of factors/levels that play a role in determining the opportunities, threats, and constraints that the organization faces.

The three factors/levels of environmental analysis are:

- The remote or macro environment, which includes economical, social, political, technological, and ecological factors. The strategy of an organization is always constrained by what is legal, by what complies with government policies, and by what is socially accepted.
- The industry environment. Each organization operates within a more specific environment called the industry. The structure of the industry influences the intensity of competition among the firms in the industry (Wright et al. 1998:23). The factors that influence an organization's prospects more directly include entry barriers, competitor rivalry and the bargaining powers of buyers and suppliers. The organization should establish thus a strategy for dealing with competition in the industry.
- The operating environment comprises factors that influence an organization's immediate competitive situation such as customers profile, suppliers, and the labor market.

According to Miller (1998:73) an analysis, through environmental scanning, should be conducted on the external environment as part of the strategy formulation process, as the strategy of the organization must reflect the environment in which it operates. Hill and Jones (1998:102) agree with this point of view and explains that for an organization to succeed either its strategy must fit the environment in which the organization operates or the organization must be able to reshape this environment to its advantage through its choice of strategy.

Miller (1998:73) states that research repeatedly found strong links between an organization's performance and the alignment between the environment and the strategy

of the organization. He also external environment can influence the strategy of an organization in different ways, such as:

- Providing opportunities and holding threats.
- Shaping the "rules" of how the organization will compete in a given industry.
- Influencing the availability of critical resources.
- Affecting the likely return from alternative investments.

3.3.1.2 Internal environment

The focus of the analysis now turns from the external environment to take an inward look at the organization. The internal analysis will include the organization's mission, goals and objectives, as well as the analysis of the resources of the organization within the environment of the organization.

This step in the strategy process, where the organization's mission and goals are established, requires management to determine the direction in which the organization is to move in the external environment (Miller 1998:55). The two most basic questions that should be asked will be: "What business are we in?" and "Why are we in business?" These questions involve the mission, the scope of the organization and the objectives to be accomplished.

Pearce and Robinson (2000:27) summarize the mission of an organization as the fundamental purpose that sets a firm apart from other firms of its type and identifies the scope of its operations in product and market terms. The mission of an organization should be designed to accomplish the following:

- Ensure unanimity of purpose within the organization.
- Provide a basis for motivating the use of the organization's resources.
- Developing a standard for allocating organizational resources.
- Establish an organizational climate.
- Serve as a focal point for those who can identify with the organization's purpose.

- Facilitate the translatic nd goals into a work structure involving the assignment of tasks to responsible elements within the organization.
- Specify organizational purpose and the translation of the purpose into goals.

Wright et al. (1998:65) explains that whereas the mission is the reason for the existence of the firm, the organization's goals represent the desired general ends towards which efforts are directed. It is however essential that an organization carefully understand its mission, because a clear sense of purpose is necessary to establish appropriate goals.

Objectives are specific and often quantified, versions of the goals. Miller (1998:48) identified three main characteristics of an objective:

- The objective can be measured.
- The objective incorporates a time dimension. Measurement is next to meaningless without a time frame.
- The objective reduces conflict. Clearly stated objectives reduce misunderstanding and rivalry among organizational members.

Underlying the organization's mission is an analysis of its internal strengths and weaknesses that reside in its resources (Wright et al. 1998: 80).

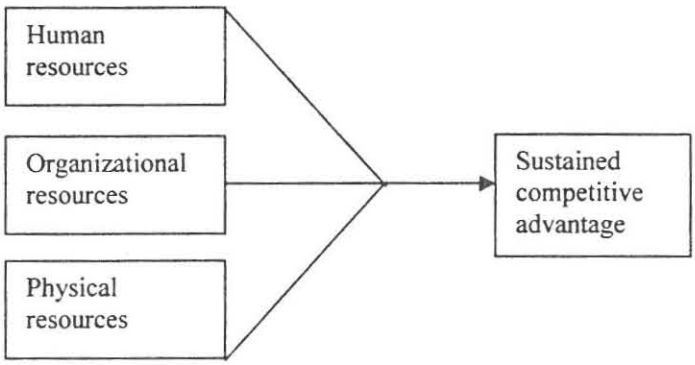
Wright et al. (1998:56) outline the resources of an organization as the following:

- Human resources: the experience, capabilities, knowledge, skills, and judgment of all the employees.
- Organizational resources: the firm's systems and processes, including its strategies, structure, culture, purchasing/materials management, production/operations, financial base, research and development, marketing, information systems, and control systems.
- Physical resources: plant and equipment, geographic locations, access to raw materials, distribution network, and technology.

Wright et al. (1998:56) explain that in an optimal setting, all three types of resources should work together to give a sustained competitive advantage.

Figure 3.2

SUSTAINED COMPETITIVE ADVANTAGE



(Source: Wright et al. 1998:56)

Resources analysis and allocation will be fully discussed in Chapter 4 of this study.

3.3.2. STRATEGY FORMULATION

3.3.2.1 Strategy development

Lynch (2000:20) explains that strategy is not simply a matter of taking a strategic decision and the implementation of the decision. It is more complicated and take time because there are people involved and because of a changing environment. Therefore the need to draw a distinction between the context, content, and process in the development of a strategy is important. The process is the method by which the strategies are derived; content is the strategic decisions then made and context is the environment within which the organization operates and develops its strategies.

According to Lynch (2000:23) there are two basic routes to be followed in the development of a strategy, namely the prescriptive approach and the emergent approach.

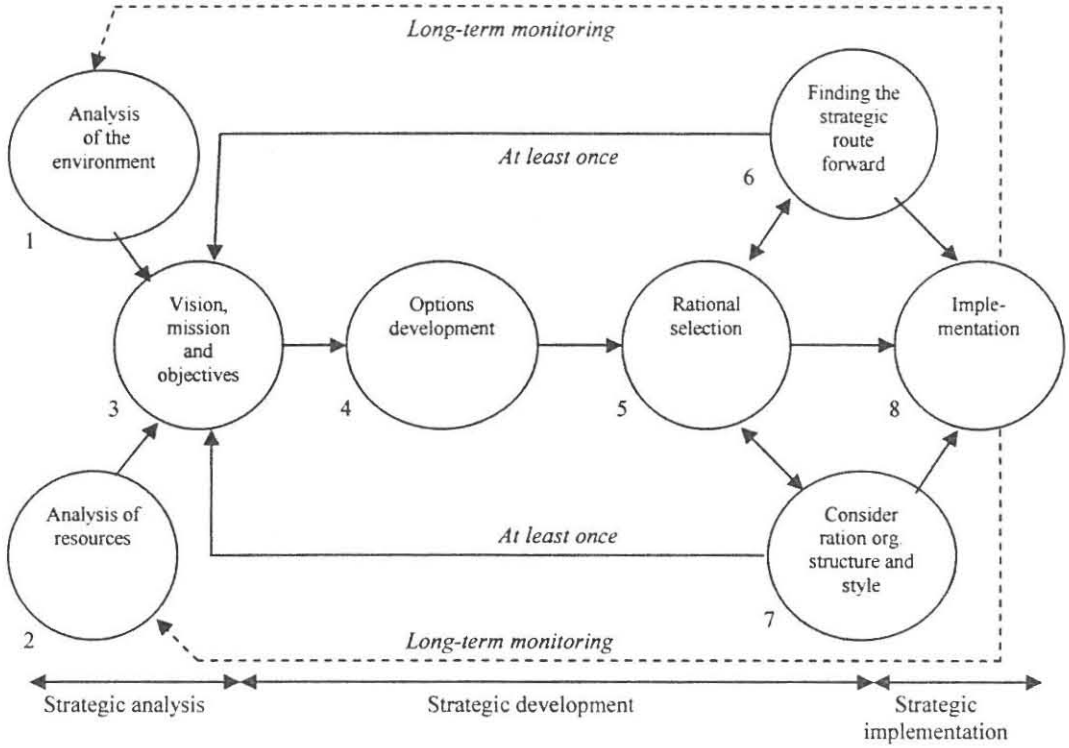
- The prescriptive approa[illegible]o this approach corporate strategy is essentially a linear and rational process. The objective has been defined in advance and the main elements have been developed before the strategy commences. Strategic analysis, strategic development and strategic implementation are linked together sequentially.
- The emergent approach takes the view that corporate strategy emerges, adapting to human needs and continuing to develop over time. It is continuous and cannot be easily summarized in a plan, which then requires to be implemented. Strategic analysis, strategic development and strategic implementation are essentially interrelated.

Figure 3.3 is an illustration by Lynch (2000:27) of the prescriptive and emergent strategic process.

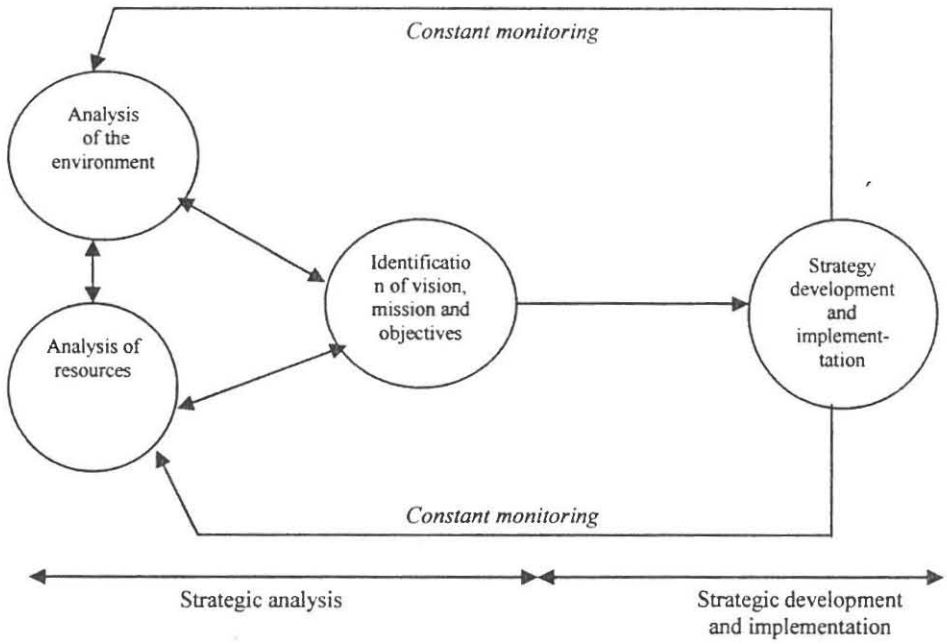
Figure 3.3

THE PRESCRIPTIVE AND EMERGENT STRATEGIC PROCESS

The prescriptive strategic pr



The emergent strategic process



(Source: Lynch, 2000:27)

3.3.2.2 Strategic options and

The mission, goals and objectives were defined in the strategic analysis phase. The next phase involves generating a range of strategic options/alternatives that might achieve the objectives of the organization, given the organization's internal strengths and weaknesses and its external opportunities and threats.

The comparison of strengths, weaknesses, opportunities, and threats is normally referred to as a SWOT analysis. The central purpose of the SWOT analysis is to identify strategies that align, fit or match an organization's resources and capabilities to the demand of the environment in which the organization operates (Hill and Jones 1998:7).

Lynch (2000:562) maintains that a SWOT analysis of the organization is a useful way of summarizing the current status of the organization and draws a distinction between the following two aspects of the organization:

- Strengths and weaknesses –explored in the resource-based analysis.
- Opportunities and threats – explored in the environment-based analysis.

Hill and Jones (1998:8) define strategic choice as a process of selecting among alternatives generated by a SWOT analysis. The organization has to evaluate various alternatives against each other with respect to their ability to achieve the goals of the organization. The process of strategic choice requires the organization to identify the set of operations-level, business-level, global-level, and corporate-level strategies that would best enable it to survive in the changing environment.

Corporate-level strategy. Wright et al. (1998:107) describe corporate-level strategy as the strategy that top management formulates for the overall company. The basic question is in what particular businesses or industries should we be operating? Hill and Jones (1998:308) emphasize that corporate strategies should add value to an organization, enabling it, or one or more of its business units, to perform one or more of the value

creation functions at a lower ıy that allows for differentiation and a premium price.

Business-level strategy. Hill and Jones (1998:8) explain that the business-level strategy encompasses the overall competitive theme that an organization chooses to stress, the way it positions itself in the marketplace to gain a competitive advantage, and the different positioning strategies that can be used in different industry settings. The question to be asked at the business-level is how should we compete in the chosen industry or business?

Global-level strategy. Miller (1998:277) believes that the internationalization of competition is inevitable. Managers in every industry will be either directly involved with or affected by international competition.

Operations-level strategy. Once the corporate-level and business-level strategies are developed, management must turn the attention to formulating strategies for each functional area in the organization. Hill and Jones (1998:143) explain that functional-level strategies are those strategies directed at improving the effectiveness of basic operations within an organization, such as production, marketing, research and development, materials management, and human resources. Wright et al. (1998:169) states that managers must be aware that the functional areas are interrelated. Each functional area, in attaining its purpose, must mesh its activities with the activities of the other functional departments.

Miller (1998:154) illustrates in figure 3.4 that all four-strategy levels are working together to attain and sustain competitive advantage.

Figure 3.4

(Source: Miller, 1998:154)

3.3.3 STRATEGY IMPLEMENTATION

Once managers have decided on a strategy, the emphasis turns to converting it into action, which is to implement the strategy. Implementation is necessary to spell out precisely how the strategic choices will come to be and involves a number of interrelated choices and activities.

Now that the strategy is formulated the following questions can be asked to determine the best way to organize the business to accomplish its mission. Where leadership should come from? What values should guide our activities each day? What should this organization and its people be like? (Pearce and Robinson, 2000:399). All these questions can be summarized as three levers through which managers could implement strategy, namely structure, leadership, and culture.

3.3.3.1 Organizational structure

Strategies are implemented through organizational structure.

Wright et al. (1998:201) defines organizational structure as the way that tasks and responsibilities are allocated to individuals and the way that individuals are grouped together into offices, and departments. Johnson and Scholes (1999:438) believe that structure is a means to an end and not the end in itself. Thompson (2001:583) emphasizes

that the purpose of structure is first to split up and separate the key activities and tasks, which the organization must carry out, and secondly to integrate and coordinate efforts to achieve synergies.

Lynch (2000:803) identifies six basic structural forms that are available to an organization, namely: the entrepreneurial structure, the functional structure, the matrix organizational structure, the multidivisional structure, the innovative organization structure and the holding company structure.

Wright et al. (1998:218) propose a checklist for determining appropriateness of organizational structure.

Checklist for determining appropriateness of organizational structure

1. Is the structure compatible with the corporate profile and the corporate strategy?
2. At the corporate level, is the structure compatible with the output of the firm's business units?
3. Are there to few or too many hierarchical levels at either the corporate or business unit levels of analysis?
4. Does the structure promote coordination among its parts?
5. Does the structure allow for appropriate centralization or decentralization of authority?
6. Does the structure permit the appropriate grouping of activities?

3.3.3.2 Leadership

Wright et al. (1998:229) explains that some people equate leadership with management, but believes that these two concepts are not synonymous. Pearce and Robinson (2000:416) agree with this opinion and maintain that management can be identified with skills and leadership with style. Management is about coping with complexity, while leadership, by contrast, is about coping with change. Pearce and Robinson (2000:416)

believe that organizational l :s two considerations: One is strategic leadership, the other management skills to cope with complexity.

Hills and Jones (1998:14) identified a few key characteristics of a good leader. These characteristics are: vision, eloquence and consistency; commitment; well informed; willingness to delegate and empower.

Why is leadership important? According to Lynch (2000:467) leadership sets the tone and instills the values of the organization. Leadership is also a vital ingredient in developing the purpose, strategy and overall direction of the organization.

3.3.3.3 Organizational culture

Thompson (2001:214) is of the opinion that culture affects every element of strategy and strategic management and defines culture as the way in which an organization performs its tasks, the way its people think, feel and act in response to opportunities and threats, the way in which objectives and strategies are set out and the way decisions are made. It reflects emotional issues, and it is not easily analyzed, quantified or changed.

A large organization is unlikely to be just one single definable culture. It is more likely to be a looser or tight amalgam of different cultures.

In Thompson (2001:214), Charles Handy propose four cultural types. These are the power culture, the role culture, the task culture and the person culture.

What is the effect of culture on strategy? Pearce and Robinson (2000:432) argue that organizational culture may be a major help or hindrance regarding the implementation of strategic actions. Wright et al. (1998:251) maintains that successful strategic implementation requires a strategically appropriate culture. One that is appropriate to, and supportive of the firm's strategy.

3.3.3.4 Strategic planning

What is strategic planning? Jauch and Glueck (1995:5) claim that there are as many definitions for strategic planning as there are experts on strategic planning.

Some of the definitions on strategic planning are as follows:

Bennett (1999:325) describes planning as the deliberate and systematic determination of what to do in the future in order to fulfill the organization's mission and to meet its objectives. Planning involves the decomposition of problems and issues into their component parts, application of rational analysis to the interpretation of information, and the selection of actions to achieve predetermined ends.

Lynch (2000:780) emphasizes that strategic planning will pilot the prescriptive strategic route forward. Planning is not just the implementation, but also the whole strategy process from mission and objectives through to the control system.

Henry Mintzberg argues that the practice of strategic planning is in fact strategic programming and that strategic programming involves the codification, elaboration and conversion of strategies that have already been developed (O'Shannassy, 2003:57).

To summarize, we can conclude that strategic planning means the determination of how the organization will attain its strategic objectives through plans and policies. These plans and policies will guide the actions that indicates how resources are to be allocated to execute the organization's strategy.

What is the purpose of strategic planning? According to Bennett (1999:325) the essential purpose of planning is that planning relates the organization to its environment, co-ordinate complex activities, utilize the talents of a range of people in taking important decisions and improve organizational efficiency and facilitate the implementation of change. Lynch (2000:781) on the other hand, emphasize that the real purpose of effective

planning is not to make plans mental models that decision makers carry in their heads.

Grant (2002:215) outline the elements of a strategic plan as follows:

- A statement of goals, thus what the organization seeks to achieve over the planning period with regard to financial targets and strategic goals.
- A set of assumptions and forecasts in respect of the external environment of the organization.
- A qualitative statement regarding how the shape of the organization will be changing in relation to geographical and segment emphasis.
- Specific action steps with regard to decisions and projects, as well as what to be achieved by specific dates.
- A set of financial projections.

According to Lynch (2000:780) there are the following three basic approaches to strategic planning.

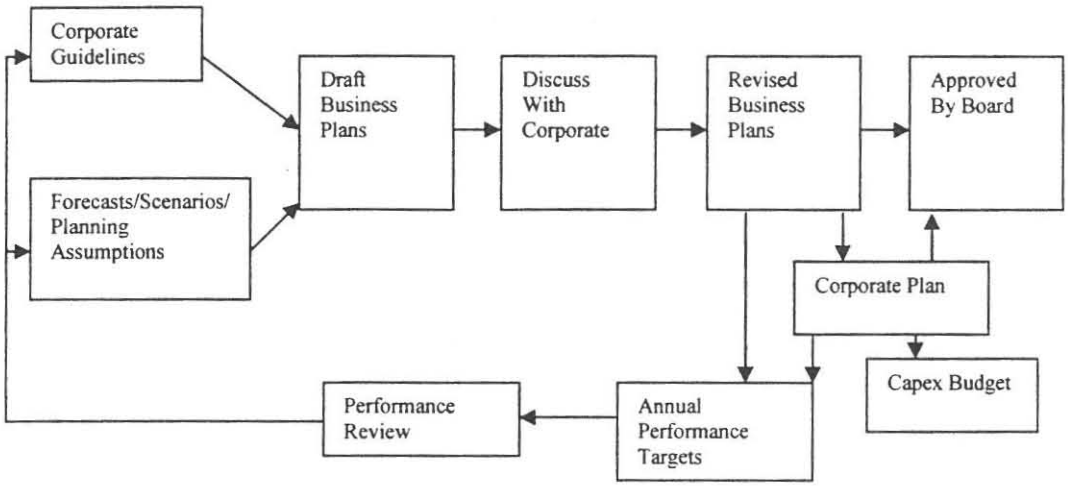
- Top down. Planning is initiated and conducted by the centre of the organization.
- Bottom up. Planning is the responsibility of the individual parts/departments.
- Integrated. There is a continuing discussion involving both the centre and the individual departments.

According to Bennett (1999:334) a planning cycle is used to denote the periodicity of planning activities. Grant (2002:215) makes it clear that the strategic planning process traditionally follows an annual cycle, but strategic plans tend to be for three to five years.

In figure 3.5 Grant (2002:216) illustrates a typical strategic planning cycle.

Figure 3.5

THE GENERIC STRATEGIC PLANNING CYCLE



(Source: Grant, 2002:216)

3.3.3.5 Resource allocation

Most strategies need resources to be allocated to them if they are to be implemented successfully. Strategists have the power to decide which divisions and departments receive what amount of money, which facilities, and which executives. The primary tool for making these resource allocations is the budget process.

Resource allocation and the budgeting process will be fully discussed in chapter 4 of this study.

3.3.4 STRATEGIC CONTROL

The last phase of the strategic management process is evaluation.

Hill and Jones (1998:382) define strategic control as the process by which managers monitor the ongoing activities of an organization and to evaluate whether activities are

being performed efficiently and then to take action to improve performance, if necessary. According to Wright et al. (1998:274) strategic control consists of determining the extent to which the organization's strategies are successful in attaining its goals and objectives.

In strategic control the focal time period usually ranges from a few years to more than a decade. Pearce and Robinson (2000:443) agree that strategies are forward looking, designed to be accomplished several years into the future and are based on management assumptions about numerous events that have not yet occurred.

How should managers evaluate and control a strategy?

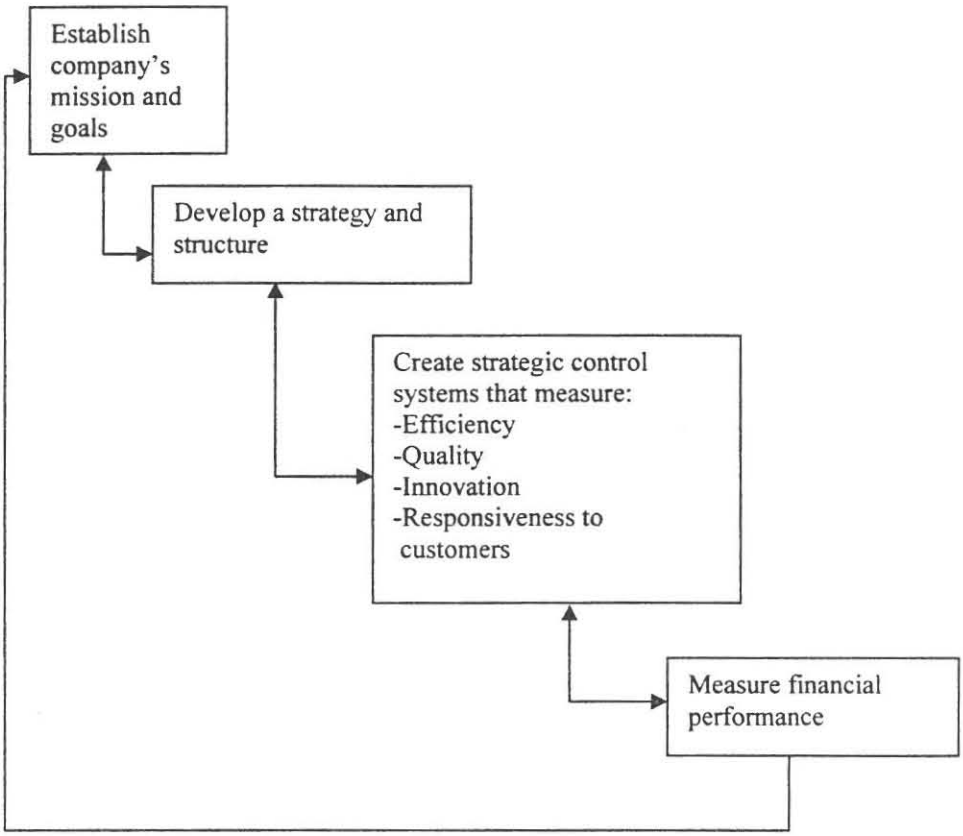
Evaluating an organization's performance may be accomplished in a number of ways. For instance, the use of financial measures of performance such as profit or the return on investment. Hill and Jones (1998: 384) argue that financial indicators and information is not enough by itself and must be supplemented with performance measures that indicate how well an organization has been achieving the four building blocks of competitive advantage – efficiency, quality, innovation, and responsiveness to customers.

Hill and Jones (1998:384) propose a model, the balance scorecard, that can guide managers through the process of creating the right kind of strategic control system to enhance an organization's performance. According to Lynch (2000:793) the balance scorecard combines the quantitative and qualitative measures of the selected strategy. It also acknowledges the different expectations of the various stakeholders and it attempts to link scorecard performance measures to the chosen strategy.

The balance scorecard, as illustrated by Hill and Jones (1998:384), is presented in figure 3.6. below.

Figure 3.6

BALANCED SCORECARD



(Source: Hill and Jones, 1998:384)

Hill and Jones (1998:406) state that strategic control takes place at all levels in the organization: corporate, divisional, functional, and individual. They also explain that there are various types of strategic control systems that can be used to monitor and coordinate organizational activities. These types of control systems are:

- Financial controls – Stock price, return on investment.
- Output controls – divisional goals, functional goals, and individual goals.
- Behavior controls – budgets, standardization, rules and procedures.
- Organizational culture – values, norms, socialization.

3.4 STRATEGIC MANAGEMENT IN HIGHER EDUCATION

Maassen and Van Vught (1999:185) explain that "strategy" and the two adjectival derivations "strategic planning" and "strategic management" have invaded higher education. The question may be asked if these concepts, borrowed from the business and corporate sector, have any meaning in higher education. It is clear that strategic management is needed in higher education to deal effectively with the changing environment and the changing circumstances in which higher education have to operate. It is increasingly expected of higher education institutions to have a clear idea of where they are heading to as well as what they want to achieve in the future.

The vision, strategic goals and objectives for higher education, are as follows:

Vision for higher education

The White Paper (1997:11) sets out the Ministry's vision for higher education as a transformed, democratic, non-racial and non-sexist system that will:

- Promote equity of access and a fair chance to succeed.
- Meet the national development needs.
- Support a democratic ethos and a culture of human rights.
- Address the diverse problems and demands of the local, national, Southern African and African contexts.

Strategic goals and objectives for higher education

Higgans and Vincze (1993:7) explain that strategic goals are the broad statements of the institution's purpose and define the mission, while strategic objectives are the definitive statements of the criteria needed to accomplish the goals of the institution.

Strategic goals and objectives, for higher education, as set by the Department of Education are as follows:

Strategic goals

"We must implement a rational, seamless higher education system that grasps the intellectual and professional challenges facing South Africans in the 21st century." (Tirisano 2002:30).

Strategic objectives

The strategic objectives of the Ministry, according to Tirisano (2002:32), are the following:

- Providing a framework, as well as leadership for the restructuring of the higher education systems.
- Improving management and service delivery in relation to the registration of private institutions.
- Advocacy and communication with the public around private institutions.
- Improve the mechanisms for evaluation and accreditation of research outputs to improve and support the development of research capacity.

Strategic planning

The National Plan for Higher Education of 2001 outlined the implementation framework for achieving the vision, mission and goals for higher education. It also provided the framework for the development of institutional plans, in the form of the three-year "rolling" plans.

Higher education institutions will have to indicate in the three-year "rolling" plans the strategies they will put in place to:

Increase participation rates and graduate outputs:

- Improve throughput, success and graduation rates.
- Reduce dropouts.
- Develop minimum criteria for automatic admission into different academic programs.
- Develop a selection process to determine the suitability of applicants who do not meet the minimum criteria for automatic admission.
- Develop minimum criteria for the readmission of students.
- Increase the recruitment of workers, mature learners, in particular women, and the disabled.
- Increase the recruitment of students from SADC countries.

Change the enrolments by fields of study:

- Indicate the institutional shape profile in terms of the balance between the humanities, business and commerce and science, engineering and technology.
- Restructure the curricula content and framework of all programmes to ensure that they develop the cognitive skills of all graduates.

Increase equity:

- Increase the access of black, women and disabled students.
- Redress the imbalances in the enrolments of students in different programmes, fields of study.
- Redress imbalances in the success and graduation rates of students.
- Ensure that teaching/learning processes are sensitive to the needs of different students.

Improve staff equity:

- The development and implementation of equity plans.

Promote research:

- Improve graduate outputs at masters and doctoral level.
- Redress imbalances in black and women enrolments in masters and doctoral programmes.

- The recruitment of masters and doctoral students from the rest of Africa.

The strategy in the public sector, that is government-owned organizations, such as in higher education, is usually governed by broader public policy concerns, rather than by profit. It appears that strategy and strategic management is useful and important too all the different sectors, but there are clear differences, especially of emphasis.

3.5 SUMMARY

From this chapter it becomes evident that strategic management forms an important part of an institution's responsibility. It also showed that the strategic management process consisted of four definite phases that follows each other and that should be adhered to. It also became apparent that in order for any higher educational institution to achieve its objectives the implementation phase is regarded as ultimately important.

During the implementation phase resources are defined and allocated according to chosen strategies. The next chapter explores resources as a means of which an institution can generate values. In order to ensure that the highest return on investment can be achieved an institution should be in possession of a definite value structure that reflects its vision and mission.

CHAPTER 4

ORGANIZATIONAL RESOURCES

This chapter explores resource analysis and resource allocation.

4.1 INTRODUCTION

In the previous chapter the core areas needed to enable institutions to develop, implement and control strategies were discussed by means of the proposed model by Wright et al. (1998:3). These strategies are instrumental in the determination of the resources needed by the institution and the way it will be allocated.

In this chapter the resources are explored as a means of which an institution can generate value in order to ensure the highest return on investment. A model proposed by Lynch (2000:247) serves as the means by which the discussion of resource analysis will be conducted. The main interest will be the identification of resources that have the potential to establish a sustainable competitive advantage for the institution. A second interest is the allocation of resources to the different sections and departments.

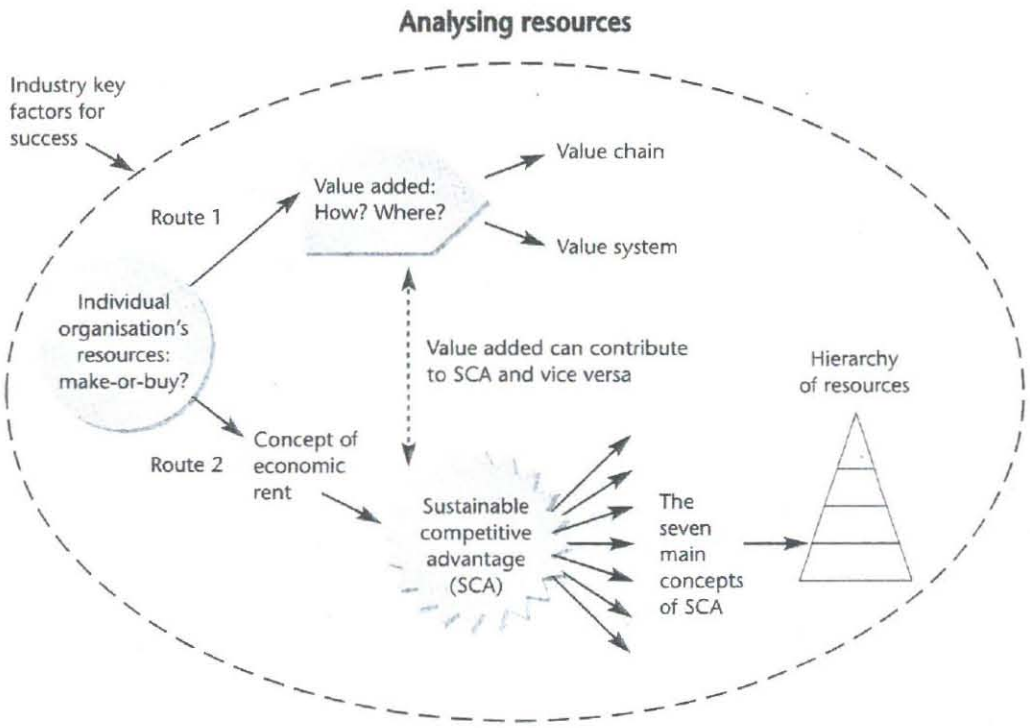
4.2 RESOURCE ANALYSIS

One of the core areas of strategic management is strategic analysis, which includes resource analysis. The discussion on resource analysis will be generic, but it may be emphasized that all the concepts of strategic management, including resource analysis, applies to all organizations that operates in a competitive advantage situation and that will include higher education institutions (Vaghefi and Hueilmantel, 1999:166).

Resource analysis will be discussed by using the resource analysis model proposed by Lynch (2000:247).

Figure 4.1

RESOURCE ANALYSIS MODEL



(Source: Lynch, 2000:247)

4.2.1 Organizational resources

Resources

Lynch (2000:242) and Grant (2002:139) describe the resources of the organization as those assets that generate value for the organization, the means by which one organization distinguishes itself from other organizations.

Lumpkin (2003:83) defines organizational resources to include all assets, capabilities, organizational processes, information, knowledge etc., under the control of the organization that enables it to develop and implement value-creating strategies.

Resources are tangible, visibl[illegible]isure, while capabilities are less tangible and resulted from the organization's resources, internal systems, and skills. Resources and capabilities are seldom unique and many will be widely held by the competitors in the same industry (MacMillan and Tampoe, 2000:114).

Core competence

Core competence is defined as a technical or managerial subsystem, which integrates technologies, processes and resources to deliver products and services that provides sustainable competitive advantage to the organization (MacMillan and Tampoe, 2000:120). Johnson and Scholes (1999:959) summarize this concept as the competences which underpin the organization's competitive advantage.

Figure 4.2 illustrates the three key categories of resources that an organization can possess namely tangible resources, intangible resources and organizational capabilities.

Figure 4.2

RESOURCE-BASED VIEW OF THE FIRM:

ORGANIZATIONAL RESOURCES

TANGIBLE RESOURCES	
Financial	Firm's cash account and cash equivalents
	Firm's capacity to raise equity
	Firm's borrowing capacity
Physical	Modern plant and facilities
	Favorable manufacturing locations
	State-of-the-art machinery and equipment
Technological	Trade-secrets
	Innovative production processes
	Patents, copyrights, trademarks
Organizational	Effective strategic planning processes
	Excellent evaluation and control systems

INTANGIBLE RESOURCES	
Human	Experience and capabilities of employees
	Trust
	Managerial skills
	Firm-specific practices and procedures
Innovation and creativity	Technical and scientific skills
	Innovation capacities
Reputation	Brand name
	Reputation with customers for quality and reliability
	Reputation with suppliers for fairness, non-zero-sum relationships

ORGANIZATIONAL CAPABILITIES
Firm competences or skills the firm employs to transfer inputs to outputs. Capacity to combine tangible and intangible resources, using organizational processes to attain desired end. Examples • Outstanding customer service. • Excellent product development capabilities. • Innovativeness of products and services. • Ability to hire, motivate, and retain human capital.

(Source: Lumpkin, 2003:83)

Resource audit

A resource audit should be conducted during the internal analysis phase of strategy formulation. Johnson and Scholes (1999:153) maintain that a resource audit identifies and classifies the resources that an organization owns or can assess, and are all the resources that are available to the organization to support its strategies. According to MacMillan and Tampoe (2000:115) a resource audit imply an analysis of the quality and quantity of

the resources available to the organization. Johnson and Scholes (1999:153) claim that a resource audit should attempt to assess the nature of the resources available to the organization, as well as the extent to which the resources are unique.

4.2.2 Resource analysis and added value

This section of resource analysis explores the value that resources contribute to the organization.

4.2.2.1 Adding value: The fundamental role of resources in an organization

According to Lynch (2000:262) the fundamental role of resources in an organization is to add value. Resources add value by transforming the raw materials into finished goods.

Lynch (2000:262) explains the concept of "added value" as the difference between the market value of outputs, which is the sales revenue, and the cost of inputs. The cost of inputs is the cost of labor, materials, and capital. The value added in a service organization is the difference between the service product and the cost of inputs.

Value can be added in two ways:

- Either by raising the value of outputs.
- Or by lowering the cost of inputs.

Both routes could be used simultaneously.

Grant (2002:144) is of the opinion that resources are not very productive on their own and should be linked with other resources of the organization. Johnson and Scholes (1999:171) explain resource leverage as a measure of the improvement in performance achieved through the management of linkages of separate resources and activities.

Hamel and Prahalad (2001:40-49) and Grant (2002:151-152) explain that management can leverage its resources in five ways, namely:

Concentrating resources

The question can be asked if organizations have been loyal to their strategic goals, as well as consistent in their pursuit. Leverage requires a strategic focal point –a strategic intent- on which all efforts can converge over time. This is, according to Segal-Horn (2001:83) not true for most organizations and therefore resources are squandered on neither competing projects nor departments.

Accumulating resources

Accumulating resources, through mining experience, in order to achieve faster learning and borrowing from other organizations. The organization should extract knowledge from employees in a corporate climate where people feel free to challenge long-standing practices, as well as forums where common problems can be identified.

"Borrowing" resources of other organizations involves not only gaining access to the skills of a partner, but also internalizing those skills.

Complementing resources

Management can transform the resources of the organization by blending different types of resources in ways that multiply the value of each of the resources. Technological and functional integration are forms of skills that involve the blending of resources.
Balancing is another approach to complementing resources. The organization should pursue high standards across the board and not only in some areas and mediocrity standards in another.

Conserving resources

This is about utilizing resources and capabilities to the fullest by recycling them through different products and markets. The more often a given skill or competence is used, the

greater the resource leverage. Recycling requires a strong organizational foundation and a view of the organization as a pool of widely accessible skills and resources.

Co-option is another route to conserving resources through collaborative arrangements with other organizations. The question is if the organization can convince other organizations that they have a stake in the success of the organization.

Recovering resources

The time between the expenditure of the resources and their recovery through revenues is another source of leverage. The more rapid the recovery process, the higher the resource multiplies. The organization that has built a highly esteemed global brand will have customers trying their new product.

4.2.2.2 Adding competitive value: The value chain and value system

A competitive advantage is the edge that one organization has over other organizations.

Value chain analysis

Stonehouse, Hamill, Campbell and Purdie (2000:51) define value chain analysis as a technique for understanding an organization's value, adding activities, and the relationship between them. The value chain can be a useful way of describing and analyzing the important relationships between an organization's resources, competences and strategies. The value chain identifies the activities within the organization that create value (Besanko, Dranove and Shankey, 2000:404). Stonehouse et al. (2000:52) summarize the value chain as the chain of activities that results in the final value of an organization's product.

Grant (2002:146) maintains that a value chain analysis separates the activities of the organization into a sequential chain, and that the value chain distinguishes between the

primary activities and the su[illegible] the organization. Johnson and Scholes (1999:157) describe the primary activities as those activities that are directly concerned with the creation or delivery of a product or service and can be grouped into five main areas: inbound logistics, operations, outbound logistics, marketing and sales, and service. The support activities are those activities that help to improve the effectiveness and efficiency of the primary activities and can be divided into four main areas: procurement, technology development, human resource management and infrastructure.

According to Stonehouse et al. (2000:53) a value chain analysis should also identify the core activities that relate closely to the organization's core competence, that will include activities which:

- Add the greatest value;
- Add more value than the same activities in competitor's value chains;
- Relate to and reinforce core competence.

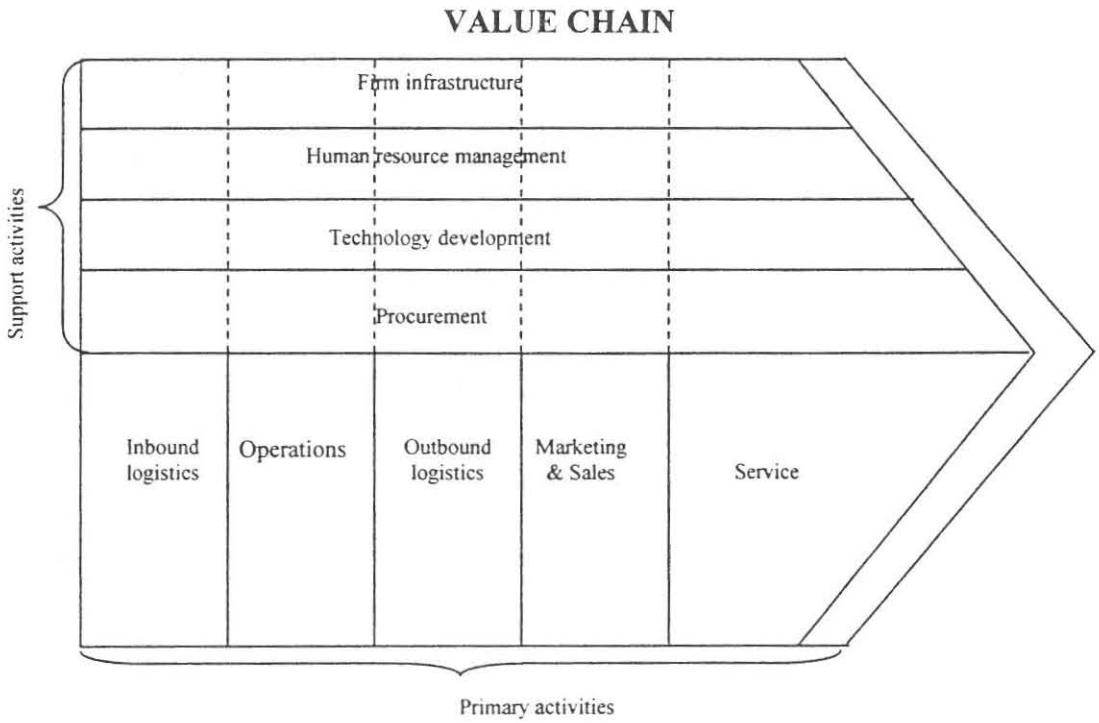
Lumpkin (2003:96) explains the process for conducting a value chain analysis as follows: The organization should first be divided into a series of value creating activities, which include the primary activities and support activities. Then analyze how each activity adds value, the interrelationships among value activities in the organization, and lastly analyze the relationships among activities within the organization with other organizations.

A value chain analysis will therefore include:

- A breakdown and analysis of all the activities of the organization;
- An examination of the match between configuration and current strategy;
- Identification of internal and external linkages between activities which result in additional added value;
- Identification of blockages that reduce the organization's competitive advantage. (Stonehouse et al. 2000:53).

Figure 4.3 illustrates the value chain.

Figure 4.3



(Source: Lynch, 2000:267)

Lynch (2000:298) concludes that the task of the value chain is to develop sustainable competitive advantage by considering the various parts of the organization and the value that each part adds, where this take place and how the contribution is made. It clearly identifies where value is added in the different parts of the organization and where the organization may have a competitive advantage. Ambrosini (1998:43) summarizes the importance of the value chain as an excellent means of disentangling the complexities to reveal what really is going on between the organization and its markets.

Value systems

It may also be necessary to consider the value system of the organization, in addition to the analysis of the organization's value chain.

Stonehouse et al. (2000:56) explain that the value system is the chain of activities from the supply of resources through to the final consumption of a product. The value system shows the organization as part of a wider system and illustrates the interaction between the organization, its suppliers, distribution channels and customers.

4.2.2.3 Resources and economic rent

Lynch (2000:277) defines economic rent as any excess that a factor earns over the minimum amount needed to keep that factor in its present use. Economic rent is important in strategy analysis because it shows the scarcity of some resources and the possibility of alternative uses for a resource.

4.2.2.4 Resources and sustainable competitive advantage

Lumpkin (2003:85) makes it clear that it is important to note that resources by themselves are not a basis for competitive advantage, nor are advantage sustainable over time, because competitors quickly imitate or substitute its resources.

For a resource to provide an organization with the potential for a sustainable competitive advantage, it must have the following attributes, according to Lumpkin (2003:85):

Value: Organizational resources can be a source of competitive advantage only when they are valuable. Resources are valuable when they enable an organization to formulate and implement its strategies that will then improve the efficiency and effectiveness of the organization.

Rarity: A resource is not a source of competitive advantage, if the competitors or potential competitors also possess the same valuable resource, because all these organizations have the capability to exploit that resource in the same way.

Imitability: If a resource can easily being copied by the competitors it only generates temporary value.

Substitutability: To be a source of sustainable competitive advantage it must not likely to be substituted by competitors.

Lynch (2000:280) adds the following elements of resources that may be associated with sustainable competitive advantage:

Durability: Durability is about sustainability. A resource must have longevity.

Appropriability: The resource should be appropriate to the organization. The resources of the organization must deliver the results of their advantage to the organization and not be forced to distribute part of it to the competitors.

Competitive: The resources must be comparatively better and should add greater value than that of the competitors.

Stonehouse et al. (2000:126) add one more attribute for sustainable competitive advantage, namely:

Adaptability: Resources can be leveraged to give competitive advantage.

Stonehouse et al. (2000:125) summarize the qualities of resources as follows: Resources are valuable in creating competitive advantage when they are superior to those of the competitors, when they are not accessible to the competitors and when they cannot be substituted or copied.

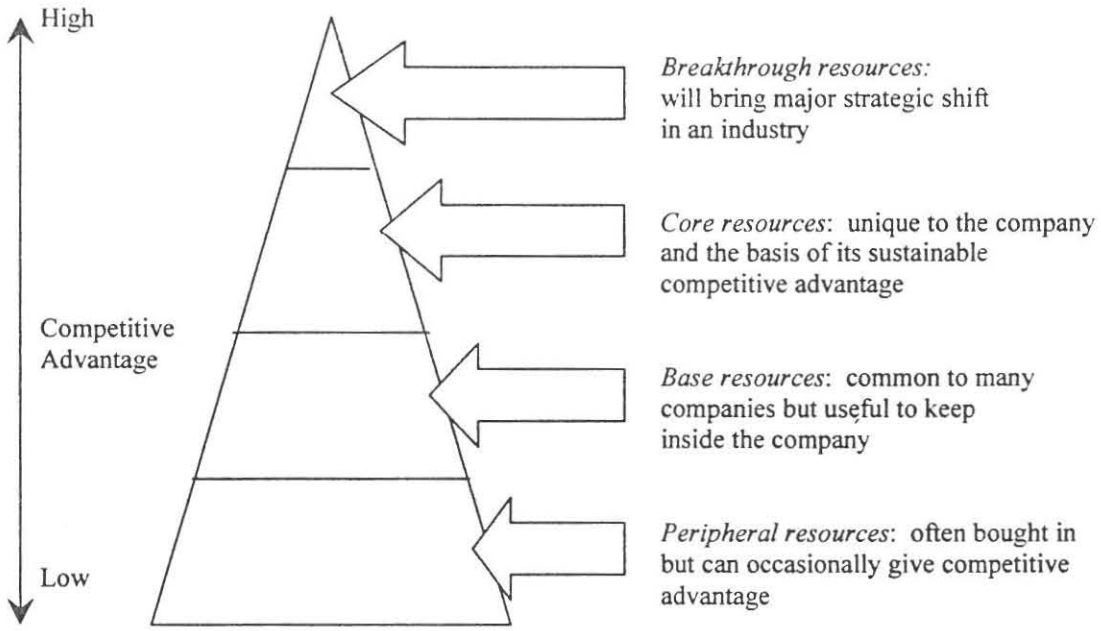
4.2.2.5 The hierarchy of res

The resources of an organization can be divided into four categories depending on their sustainable competitive advantage abilities, namely breakthrough resources, core resources, base resources and peripheral resources (Lynch, 2000:283).

Figure 4. 4 illustrate and explain the hierarchy of resources.

Figure 4.4

THE HIERARCHY OF RESOURCES



(Source: Lynch, 2000:283)

4.3 RESOURCE ALLOCATION

Bush (2000:1) argues that resource allocation is not simply a routine administrative process, but it is a means of expressing the values of the organization.

Resource allocation is about how people and the other resources of the organization might be organized (Johnson and Scholes, 1999:445). Lynch (2000:777) explains that the resource allocation process is used to provide the necessary funds for proposed strategies. Thompson and Strickland (1998:261) agree with Lynch and explain that corporate strategy can decide what the priorities should be for allocating resources to the various units/departments in an organization. Johnson and Scholes (1999:445) make it clear that the allocation of resources should be in such a way as to create and sustain competitive advantage.

The corporate strategists should decide on the resource allocation priorities and on a general strategic direction for each business unit or department. The task here is to come to a conclusion about which department should have top priority for corporate resource support and which department should carry the lowest priority. Ranking the departments from the highest to the lowest also clarify management's view about what the basic strategic approach for each department should be:

- Invest-and -grow (aggressive expansion).
- Fortify-and-defend (protect current position by strengthening and adding resource capabilities in needed areas).
- Overhaul-and-reposition (make competitive strategy changes to move the organization into a different and stronger industry position).
- Harvest-divest (disinvestment).

(Thompson and Strickland, 1998:261)

According to Lynch (2000:775) there are three criteria that can be used when allocating resources.

- The contribution of the proposed resources towards the fulfillment of the organization's mission and objectives. The resource allocation task is to steer resources away from areas that are poor at delivering the organization's objectives and towards those that are good.
- Its support of key strategies. The problem with resource allocation is that the requests for funds are normally more than the funds that are available. This is then an indication that there needs to be further selection mechanism beyond the delivery of the organization's mission and objectives.
- The level of risk associated with a specific proposal. It is clear that if the risk is higher there is a lower likelihood that the strategy will be successful.

The primary approach to resource allocation is through the budgeting system. It is important to remember that resource allocation, as expressed in the budgets, needs to be carefully linked to strategy.

4.4 THE RESOURCE ALLOCATION PROCESS IN HIGHER EDUCATION INSTITUTIONS

Harold (2000:1) claims that over the last two decades many higher education institutions have undertaken a fundamental review of their internal resource allocation mechanisms in response to environmental pressure. Bush (2000:1) is of the opinion that the shift in self-management in educational institutions has changed the context of resource allocation and also shows the importance of the resource allocation process.

4.4.1 Centralizing/Decentralizing resource allocation

4.4.1.1 Centralizing resource allocation

Higher education institutions, traditionally, controls resources from the center. Centralized budgeting generally prohibits operating units from shifting funds among budget categories. Centralized resource allocation systems are generally recognized to be

less effective than systems where goals are shared, operating units empowered to decide how best to attain the goals, and where performance feedback are maintained through after- the- fact accountability (Massy, 1999:11).

The budgeting systems for centralized resource allocation are the incremental line item budgeting system.

Incremental line item budgeting

Schmidtlein (2001:6) explains that incremental budgeting involves that a budget "base" be established for a particular year where after additions to or deletions from the base could then be determined.

Massy (1999:12-14) explains the assumption/principles of the traditionally line item budgeting in higher education as:

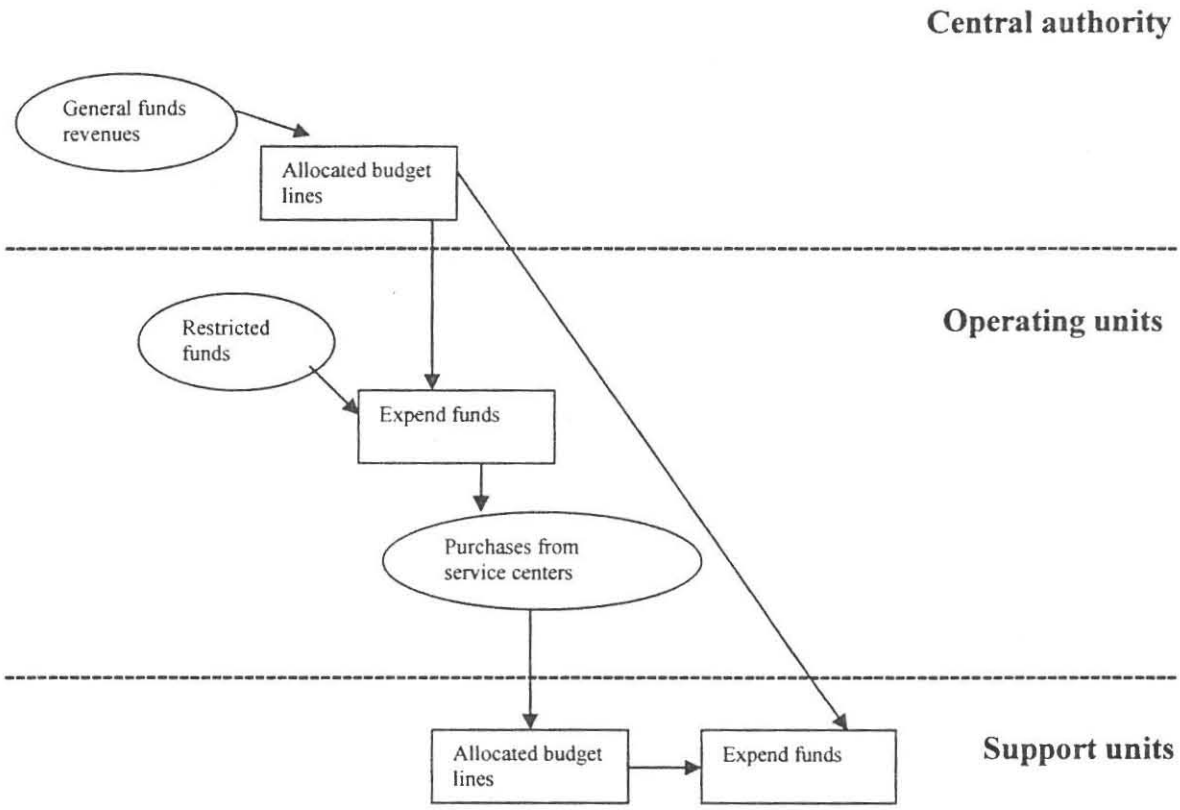
- Property rights. Once a program has been approved, that program has a right to continue unless circumstances change dramatically. The property rights principle means that the purchasing power of the existing budget base should be protected as a first priority and that the reductions can be imposed only after due process.
- Academic time constants (the gestation of academic work and the duration of faculty employment contracts) are simply too long to accommodate short-term financial fluctuations. Central authorities should shield schools and departments from financial fluctuations and revenue shortfall should be covered from central reserves.
- Central administration should take responsibility for the financial health of academic units. Not to maintain adequate funding for a school or department is perceived as an institutional failure.

The three assumptions/principles transform resource allocation from an exercise in investment, where scarce resources are put to the best possibilities, to an exercise in coping and conflict management.

Figure 4.5 shows the line-item s flow diagram.

Figure 4.5

LINE-ITEM BUDGETING PROCESS FLOW DIAGRAM



(Source: Massy, 1999:15)

4.4.1.2 Decentralizing resource allocation

Harold (2000:2) believes that over the last two decades higher education institutions had enhanced devolution of budgetary responsibility to the departmental, school or faculty level. Sandbach and Thomas (1999:63) conclude that irrespective of the level of devolution within an institution, there has to be some mechanism for allocating resources.

Performance responsibility budgeting (PRB), revenue responsibility budgeting (RRB) and value responsibility budgeting (VRB) represents decentralization resource allocation methods (Massy, 1999:14).

Performance responsibility budgeting

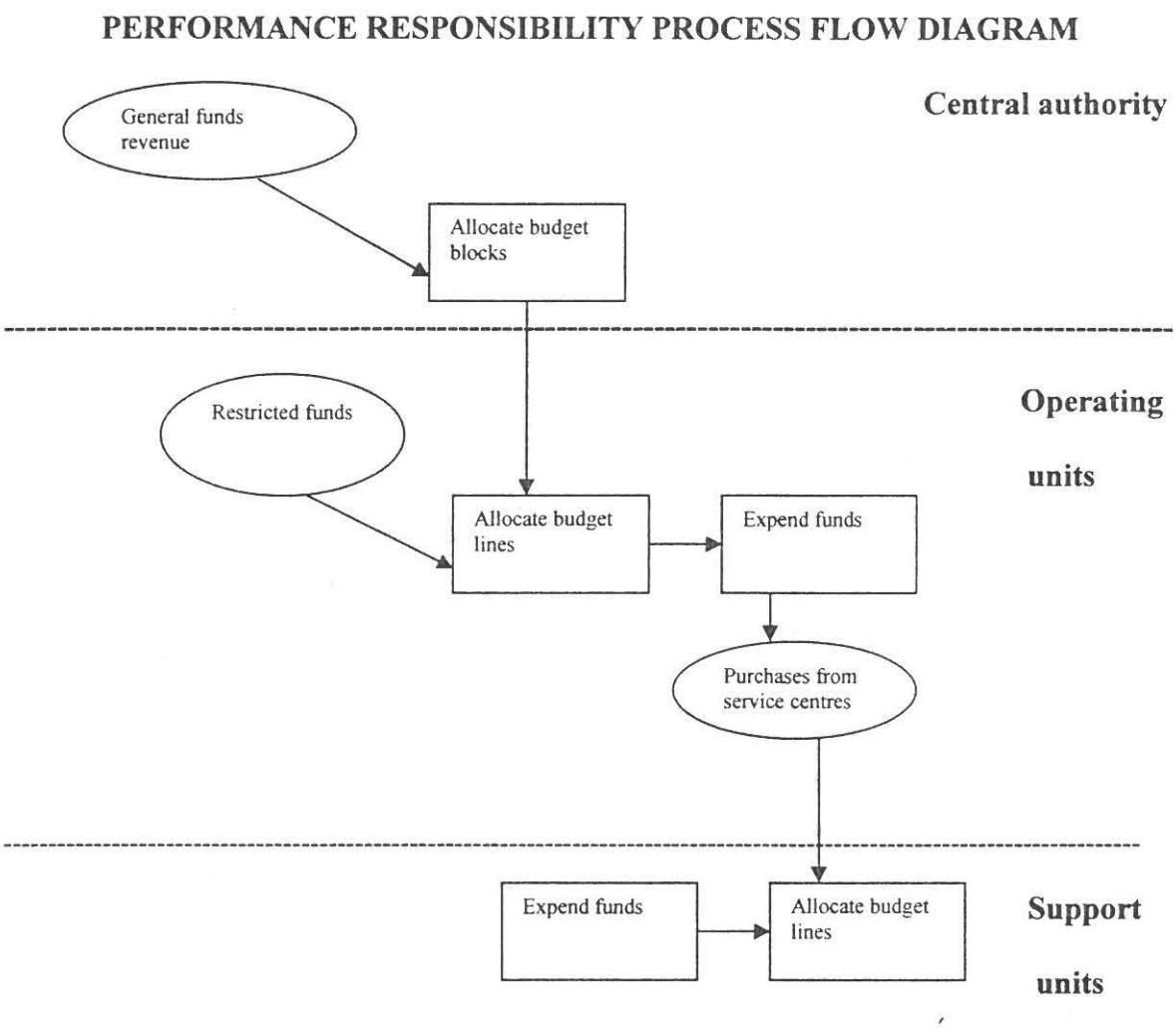
In PRB, the central authority allocates funds to the operating units in blocks, which can be used as the unit head sees fit. The unit head must allocate resources to lower-level units, which eventually determine individual budget lines against which expenditure can be controlled. The rest of the system works the same as the line-item budgeting, the critical difference being that in the PRB budgeting, those closest to the production process makes the eventual line-item allocation decisions.

In PRB the central authority determines the size of the block grant by first applying a costing formula and then modifying the block according to judgments based on the unit's performance and plan for the future. The costing formula may adjust last year's allocation for inflation or take student numbers and other cost drivers into account.

The main disadvantages of PRB are that PRB dilutes the effect of market forces and tends to smooth other differences among academic units (Massy, 1999:18).

Figure 4.6 shows the performance responsibility process flow diagram.

Figure 4.6



(Source: Massy, 1999:16)

Revenue responsibility budgeting

In RRB, the central authority allocates revenue lines instead of expenditure lines. Each operating unit is responsible for both its revenue and expenditure. General reserves are used to fund central overheads and subventions. Operating unit's budgets depend on their ability to generate revenue and that make the system more sensitive to market forces.

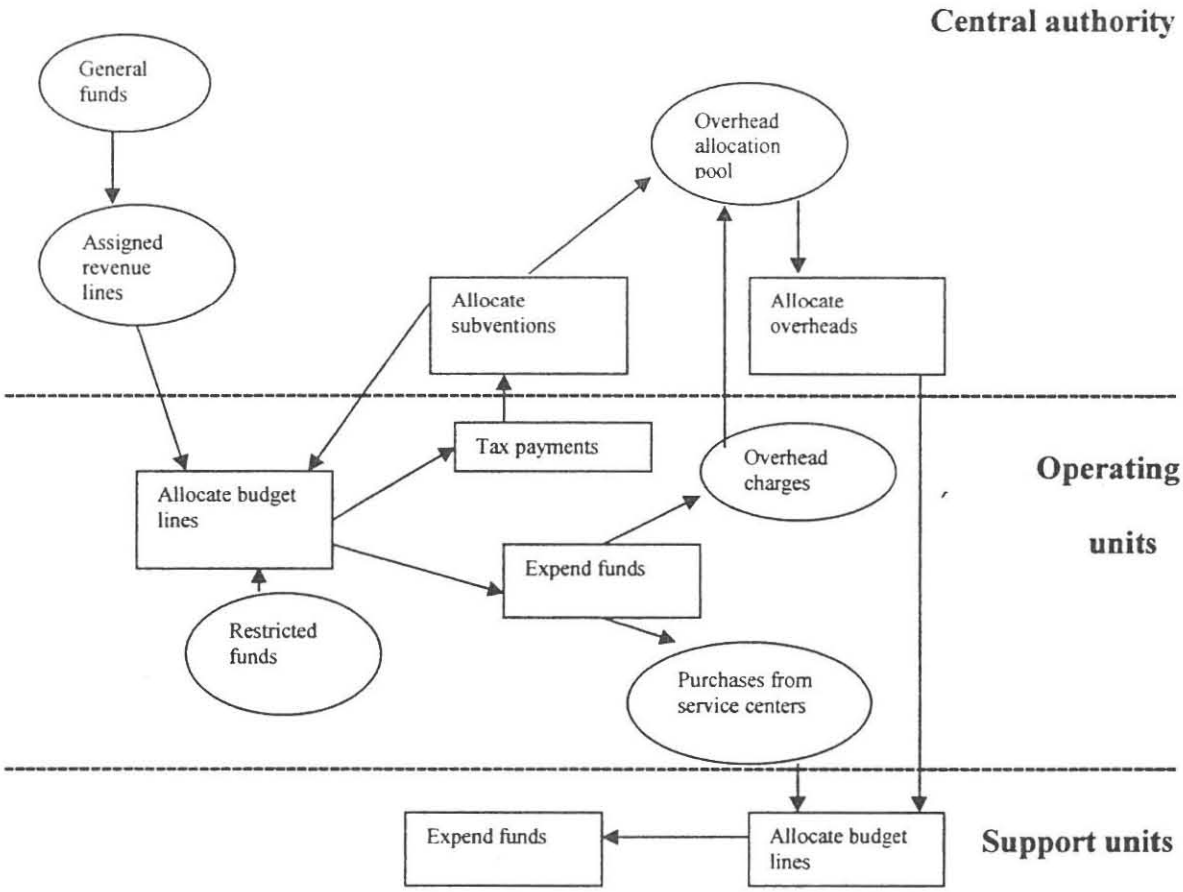
According to RRB the operating units are not allowed to expend all their assigned revenues. Taxes are levied as a percentage of revenue and these taxes will go back to central authority for redistribution in the form of subventions.

RRB maximizes entrepreneurship and responsiveness to market forces, but it may prevent the organization to reach its strategic objectives.

Figure 4.7 shows the revenue responsibility budgeting process flow diagram.

Figure 4.7

REVENUE RESPONSIBILITY BUDGETING PROCESS FLOW DIAGRAM



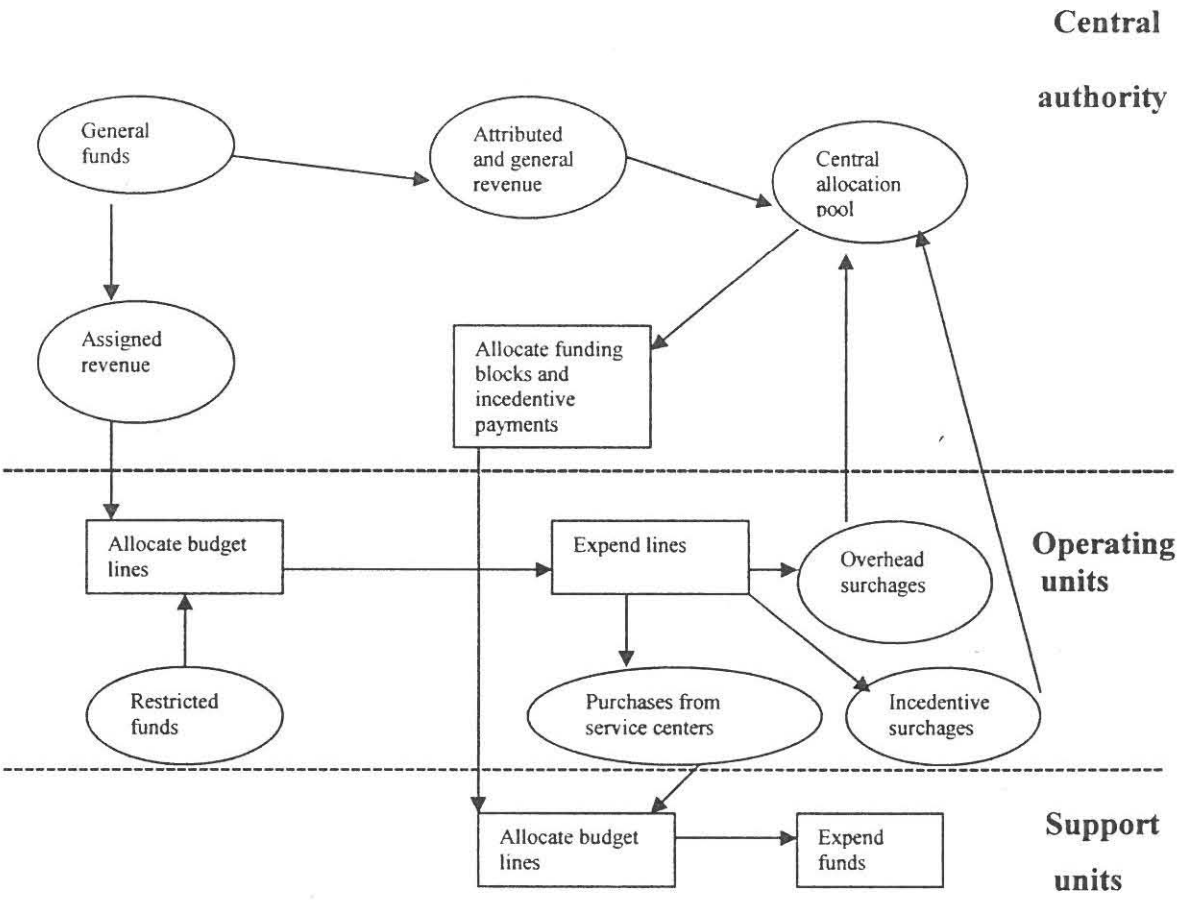
(Source: Massy, 1999:18)

VRB adopts the responsibility center concepts for portions of an institution's revenue base and block allocation concepts for the remainder. The operating units own assigned revenues, whereas attributed and general reserves are allocated in blocks. VRB divides an institution's revenue streams into three categories instead of the two used in RRB.

Figure 4.8 shows the value responsibility budgeting process flow diagram.

Figure 4.8

VALUE RESPONSIBILITY BUDGETING PROCESS FLOW DIAGRAM



(Source: Massy, 1999:19)

4.4.2 Resource allocation methods

The primary approach to resource allocation in the implementation process is through the budgeting system. The resource allocation, as expressed in the budget, needs to be carefully linked to strategy.

Schmidtlein (2001:6) maintains that the principal budget concepts, that have been recommended or utilized in higher education, include the following:

Incremental budgeting

Discussed in 4.4.1 (refer page 72-73).

Formula Budgeting

Thomas (1999:1) claims that the use of formulae in planning and resource allocation has gained popularity within higher education institutions, because of the increasing transparency of formulae, the use of formulae in government funding, the demand for more efficient and effective management of resources, and for greater accountability in the way in which those funds are used.

Schmidtlein (2001:6) explains that formula budgeting involves designing and employing a mathematical model, based on costs and workload or performance factors, to calculate some portion of an institution's budget. According to Lasher and Greene (2001:11) formulae are also based on historical data, projected trends and negotiated parameters to provide desired levels of funding.

Thomas (1999:3) believes that the initial introduction of formula-based models for resource allocation may imply a radical redistribution of resources compared with previous historic patterns of allocation, and that one of the consequences of the formulaic approach of resource allocation is the strengthening of the link between evaluation of

performance and the allocation of resources, because of the assumption that those departments which were successful in generating income would be allowed to keep that income. On the other hand, Lasher and Greene (2001:12) note that at institutions where formula budgeting is used, institutions insist that the use of appropriated funds must not be tied to the unit that generated the funds through the formula. That means that they want the formula to be used as a revenue-generated tool, but not as an internal budgeting technique.

Harold (2000:5) believes behavior patterns might be affected with the adoption of devolved, formula based systems of resource allocation. His argument in favor of a system based on a formulaic model is that it avoids exaggerated annual budgetary submissions and lobbying of decision-makers by powerful budget holders because of a more mechanistic process. Using the formula based system the focus of decision making shifts away from 'who" received allocations towards 'how' those decisions were made. In this regard, a formulaic system of resource allocation, increase the power of departments that brought in valued resources.

Program budgeting

Schmidtlein (2001:8) explains that the focus of program budgeting is on the objectives and the contents of the institution's academic and administrative programs. This budgeting system involves the grouping of institutional activities that have the same goals, into "programs", and by means of systems analysis and cost/benefit studies, estimating the resources required to reach the objectives of each program. Lasher and Greene (2001:12) state that in program budgeting, budgets are created for specific programs or activities and not for departments and that each program's budget is apportioned among the several departments that contribute to the program's activities.

The primary components of the program budgeting system are the program plan, the program budget, and cost-benefit analysis (Lasher and Greene, 2001:12).

The process of the program budgeting system includes:

- Developing program goals and objectives.
- Developing alternative activities to meet the objectives.
- Costing each alternative.
- Identifying benefits to each alternative.
- Selecting the best alternative.

Zero-based budgeting

It involves the division of all operations into "decision units" and each decision unit into "decision packages". A priority rank is established for each decision package at each hierarchical level. The zero-based budgeting system is designed to force annual review of all programs, activities and expenditure, weeding low priorities from the "budget base" (Schmidtlein 2001:6). According to Lasher and Greene (2001:13) this budgeting system has not been used widely in higher education institutions up until now.

Performance budgeting

Involves the developing of indicators for institutional performance before estimating the resources needed to maintain the performance levels (Schmidtlein, 2001:7). It also addresses activities rather than objectives, and relies on activity classifications, performance measures, and performance evaluations (Lasher and Greene, 2001:14).

4.4.3 Linking planning and resource allocation (budgeting)

Chaffee (2001:2) asked the question: Why is it so difficult for higher education institutions to link planning and budgeting? It is however not enough to blame inflation, demographics and federal policies. Schmidtlein (2001:8) feels that the relationship between planning and budgeting is very complex and often indirect, because planning takes many forms, which vary in different institutional settings and budgeting takes many different forms and reflect different timetables. Brinkman and Morgan (2001:1), on the

other hand, maintain that [illegible]f planning and budgeting assume a comprehensive, sequential and rational linking between these managerial activities. Plans are developed and budgets become the mechanisms for the implementation of the plans. Shulock and Harrison (2001:1) believe that planning is always in a state of development, and that there is no one best planning process.

According to Chaffee (2001:1) there is however pressure on the managers of higher education institutions to link planning and budgeting as their resources becomes scarcer and their environment more uncertain. She also believes that if the decision-making process for linking plans with budgets is to be successfully implemented it must have the following three elements, namely:

- Frequent communication between planners and decision-makers.
- Related decisions are made simultaneously rather than sequentially.
- Monitor important changes that relate to income, cost and preference.

Chaffee (2001:4) proposes the optimal characteristics of a system that links planning and budgeting as:

- The system should estimate changes in income and prices, reducing uncertainties in these areas as much as possible.
- The system should allow for disproportionate budget shifts, instead of requiring budget drift.
- The system should monitor and reflect changes in preferences. This implies a need to determine whose preferences are to be accommodated and the relative weight that will be assigned to each set of preference.
- The system should manage conflicting political pressures. Conflict is normally generated by or the need to attend to more than one person when identifying the shape of the indifference curve or the scarcity of resources.

4.5 SUMMARY

Resource analysis and resource allocation are considered as a phase in the strategic management process and were discussed extensively in chapter 3. In this chapter we defined resources as assets under the control of an institution, which will enable it to develop and implement value-creating strategies. The focus then shifted to the allocation of resources, which in essence is about how people and other resources of the institution are organized and is used to provide the necessary funds for proposed strategies.

In the previous chapter the strategies were chosen and in this chapter the resources were allocated. The emphasis of the next chapter will be on the performance measurement as a means of ensuring that institutions attain their goals optimally.

CHAPTER 5

PERFORMANCE MEASUREMENT

This chapter deals with performance measurement as a means of ensuring that organizations and more specifically higher education institutions attain their goals optimally.

5.1 INTRODUCTION

The previous chapters dealt with the formulation and implementation of the strategic management process. In this chapter the emphasis will be on the measurement and evaluation of performance, as part of the strategic control phase.

The first section of the chapter gives an overview of performance measurement, where after the discussion turns to the guidelines that an institution might use to fine-tune its performance measurement selection process. The intent of the second section of the chapter will be to present different performance measurement tools. The last section will concentrate on performance measurement at higher education institutions, with the focus on the two approaches that are currently popular in higher education, namely the balanced scorecard and benchmarking.

5.2 PERFORMANCE MEASUREMENT: AN OVERVIEW

According to Crandall (2002:1) performance management is an integral part of management at all levels of an organization. Digman (1990:341) and Shaw (2003:1) extend on this viewpoint and perceive the measuring of performance as critical to strategic control and as a vital element to ensure that performance is as near as possible to the strategic plan.

Why measure performance?

The answer to this question could be found in the fact that the basic purpose of any performance measuring system is to provide feedback, relative to the goals of the organization, with the chances of achieving these goals efficiently and effectively. If the performance measurements are right, then the data generated will tell where the organization is, how the organization is doing, and where it is going (Bourne and Bourne, 2000:1). Wongrassamee, Gardiner and Simmons (2003:1) explain that in order for

organizations to maintain a[illegible] competitive advantages, performance measures are widely used to evaluate, control and improve business processes. Behn (2003:1), on the other hand, explains that performance measurement is not an end in itself, but can be used to evaluate, control, budget, motivate and improve performances. Leandri (2001:1) adds that one of the main advantages of using performance measures is that they enable the organization to express the results of a business process in quantitative, not qualitative, terms.

What are performance measures/ performance indicators?

The terms performance measures and performance indicators are sometimes used interchangeable (Armstrong, 1994:62). Leandri (2001:1) explains that performance measures are the vital signs the organization use to monitor the health of the business. Armstrong (1994:62) maintains that it is important to agree on performance measures at the same time as objectives are defined, because this is the only way in which a fair assessment of progress and achievements can be made and that the successful definition of performance measures will provide the best basis for feedback.

Leandri (2001:1) believes that when it comes to measuring the performance of the organization, organizations often fall into the same traps over and over again. The most common problem is attempting to measure everything, big and small, meaningful and mundane. Consequently too many measures compete for an organization's attention, which ultimately decreases the effectiveness of the measures and results in the fact that they simply being ignored. Performance measures are sometimes selected in isolation implying that certain measures do not correlate to overarching goals.

What are the characteristics of an effective performance measure/indicator?

Leandri (2001:1) states that effective performance measures are focused on the most important aspects of an organization and its processes, and is well balanced between cause- and effect measures, reflecting cost, quality, and time concerns. Armstrong

(1994:61) believes that perfo will only work if they are derived from clear statements of accountability or main task definitions, which focus on end results. Sim and Koh (2001:1) maintain that the best performance measures are those linked to a business strategy, it should be focused, and should reward behavior that contributes to the success of the organization.

Crandall (2002:4) suggests the following as the characteristics of an effective performance indicator:

- Provide physical, as well as financial measures.
- Can be used as both planning and performance measures.
- Can be used at all levels of the organization.
- Can be adapted for use across the organization.
- Are easy to understand and to report.
- Are easy to change, as measurement needs change.
- Can focus on improvement, not just control.
- Can be assigned different priorities.
- Can be selected by the persons being measured to gain acceptance and use.
- Can be used as common measures for different functions to stimulate cross-functional relationships.

Leandri (2001:1) suggests the following guidelines that may help an organization to fine-tune its performance measures selection process, so that they can measure what really matters:

The first guideline is to streamline measures. A good framework for thinking about and creating performance measures is to divide them into three categories, namely:

- Key objectives. Those goals that articulate what an organization expects from a business process.
- Outcome measures. Reflect the organization's key objectives and are used to determine whether the organization has reached them.

- Activity measures. Monitor the performance of the activity that is instrumental in reaching the key objective.

The second guideline is to link outcomes and activities to overarching goals. An organization should now select the right performance measures as their key objectives and the right outcome and activity measures to accurately monitor progress toward the key objectives.

The following example illustrates how performance measures should work in unity.

Key objective	**Outcome measure**	**Activity measure**
Stable, high-quality workforce.	Employee turnover.	Percentage of jobs analyzed.
	Retention rate of new hires.	Percentage of job offers accepted.

The next guideline is to use a mix of measures that reflect cost, quality and time. Cost-based measures cover the financial side of performance; quality-based measures assess how well an organization's produces or services meet customers' needs and time-based measures focuses on the efficiency of a business process.

5.3 PERFORMANCE MEASUREMENT TOOLS

Marr and Schluma (2003:1) claim that rapid developments in performance measurement approaches, as in many other emerging research areas, exist. Some of the most popular performance measurement tools include the following:

5.3.1 Financial ratio analysis

One method of evaluating an organization's performance is the financial ratio analysis method, which identifies how an organization is performing according to its balance sheet and income statement. Ratio analysis involves selecting two significant figures, expressing their relationship as a proportion, and comparing its value for two periods of time or with the same ratio of similar organizations (Slocum, 1996:599). When performing a financial ratio analysis, the following should be taken into account:

- The performance from a historical perspective (previous years);
- The industry, or organizations in the same industry;
- Key competitors.

(Dempsey and Pieters, 1999:558).

Dempsey and Pieters (1999:557) explain the meaning of a ratio as the relation between two different amounts which is expressed in a simple manner. It therefore implies the arithmetical relationship between two quantities. To be of value the ratio must express a meaningful relationship and should be used as a comparison to standards or comparable figures.

The information available in financial statements has many limitations. Most pertinent is the use of the historic cost model of accounting in times of inflation, and the fact that only quantitative, and no qualitative matters, such as management, products and competition, are included in the financial records (Flynn and Koornhof, 2000:894).

Katsioloudes (2002:135) explains that of the many kinds of ratios, the types most commonly used by organizations are:

- Profitability ratios. Profitability ratios indicate the effectiveness of the organization's management in a number of possible areas. Two common measurements are the profit margin and return on investment (ROI).

- Liquidity ratios. Liqui[illegible] indication of the organization's ability to cover its current debts. There are two fairly standard liquidity ratios, namely the current ratio and the quick ratio.
- Leverage ratios/ financial structure ratios. The leverage ratios measure the extent to which the organization utilizes debt financing in its operations. Two widely used comparisons are the total debt to total asset ratio and times interest earned ratio.
- Activity ratios. Activity ratios give an indication of how effectively the organization is using its resources. The two most common ratios of this type are the inventory turnover and average debtor's collection period.

This study's focus is on resource allocation. The ratios that will be relevant for this study will be discussed by dividing it into the following categories:

Resource allocation: Are the resources allocated effectively?

Ratios:

- Expenditure on each level of services. This shows the allocation of funds to the different levels/departments/units within an organization and indicates the proportion between the different levels.
- Proportions of resources to different inputs. This is the percentage expenditure per line item per level/department/unit. This ratio will show how effective the allocation of funding is between different standard items at individual levels/departments/units.
- Client/customer to employee ratio. This ratio shows the workload of an employee and can indicate whether an employee is used optimally.

Efficiency: Are resources used efficiently?

Ratios:

- The return on investment ratio generally is considered to be the most important profitability ratio because it indicates how efficiently the organization is using its resources. A ratio value greater than 1.0 indicates that the organization is using its resources effectively.
- Expenditure per client/customer.

Sustainability: How reliable is funding?

Ratios:

- Sources of funding. This gives an indication of the major funding source of the organization.
- Percentage of allocated funds spent. This ratio indicates budget performance.
- Revenue generated as a portion of expenditure. This shows cost recovery.

(Health System Trust, 2001:30).

5.3.2 Balanced scorecard

Sim and Koh (2001:2) maintain that according to recent development in the performance measurement literature, more executives begun to question whether their performance measurement systems measure up, and that there is also a growing interest in whether non-financial measures, such as customer satisfaction, employee satisfaction, or innovations, are useful performance indicators. Therefore, managers have begun to look into the implementation of balanced scorecards as a means to overcome the limitations of traditional performance measurement systems. The idea of looking at an organization in terms of a "scorecard" was introduced in 1992 and has been popularized by Robert Kaplan and David Norton. The balanced scorecard is currently a widely recognized and accepted performance measurement tool that is used in thousands of organizations around the world (Lumpkin, 2003:90).

Why a balanced scorecard?

Olve, Roy and Wetter (1999:12) believe that there has been a growing criticism of traditional management control as the focus was mostly on financial measures. Wade and Recardo (2001:5) are of the opinion that most financial measures are trailing or historical. Managers need something more than short-term reports, the balance sheet, the income statement, and other financial ways to measure the performance of the organization.

The critiques against traditional measures are that they:

- Only provide a historic perspective, not a current perspective.
- Focus too much on managerial attention on the return on capital assets.
- Distract management from sustaining and growing the organization, which is often capital-intensive.
- Disregard the drivers of the organization that made financial success or failure possible.
- Only look at the balance sheet which isn't comprehensive enough to manage the organization.
- Do not address the growing abundance of organization data which needs to be focused on a limited set of organization drivers to be understandable.
  (Wade and Recardo, 2001:95).

What is a balanced scorecard?

Olve et al. (1999:16) explain the word "scorecard" as follows: The word "score" refers to a record of points made, and as a verb the word refers to the assignment of a grade. The words "balanced scorecard" then means that the grading should reflect a balance among several important elements of performance. It is however, important that the scorecard not only been seen as a record of results achieved, but it should also be used to indicate expected results. The purpose of a balanced scorecard is ultimately the measurement of business performance and to link the measures used to the organization's overall strategy.

Lumpkin (2003:93) describes the balanced scorecard as a set of measures that provide top managers with a fast but comprehensive view of the organization. It includes financial measures that reflect the results of actions already taken, as well as the operational measures that drive future financial performance.

Wade and Recardo (2001:5) believe that the purpose of a scorecard is to communicate strategic direction; establish performance categories, baselines and targets; identify the organization's processes that directly impact the cash flow; and provide the links between strategy, the business plan, and employees' activities. Corporate scorecards are often inter-related and must be in harmony with each other.

Warren (2002:276) refers to the balanced scorecard as an integrated and holistic approach to performance measurement and management. The balanced scorecard allows organizations to implement strategy rapidly and effectively by integrating the measurement system with the management system (ASME, 2003:1).

Rigby (2003:2) explains the common uses of a balanced scorecard as follows:

- Clarify or update a business's strategy.
- Link strategic objectives to long-term targets and annual budget.
- Track the key elements of the business strategy.
- Incorporate strategic objectives into resource allocation processes.
- Facilitate organizational change.
- Compare performance of geographically diverse business units.
- Increase company-wide understanding of the corporate vision and strategy.

According to Malmi (2003:2) the benefits of applying the balanced scorecard are the following:

- Balanced scorecard helps align key performance measures with strategy at all levels of an organization.

- Balanced scorecard p... ...nent with a comprehensive picture of business operations.
- The methodology facilitates communication and understanding of business goals and strategies at all levels of an organization.
- The balanced scorecard concept provides strategic feedback and learning.

The balanced scorecard perspectives

Olve et al. (1999:5) explain that in viewing an organization from four vital perspectives, the balanced scorecard is intended to link short-term operational control to the long-term vision and strategy of the organization. In this way the organization focuses on a few critical key ratios in target areas and therefore forces the organization to control and monitor day-to-day operations as they affect development tomorrow. It is thus clear that the balanced scorecard concept is based on three time dimensions: yesterday, today and tomorrow.

The balanced scorecard enables managers to consider the organization from the following four key perspectives as described by GENROE (2003:6) and Wade and Recardo (2001:6-7):

- *Customer perspective: How do customers see us?*

  Customer satisfaction shows how the organization is performing from the customers' perspective and should be a top priority for management. The acquisition and retention of customers is the key to making money. The balanced scorecard requires that managers should translate their general mission statements on customer service into specific measures that reflect the factors that really matter to customers, namely time, quality, performance and service, and cost.

Common customer satisfac... ...nce measures are:

-Retention.
-Acquisition.
-Customer encounters.

- *Internal business perspective: What must we excel at?*

Excellent customer performances result from processes, decisions, and actions that occur throughout the organization. The performance measures should reflect the processes that have the greatest impact on customer satisfaction and include quality, response times, cost, and new product introductions.

Common operations and organizational perspective key performance measures are:

-Cycle time.
-Process throughputs.
-Transaction costs.
-Process cycle times.
-Customization.
-Leadership quality.
-Use of technology.

- *Innovation and learning perspective: Can we continue to improve and create value?*

The customers and the internal processes of the organization are measures of success. If the organization wants to be profitable, customers need to be loyal and therefore there must be good services. To provide good services, there should be appropriate and well-functioning processes, and for that purpose there must be a development in the capabilities of the employees. Further, to survive and prosper, managers must

make frequent changes to existing products and services and also introduce new products with expanded capabilities. To summarize, it is only by developing new products and services, creating greater value for the customers, and increasing operating efficiencies, that an organization penetrates new markets, increase revenues and enhance shareholders value.

Typical growth and innovation key performance measures are:

-Percentage of total operating expenditures.
-Percentage of gross sales per customer contact.
-Number of new products on market.
-Training investment.
-Number of new products in pipeline.
-Percentage of adopted employee suggestions.

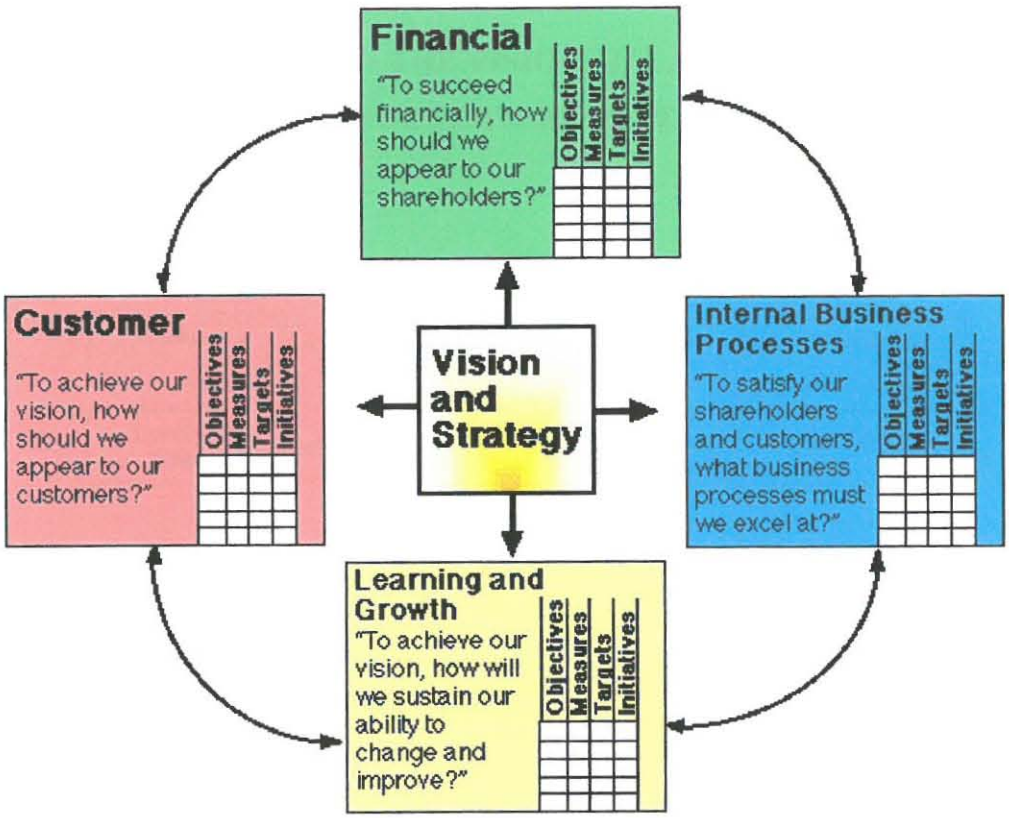
- *Financial perspective: How do we look to shareholders/stakeholders?*

Measurement of financial performance indicates whether the organization's strategy, implementation, and execution are indeed contributing to bottom-line improvement.

Typical financial key performance measures are:

-Cash flows.
-Economic value added.
-Return on equity.
-Return on assets.

Figure 5.1 illustrates the balanced scorecard by Kaplan and Norton.

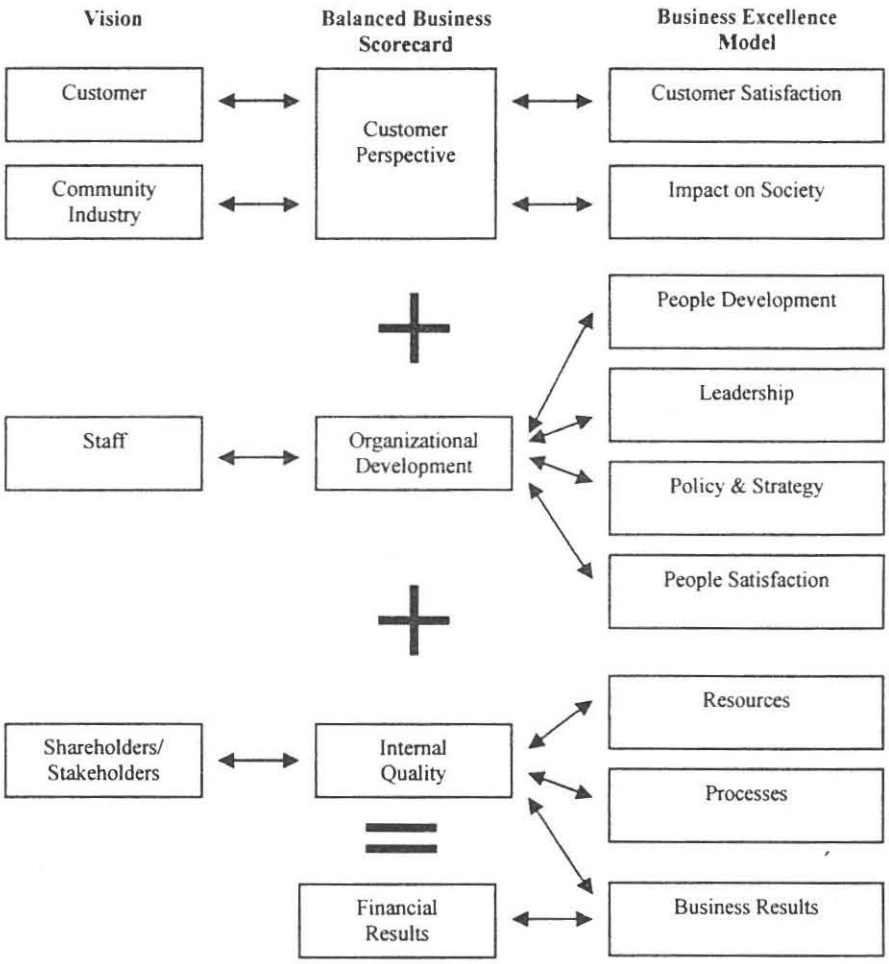


(Source: Balanced Scorecard Institute, 2003:2)

Olve et al. (1999:161) show the linkage between the vision, the balanced scorecard and organization excellence, in figure 5.2.

Figure 5.2

LINKAGE BETWEEN THE VISION, BALANCED SCORECARD AND ORGANIZATION EXCELLENCE



(Source: Olve et al. 1999:161)

Key implications for using the balanced scorecard approach

GENROE (2003:10) explains that using the balanced scorecard approach has the following key implications for the way an organization is run and how it views its strategies:

- The balanced scorecard forces the organization to make explicit assumptions regarding the strategy of the organization and how it will impact overall business. The linked objectives, strategies and actions makes it clear to staff and management why each strategy is being implemented and how it impacts the overall business, and more, it puts measurements of the strategy in place that allow the organization to review its progress.
- The balanced scorecard communicates and aligns the strategy and drivers throughout the organization. By using the balanced scorecard it becomes easy for everyone in the organization to understand their impact on the strategy. The non-financial targets are more concretely justified in terms of their impact on financial performance.
- Feedback is explicit. The concept of tactical and strategic feedback is important to ensure that an organization does not make the same mistakes over and over again. It is true for the balanced scorecard because it tracks what is successful through an explicit feedback loop.
- Mix of lag and lead indicators. Through the balanced scorecard the organization gathers a mix of both lead and lag performance indicators. Financial indicators as well as non-financial indicators are part of the measurement framework of the balanced scorecard. This mix provides a view of the current state of the organization and also provides an indication of the future direction of the organization.

The process of building a balanced scorecard

Olve et al. (1999:38) are of the opinion that the balanced scorecard will supply a valuable tool for enabling employees to understand the organization's situation, which is a must if the organization is to achieve the dynamism it needs to be competitive in the long run. The balanced scorecard also provides useful documentation for continually developing those measures for control that will guide the organization towards its goals and vision. The result will be that daily operations are founded on a shared view of where the

organization should be headed to on the long-term. The course to be taken by organization becomes a tangible and understandable reality for everyone.

The process of formulating and implementing a balanced scorecard touches a number different areas, as explained by Olve et al. (1999:39), and are the following:

- Strategy development

  The first step in the scorecard process is the development of a strate Management control starts with the vision and strategy of the organization and scorecard is a method of controlling the organization.

- Management control systems

  The organization's strategies should be translated into measures and goals various managers, as well as the provision of comprehensive, balanced stateme of the duties of the managers. This means the identification and establishment performance categories, as well as objectives, that best link the organizatio vision and strategy with results. Ensure organization-wide acceptance of measures.

- Systems and IT development

  Data must be recorded, verified, and available. Also, the analysis of performa data and the comparison of actual results with desired results. The procedure handling measurement must not be complicated.

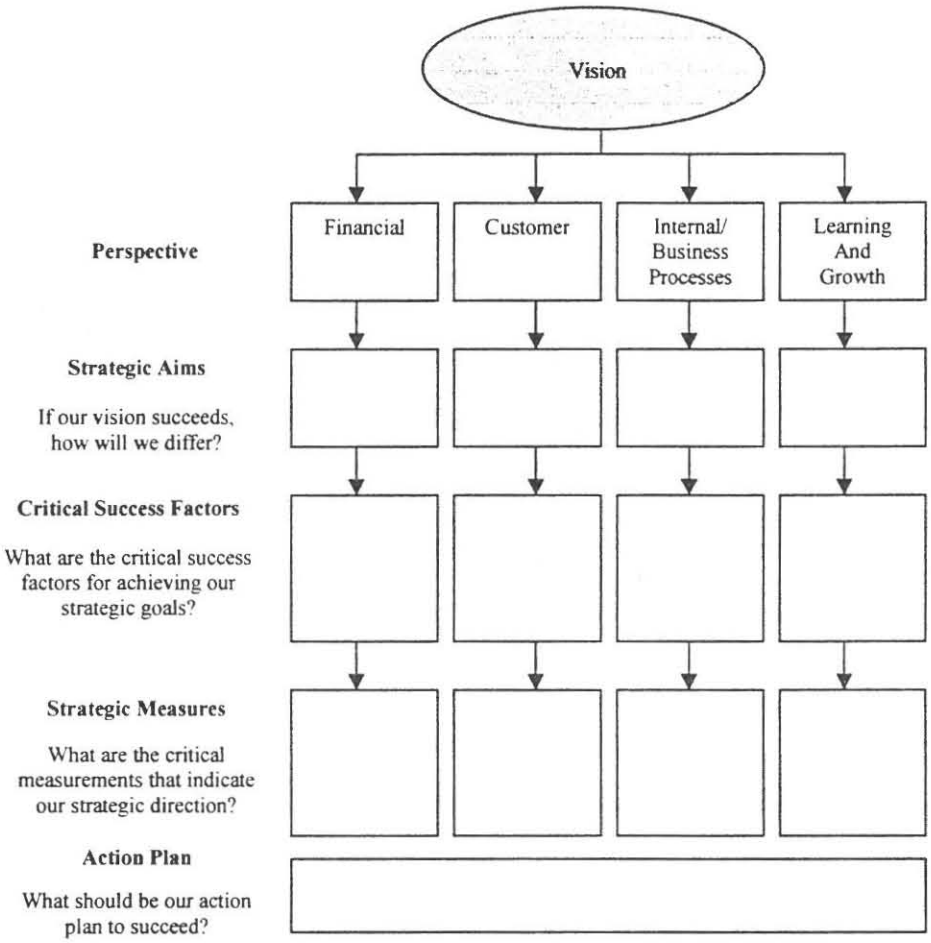
- The learning organization

  The balanced scorecard furnishes a language for describing expectations a performance, and supply thus the foundation for discussions on how e individual can contribute to fulfill the organization's vision.

An overview of how a balanced scorecard is developed is provided in figure 5.3.

Figure 5.3

THE BALANCED SCORECARD PROCESS



(Source: Olve et al. 1999:42)

5.3.3 The EFQM Excellence Model (European Foundation For Quality Management)

In September 1988 fourteen leading West European companies formed the European Foundation For Quality Management (EFQM) (Hiltrop and Despres, 1995:2). The EFQM Model was originally created to provide assistance to managers on how to change their organizations by using total quality concepts, not only to help managers to increase the effectiveness of their decision-making and leadership capabilities but also to help

managers to know where to focus their change initiatives to maximize the impact on stakeholders satisfaction (Wongrassamee et al. 2003:8).

What is the EFQM Excellence Model?

The basis of the Excellence Model is the principle of total quality management. The Model simply provides guidance about what areas will be examined under the European Quality Award scoring system. The model has been based on the concept that customers' satisfaction, people (employee) satisfaction and impact on society are received through leadership which in turn could act as the driving force in reaching excellence in business results by means of policy and strategy, people management, as well as resources and processes (Porter, Oakland and Gadd, 1998:1). The excellence model, however, does not give any suggestions on what strategies or plans should be adopted in order to achieve continuous improvement; does not directly mention target performance, and financial measures are scarce among the EFQM performance criteria (Wongrassamee et al, 2003:8).

Hiltrop and Despres (1995:2) listed the EFQM performance categories and criteria that are critical to excellent organizational performance as the following:

Leadership: how managers take positive steps to:
Communicate with staff.
Give and receive training.
Assess the awareness of Total Quality.
Establish and participate in joint improvement teams with customers and suppliers.

People management: how the organization releases the full potential of its people by:
Integrating corporate and human resource strategy.
Assessing the match between people's skills and organizational needs.
Establishing and implementing training programs.
Achieving effective top-down and bottom-up communications.

Policy and strategy: how the organisation's policies:

Reflect the fundamentals of Total Quality.

Test, improve, and align business plans with the desired direction.

Account for internal and external feedback.

Resources: how resources are deployed in support of strategy, including:

Financial.

Informational.

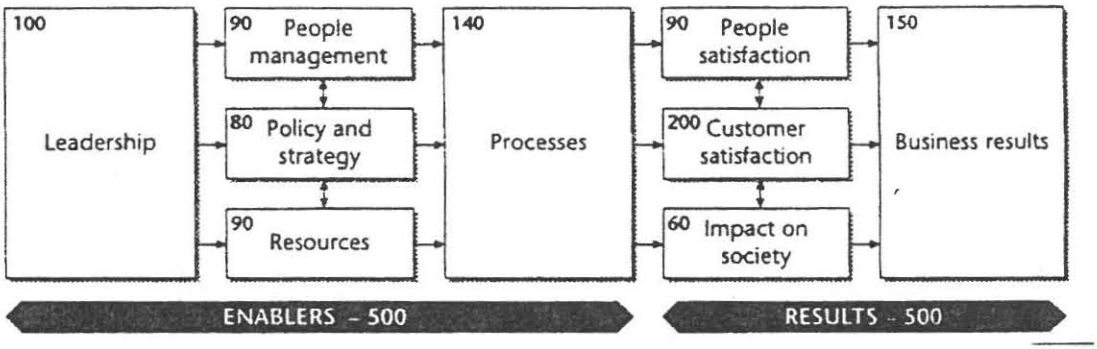
Technological.

Material.

EFQM developed a model, illustrated in figure 5.4, to depict the above performance categories.

Figure 5.4

THE EFQM MODEL



(Source: Porter et al. 1998:1)

5.3.4 Comparative analysis: Benchmarking

Swift (1995:279) claims that benchmarking has become one of the most popular tools in today's modern business, because of the fact that it's a simple and inexpensive process.

Pitts and Lei (2003:500) describe benchmarking as the systematic identification, examination, and implementation of alternative practices and techniques that other organizations use to achieve excellent performance. Katsioloudes (2002:50) explains that in benchmarking, an organization attempts to measure its own performance against that of the most successful competitors in the industry. Managers might then set goals related to either meeting or exceeding their most successful competitor. Such goals can be related to profit margin, cost, market share or any other appropriate measure.

Who should be benchmarked? Swift (1995:283) suggests that there are basically two types of organizations to consider, namely the direct competitors and other organizations that only share functions, but is not in competition with a product or service.

Ambrosini (1998:66) outline the four phases of the benchmarking process as:

- The planning phase. During this phase the function, as well as the best-in-class organization in that function, should be identified. The key performance criteria are identified and the data collected.
- The analysis phase. The data collected should be measured, analysed and compared.
- The integration phase. The functional goals should be established and the benchmark findings communicated.
- The action phase. Action plans should been developed, implemented and monitored where after the recalibration of the benchmarks would take place.

Ambrosini (1998:77) concludes that benchmarking is a valuable tool for comparisons, and is also a very logical step for setting objective targets and enhancing performance measurement.

5.3.5 Other performance measurement models

Alternative balanced scorecard models

Olve et al. (1999:20) explains the following alternative models that are similar to that of the balanced scorecard of Kaplan and Norton. All of these models are designed to measure the performance of the organization and to link the measures used to the overall strategy of the organization.

Maisel's balanced scorecard model

Maisel defines the same four perspectives as discussed in 5.3.2, the balanced scorecard, from which an organization should be measured. Instead of a learning and growth perspective, Maisel uses a human-resource perspective, because he believes that performance measurement should be on the effectiveness of an organization and its people.

The performance pyramid

The performance pyramid shows an organization at four different levels and provides a structure for a two-way communication system which is needed to institute the organization's comprehensive vision at the various levels of the organization. Objectives and measures become links between the organization's strategy and activities. Objectives are translated downward through the organization, while measures are translated upward. In the lower section of the pyramid, the operations level, performance is measured on a daily, weekly, or monthly basis, while higher up in the pyramid measurements are less frequent.

EP ^{2}M (Effective progress and performance measurement)

The purpose of this measurement system is not only to implement the strategy of the organization, but also to foster a culture in which constant change is normal.

According to this model it is important to measure what an organization does in four areas:

- External measures – serving customers and markets.
- Internal measures – improving effectiveness and efficiency.
- Top-down measures – breaking the overall strategy down and speeding the process of change.
- Bottom-up measures – empowering ownership and enhancing freedom of action.

Activity-based costing

Activity-based costing identifies the cost of what is done and the "cost drivers" or underlying cause-and-effect relationship. In other words, activity-based costing links real activities with the drivers of cost (Olve et al, 1999:182). The activities are thus the fundamental cost objectives. Activity-based costing uses the cost of these activities as the basis for assigning costs to other cost objects such as products, services, or customers (Horngren, Foster, Datar and Uliana, 1999:1032). Although activity-based costing is a new approach in management accounting, it provides a fair allocating basis and is increasingly used in practice (Faul, Du Plessis, Niemand and Koch, 2001:79).

Impact assessment

An impact assessment is a research study that measures the impact of current or intended policies, programmes and service delivery. Impact assessment can also be used as a management tool to improve operational efficiency, product design and social efficiency (Simanowitz, 2003:1).

Simanowitz (2003:2) also believes that an impact assessment is hard to do well and that the key to an impact assessment is to provide information that is sufficiently credible for the specific purpose of the assessment.

5.4 PERFORMANCE MEASUREMENT IN HIGHER EDUCATION

Sullivan and Wilds (2001:1) maintains that over the past thirty years pressures have increased for higher education institutions to show that they are accountable for their actions. Higher education institutions have felt a growing need to describe to their constituents how they fulfill their purpose. Therefore, pressures for institutions to document their performance, measure their performance and provide evidence on how effectively they have accomplished their mission have come from within the academy, as well as from government and political entities.

Cave, Hanney and Henkel (1995:17) believe that performance measurement in higher education has seen major developments since 1990. Doerfel and Ruben (2002:19) conclude that in higher education, as in business, there are traditions in the measurement of excellence. Higher education institutions have measured organizational performance using a financial accounting model that emphasizes profit, return on investment, sales (services) growth, cash flow, or economic value added. But, higher education institutions have also asked questions regarding the preoccupation with this restricted way of performance measurement. These accounting-based measures may not capture key elements of an organization's mission, customer satisfaction, employee satisfaction, organizational adaptability etc. Therefore there should be a linkage between financial indicators and other measurements that reflect key elements of the institution's mission, vision, and strategic direction.

Doerfel and Ruben (2002:15) suggest two approaches that are very popular in higher education institutions, namely the balanced scorecard and benchmarking methods.

The balanced scorecard metho[illegible]n section 5.3.2 of this chapter and Doerfel and Ruben (2002:20) suggest that the mission, vision and goals of higher education institutions may be translated into indicators with the following five indicator clusters, each composed of a variety of measures:

Teaching and learning

Instruction is composed of quality assessment in two areas, namely programs and student outcomes. Program indicators of excellence might include clarity of mission of programs, need, coherence, rigor, efficiency, and qualification of instructors, adequacy of support services, and the teaching-learning climate.

Student outcome

Student outcome should include measures of program preference, learning outcomes, fulfillment of expectations, satisfaction, retention etc. Scholarship and research involve assessment of quality in the areas of productivity and impact. Performance measures could include frequency of paper and article submissions, publications, and funding proposals.

Public service and outreach

Indicators regarding public service and outreach would be composed of measures of the extent to which a higher education institution addresses the needs and expectations of key external stakeholders.

Workplace satisfaction

Performance measures for workplace satisfaction could include measures of attractiveness of the institution as a workplace for staff, staff turnover, compensation, staff morale and satisfaction.

Performance measures for finance may include revenues by source, and expenditure.

Benchmarking is another performance measurement tool widely used in higher education institutions. Ball and Wilkinson (1994:10) stress the fact that benchmarking in higher education faces the same challenges as in other sectors, especially in selecting appropriate benchmarking partners. The partners should share similar procedures, structures and missions. Barak and Kniker (2002:2) name the twelve most commonly reported benchmarking performance measures as:

- Retention or graduation rates.
- Program delivery, such as improving access, range, efficiency and transferability.
- Assessment processes and results.
- Workforce development.
- Student characteristics and student diversity or faculty and staff diversity.
- Alumni, enrolled students, or employer survey results.
- Mission-specific objectives.
- Administration efficiencies.
- Accreditation.
- Linkages with elementary through high school.
- Affordable tuition and fees.
- Institutional program review and improvement.

5.5 SUMMARY

In this chapter an overview of performance measurement was given to introduce the various performance measurement tools, currently available in the market. It is clear from the literature that performance measurement is an important tool that motivates staff to make the mission of the institution happens. It is however, important to remember that no

single performance measure is [illegible] erformance measurement is not an end in itself.

The following chapter outlines the CUT, as a higher education institution, from a strategic and financial perspective.

CHAPTER 6

THE CENTRAL UNIVERSITY OF TECHNOLOGY, FREE STATE FROM A STRATEGIC AND FINANCIAL PERSPECTIVE

This chapter outlines the CUT, as a higher education institution, from a strategic and financial perspective.

6.1 INTRODUCTION

This chapter outlines the CUT, as a higher education institution, from a strategic and financial perspective. Initially the vision and mission, as well as the governance of the institution, will briefly be explained. The focus then turns to the strategic planning process, the strategic goals and the major strategic issues. Finally, financial management at the CUT, in terms of the budget, will be discussed.

6.2 THE PROFILE OF THE CENTRAL UNIVERSITY OF TECHNOLOGY, FREE STATE

6.2.1 Background

The CUT, situated in the Free State Province in South Africa, opened its doors on 1 January 1981 under the leadership of Professor J J van Lill. During January 1981 a total of 285 students enrolled and lectures were offered in mainly the commercial- and art disciplines.

The demand for career-orientated higher education surpassed all expectations and within two years the following academic sections were formed, namely Engineering, Management and Art and Design. Soon the Faculty of Health- and Environmental Sciences was added. Due to the growing number of students it was also decided to open four branches or distance campuses at Qwa Qwa, Kimberley, Kroonstad and Welkom, where part-time contact tuition was offered to students.

Because of the growing number of students (10479 in 2003) and staff members (746 in 2003), as well as the growing number of academic programmes (136 in 2003), effort was put into the provision of proper physical facilities and campus development.

As part of its duties in the field of ...munity services, the CUT, has created a Science Park with the goal of launching the institution to the forefront in terms of international standards (CUT, 2004: History).

6.2.2 Vision and mission

Since the establishment of the CUT in 1981 the vision and mission have changed numerous times and it seemed logical to present the most recent vision and mission as a result of the fact that the institution's fundamental focus areas have not changed.

Vision

Progress through Science, Engineering and Technology.

Mission

As a responsive, learner-centered and quality-driven institution, the CUT will:

- Contribute to the quality of life of all its people.
- Facilitate and enhance access for all learners from various backgrounds.
- Develop people for innovation, leadership and employment.
- Teach its students to utilize cutting-edge technology.
- Provide excellent career-focused education.
- Express an entrepreneurial spirit.
- Undertake research that addresses real world issues.
- Use work-integrated learning in promoting optimal employability.

All these aspects will be implemented with integrity within a Southern African context. (CUT, 2004: Vision and mission).

6.2.3 Governance

The CUT adopted a committee system and an executive management model to govern the institution according to the parameters set by statutory bodies. These committees were formed on the basis of representation from the academic- and support staff, as well as from the Student Representative Council. Ensuing from this system is that all decisions are taken on a democratic basis.

The statutory bodies comprises of:

- Council
- Institutional Forum
- Senate
- Student Representative Council
- Student Services Council
- Convocation

Committee system and executive management model:

- Vice-Chancellor
- Deputy Vice-Chancellors
- Senior Vice-Rector: Operations
- Registrar
- Management committees: The Support Service Board
  Vice-Chancellor's Executive Team

(CUT, 2004: Management).

6.3.1 The strategic plan

The purpose of the strategic plan was to create the desired end-state that the CUT wishes to attain by 2006. The strategic plan focused primarily on the academic component of the institution with a strong support from student services, as well as the advancement and marketing section. The main aim of the strategic plan was to satisfy the academic and student needs of the institution. A secondary focus was that the rest of the institution should be aligned to best support the academia in fulfillment of its tripartite role, focusing on teaching and learning, research and community service. The strategic plan of the CUT was an effort to balance the issues relating to the external environment of higher education and the institution with the internal strengths and weaknesses of the CUT as a higher education institution.

The following documents played a key role in the drafting of the strategic plan, namely: The National Plan for Higher Education, Human Resource Development Strategy, and the National Working Group Report "Transformation and restructuring: A new institutional landscape for Higher Education" (CUT, 2003: Strategic plan).

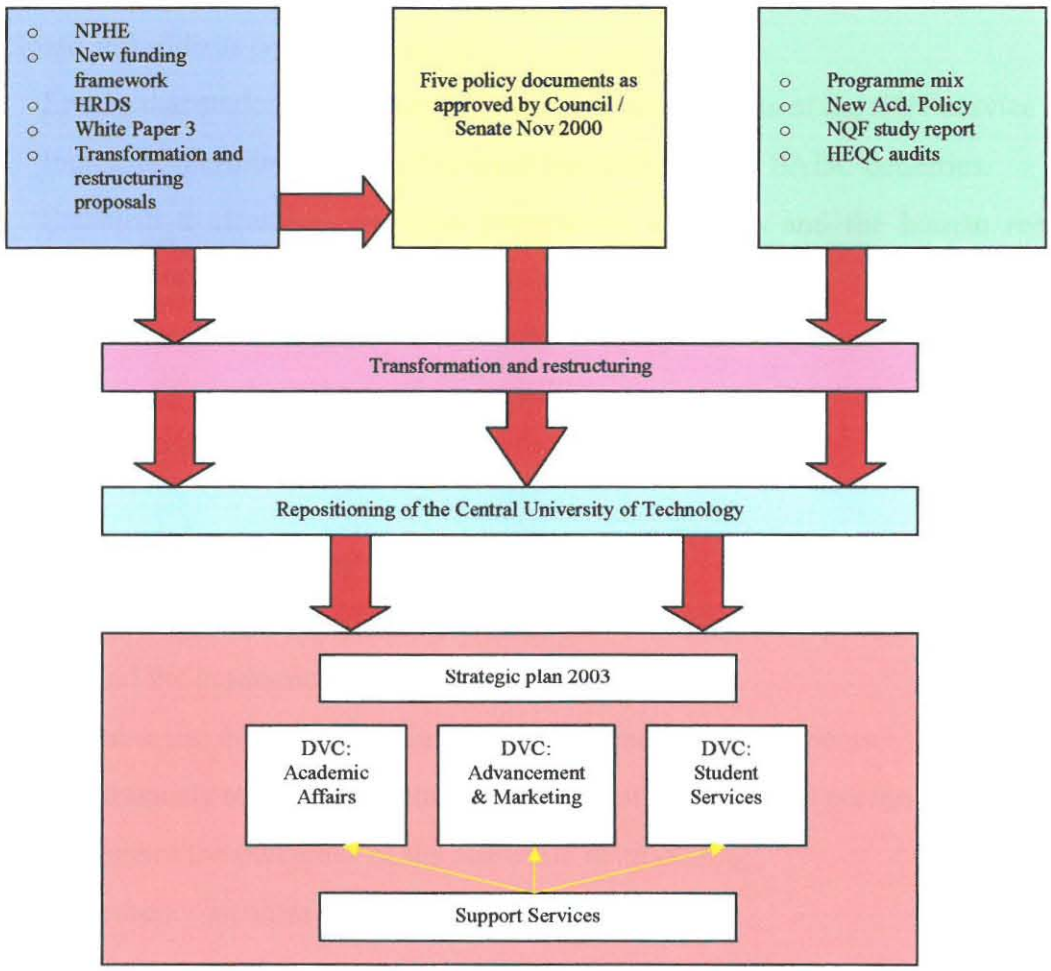
Figure 6.1 provides a schematic diagram of the strategic planning process.

Explanation of abbreviations in figure 6.1.

Deputy Vice-Chancellor (DVC)
Higher Education Quality Committee (HEQC)
National Plan For Higher Education (HPHE)
National Qualification Framework (NQF)

Figure 6.1

STRATEGIC PLANNING PROCESS



(Source: CUT, 2003: Strategic plan)

6.3.2 Strategic goals

The CUT is repositioning itself to become a leader in higher education in South Africa. The goals and strategies to be reached during the period 2003 until 2006, were spelled out in the strategic plan (CUT, 2003: Strategic plan Annexure A).

Anticipate and address community needs.

- Ensure that students' diversity reflects the demographics of the CUT service area.
- Increased recruitment of student from international and SADC countries.
- Establish a clear link between programme offerings and the human resource development strategy (HRDS).
- Increase involvement in community service projects.
- Effectively reaching the rural communities.
- Develop a new institutional culture.

Promote student success through programmes.

- Ensure that the programmes are as relevant and effective as possible.
- Expand the academic development programmes.
- Effective use of technology in the teaching and learning process.
- Continuously review the evaluation of student potential and performance.
- Implement the outcomes of the academic restructuring.
- Implement outcomes based education.
- Sustain and promote research.
- Promote regional cooperation and collaboration.
- Diversity through programme mission and differentiation.
- Enhance the cognitive skills of students.
- Change enrolments by field of study.

Promote student success through enhancing student experience.

- Provide holistic service to learners and customers.

- Provide students with a se nd success.
- Maximize student potential.
- Increase financial support to students.

Create and sustain a sound financial position.

- Increase graduate outputs.
- Continuously evaluate the viability of academic programmes.
- Broader fund raising initiatives.
- Expand student recruitment.
- Sound financial management.
- Successfully implement the new subsidy model.
- Increase student enrolment.

Quality improvement; continuously improve organizational effectiveness.

- Ensure optimal application of information systems and information technology.
- Optimize administrative services.
- Ensure the continuous development of the people of the CUT.
- Align infrastructure developments with an efficient learning and working environment.
- Implement mechanisms to assess and improve performance.
- Step-up the internationalization campaign.

Strengthening of relationships with all stakeholders.

- Increase alumni participation.
- Frequently communicate the success to stakeholders.
- Strengthen relationships with schools.
- Strong acknowledgement of stakeholders' contributions to the CUT.
- Open communication channels with the Department of Education.

6.3.3 Major strategic issues f

The following are the major issues facing the CUT since 2003:

- Restructuring the academia.
- To address only those issues that have the greatest impact on efficiency and effectiveness.
- Ascertainment and application of the new funding model.
- The creation of a situation where closer contact exists between the institution and the alumni.
- Organizational development.
- HIV/AIDS.
- Being technology driven.
- Internationalization.
- New institutional culture.

(CUT, 2003: Strategic plan).

6.3.4 Performance measurement

The strategic plan was implemented to ensure that the goals of the CUT were met and that sustainability be ensured. The measurement instruments that were used by the CUT to measure the strategic progress were the balanced scorecard and the annual work plans that directly linked to the performance management system that tracked individual performance and contributions to the strategic goals.
(CUT, 2003: Strategic plan).

6.4 FINANCIAL MANAGEME...

6.4.1 Financial planning

Financial planning in general gives expression to possible future activities in terms of money. Financial planning at the CUT was based on the planning that took place in all the sections, as well as a thorough financial analysis, and was eventually expressed in a financial plan in which the relation between the financial administrative function and the other functions of the CUT was pointed out. In order to accomplish this, the determination of financial objectives in collaboration with the mission, vision and the financial policy and procedure, was necessary.

A strategic financial plan covering a five year period is in place at the CUT, and is reviewed annually before the budget is compiled for a specific year. The strategic financial plan addresses the sources of income, the expenditure categories and the provident funds (CUT, 2004: Financial policy and procedure).

6.4.2 The budget (resource allocation)

The CUT acknowledges a worldwide perceptible decline in the availability of resources for service delivery. The institution also accepts the challenge to manage all resources in a more scientific and structured manner.

A policy and procedure manual, with regard to the budgeting process, is in place at the CUT. The purpose of this policy and procedure manual is:

- The establishment of standards with regard to the budget process.
- The improvement of transparency and communication amongst interested parties.
- Contributing towards the regulation and promptness of the budgeting activities.
- The demarcation of duties.
- The improvement of the distribution effectiveness of funds at strategic, as well as department level.

- A more scientifically justifiable basis for the utilization of funds is established.
- Serves as a manual for new entrants to the service.

The policy statement, with regards to the budget, maintains that the CUT strives towards a healthy financial position and that the budget procedure should support impeccable financial administration.

The budget should be seen as a unit. The use of funds must consequently be planned, taking into account the strategic, as well as the faculty/departmental objectives. This implies a strategic, as well as a departmental focus during the division of the budget.

Balance between strategic and departmental focus: The functional activities of departments are focused on the key function of the CUT. It is therefore important that the functional focus of various departments be kept in mind. During the apportionment process a balance is maintained between appropriation of funds on a vertical basis (with a focus that varies between departmental level and strategic level), as well as on a horizontal basis (with a focus that ensures that each faculty/department/component in the CUT receives its rightful portion).

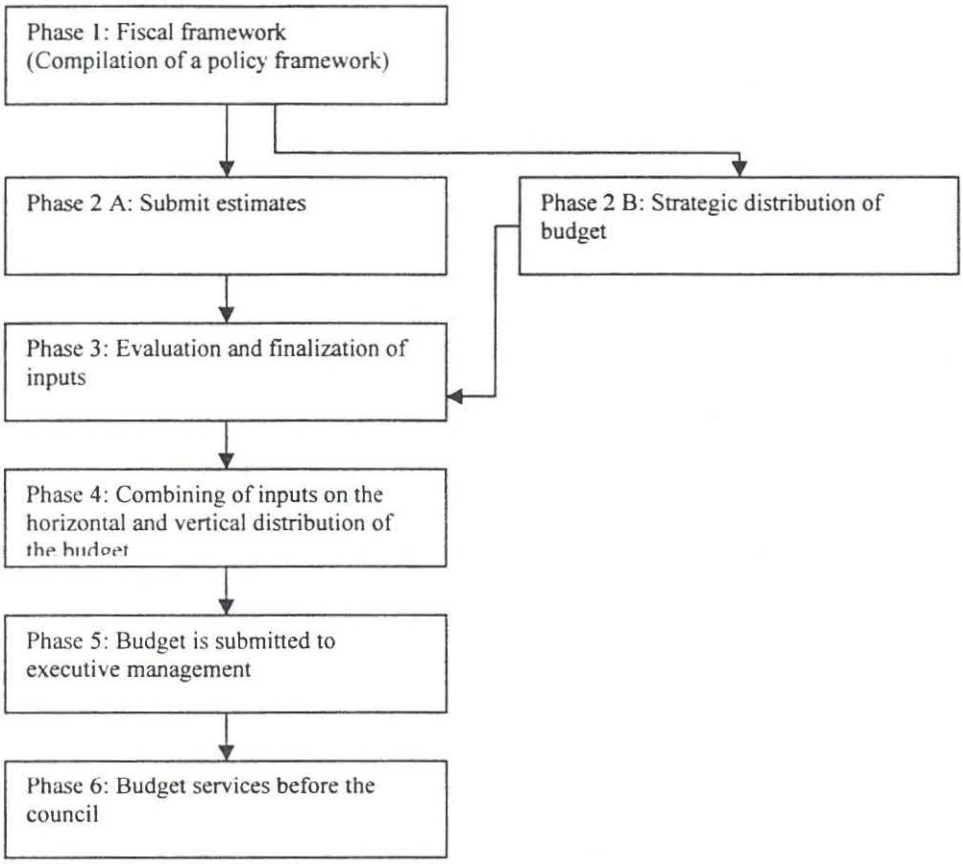
The budgeting process

General

A graphic representation of the budgeting process is illustrated in figure 6.2.

Figure 6.2

THE BUDGETING PROCESS



(Source: CUT, 2004: Policy regarding budgeting process)

Programme budgeting process

The process of deciding how much money should be appropriated for a certain programme or project is not a straight forward one. The annual budget contains various expenditure items which are subject to complicated thought processes. It is therefore necessary to apply the following facilitative thoughts in order to increase the appropriation effectiveness of the budget:

- Budget according to ne ds according to affordability. Focus energy on those few items or programmes that put the biggest strain on available funds.
- Analyse the relationship between the number, unit cost and total cost of items, as well as the total budget for various faculties/departments.
- Subject the few items (air-conditioners, computers, etc.) that have a high purchasing cost to more scientific-oriented resources.
- Identify those items for which accurate record keeping is available and use the information in that regard (internet use, maintenance contracts, expenses associated with ribbons and paper for printers, etc.).
- Consider the estimates with regard to future expenses for which approval has already been granted on the basis of strategic positioning or policy, such as overseas trips, marketing and personnel development.
- Certain expenses must be subjected to the law of "all or nothing". The aim is to maintain a balance between viable projects that may be implemented in phases and those projects that are not viable over the long term. Money is therefore taken away from essential affordable programmes and apportioned to expensive non-affordable programmes.
- Non-quantifiable requisitions must be critically questioned.
- When consideration is given to the apportionment of funds, with regard to the strategic plan, the nature of objectives influences the decision-making process, for instance: Those that are job-creating in nature; those that are non-strategic in nature; marketing; level of accuracy of calculations; objectives that are not clear; extension of activities and programmes; review of programmes; attainability of objectives; and should objectives be divided into phases; maintainability of objectives; and whether the project or programme is capital intensive.

The Joint Planning, Analysis and Budgeting Committee provides the guidelines to ensure that funds are channeled effectively so that the mission of the CUT could be executed successfully. The guidelines take the Macro-institutional model into consideration and comply with the aims and objectives described in the strategic plan.

The budget was discussed by means of the institutional regulatory code with regard to the budgeting process (CUT, 2004: Policy regarding budgeting process).

6.5 SUMMARY

This chapter initially focused on the history, vision and mission, as well as the profile of the CUT. Policies and procedures regarding strategic- and financial management were then outlined.

The literature study is concluded by this chapter and the following chapter will introduce the empirical study, with the CUT as the subject of the research.

In the next chapter the data collected, in respect of the allocation of resources at the CUT, will be analyzed.

CHAPTER 7

ANALYSIS OF DATA

In this chapter the data collected, in respect of the allocation of resources at the CUT, will be analyzed.

7.1 INTRODUCTION

This chapter introduces the empirical part of the study. The empirical research will entail an investigation into resource allocation to academia, with the objective to determine whether the resource allocation justifies the return on investment in the different academic faculties.

Data required, as well as institutional targets, was collected from the administrative-, financial- and human resource departments. The data collected was of such a nature as to justify the problem statement (chapter 1, paragraph 1.2) and in accordance with the objective of the study (chapter 1, paragraph 1.3). The data collected can be divided into two main categories, namely financial data and non-financial data. The financial data entails data on funding and revenue, expenditure and budgets. The non-financial data relates to services rendered by the academic faculties, student enrolments and dissemination, as well as personnel categories, numbers and dissemination.

Data collection was also enriched through informative discussions with various heads of departments/units that were responsible for the provision of the data.

The period under review was the calendar year 2003. Data collection will reflect the distance campuses, but due to the fact that the Qwa Qwa campus closed down during 2003 and that the former Vista University campus at Welkom merged with the CUT during more or less the same time, the distance campuses will not be included in the analyses, interpretations, conclusions and recommendations of this study.

The performance criteria that will be addressed in the analyses are sustainability, resource allocation, efficiency and effectiveness.

7.2 ANALYSIS OF DATA

7.2.1 SUSTAINABILITY

An analysis of the shape and size of the CUT was necessary, because non compliance with the requirements of the Higher Education Act, National Plan and the White Paper

might result into a situation wh thhold payment of any commensurate proportion of any allocation appropriated, with an accompanying impact on resource inputs and therefore sustainability (chapter 2, paragraph 2.5.4).

7.2.1.1 Shape and size of the Central University of Technology, Free State

Data relating to the profile of the CUT in terms of the shape and size of the academic faculties/departments/schools was collected and analyzed.

The data focused on academic services rendered by the academic faculties (the academic sections and programmes), the users of academic services rendered (student enrolments and dissemination), and the personnel (categories, race and gender) of the CUT.

- **Academic sections and programmes**

The academic section at the CUT consisted of four academic faculties, as outlined in table 7.1. Each faculty was divided in economical units that could either be a school or department. These units were not necessarily subunits of each other and could be on the same level.

Table 7.1

ACADEMIC SECTIONS BY FACULTY/DEPARTMENT/SCHOOL

Faculty	**Department/School**
Management	School for Entrepreneurship and Business Development
	Information Technology
	Government Management
	Secretarial Studies
	Tourism, Hospitality and Sport
Engineering	Electrical and Computer Systems
	Mechanical and Applied Mathematics

	Building Environment
Human Sciences	Communication Sciences
	Teacher Education
	Design Technology and Visual Art
Health and Environmental Sciences	Health Technology
	Environmental Development and Agriculture

Programmes were offered on a certificate-, diploma-, degree- as well as post-degree level in the four faculties on the Bloemfontein campus. The Faculty of Management also offered programmes at four distance campuses in Welkom, Kimberley, Kroonstad and Qwa Qwa. Students could enrol for most of the programmes on a part-time, as well as a full-time basis at the main campus and on a part-time basis only at the distance campuses.

- **Number of instructional programmes offered at the CUT**

Programme		**Number**
D Tech	-	19
M Tech	-	25
B Tech	-	37
National Higher Diploma/Post Diploma	-	4
National Diploma	-	45
National Certificate	-	6

Context advancement programmes were also offered in all four faculties, as well as short courses, with total enrolments numbered 759, in the different disciplines.

- **Student enrolments and dissemination**

Students are regarded the clients of academic faculties. In this section analyses relating to student enrolments and dissemination will be addressed. The distribution of students will have an effect on the allocation of resources and are important for this study. There

are also a number of legal re CUT should comply with in respect of student enrolments, as discussed in chapter 2.

The analyses were done in respect of the following:

- *The number of students at the CUT, broken down by faculty/department/school in respect of headcounts and full time equivalents (FTE), are outlined below.*

Table 7.2

STUDENT ENROLMENTS BY

FACULTY/DEPARTMENT/SCHOOL

Faculty/Department/School	FTE	Headcount
Main campus		
Management	**4504**	**5239**
Information Technology	956	850
Government Management	945	596
Secretarial Studies	376	742
Tourism, Hospitality & Sport	297	501
Entrepreneurship and Business Development	1930	2550
Engineering	**1064**	**1946**
Electrical & Computer Systems	520	1163
Mechanical & Applied Mathematics	287	283
Civil & Building Environment	257	500
Human Sciences	**1018**	**938**
Communication Sciences	404	131
Teacher Education	284	402
Design Technology & Visual Art	330	405
Health & Environmental Sciences	**637**	**897**
Health Technology	362	501
Environmental Development & Agriculture	275	396
Total main campus	**7223**	**9020**

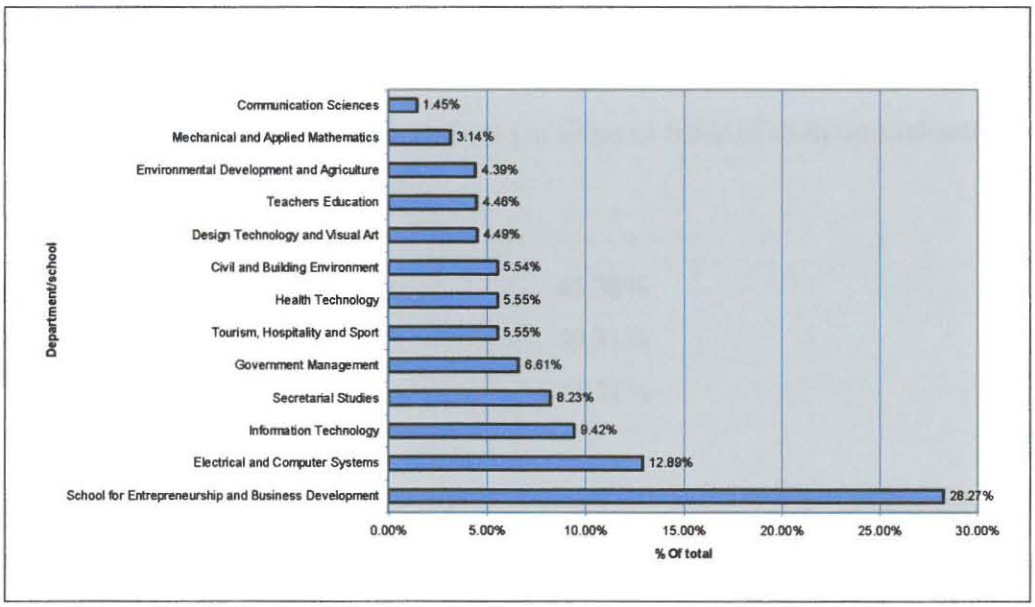
Context Advanced Programme		**185**
Management		148
Engineering		1
Health and Environmental Sciences		36
Distance Learning		**1274**
Total		**10479**

- *Comparison of the number of students per school/department*

Having obtained the number of students within each department/school, it was possible to determine the largest and smallest department/school at the CUT. In order from largest to smallest with regards to student numbers, the following:

Figure 7.1

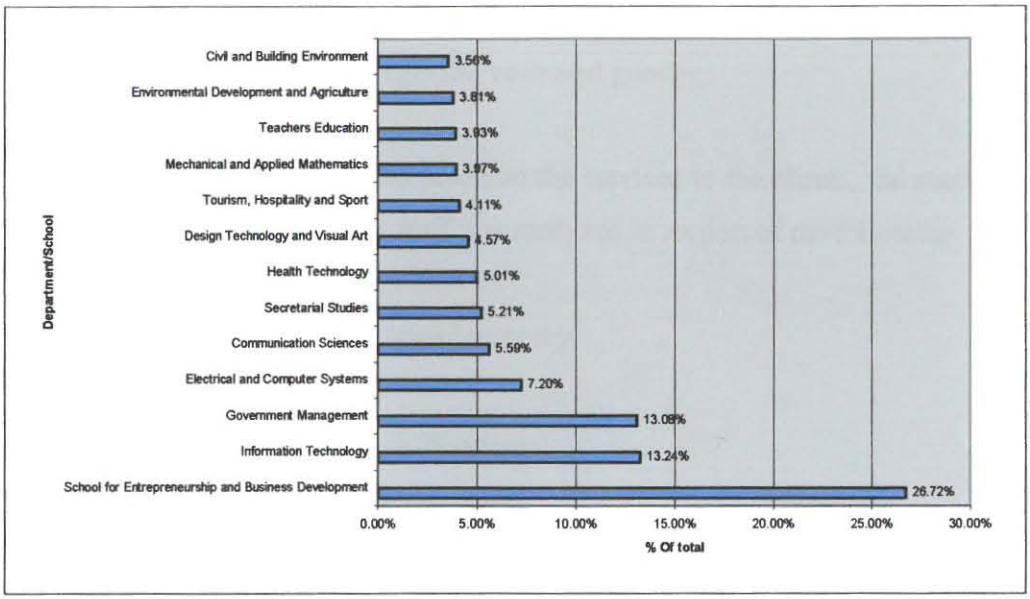
COMPARISON OF NUMBER OF STUDENTS PER DEPARTMENT/SCHOOL



In order from the largest to smallest department/school with regards to FTE, the following:

Figure 7.2

COMPARISON OF FTE STUDENTS PER DEPARTMENT /SCHOOL



- *Analyses of students in respect of the fields of study*

The student enrolments were also analyzed in terms of fields of study/specialization.

Fields of study/specialization

Science, engineering and technology	-	45.38%
Business and commerce	-	40.31%
All other humanities	-	14.31%

- *Analyses of student enrolments from Southern African Development Countries (SADC)*

The enrolment data indicated that a total number of 622 students from the SADC countries were enrolled at the CUT.

- *Analyses of student en ıd gender*

The data obtained showed that 77% of students enrolled at the CUT were black and 23% were white, while 50% were female and 50% male.

➢ **Personnel in terms of categories, race and gender**

The personnel are the people who rendered the services to the clients, the students. To give background information the staff was analyzed in respect of the following:

- *Full-time staff by occupational category*

Category		**Number**
Laborers	-	141
Plant and machine operators	-	7
Craft and trade workers	-	12
Service workers	-	72
Clerks	-	168
Technicians	-	157
Professionals	-	169
Senior managers	-	20
Total	-	**746**

- *Staff at the CUT according to race and gender*

The permanent staff was also analyzed in terms of race and gender, because of the legal requirements to be met as discussed in chapter 2 of this study. 50% of the permanent staff was white and 53% female. In the executive management category 65% was white and 85% was male. In the professional category 12% of the employees were black.

7.2.1.2. Resource inputs

Sustainable services require predictable and affordable resource inputs and acceptance from the community it served. Funding and revenue, as well as budgetary discipline were used as indicators of sustainability. These indicators related to the ability of the CUT to provide services in the future.

- **Funding and revenue**

The analyses on funding and revenue were done in respect of the following:

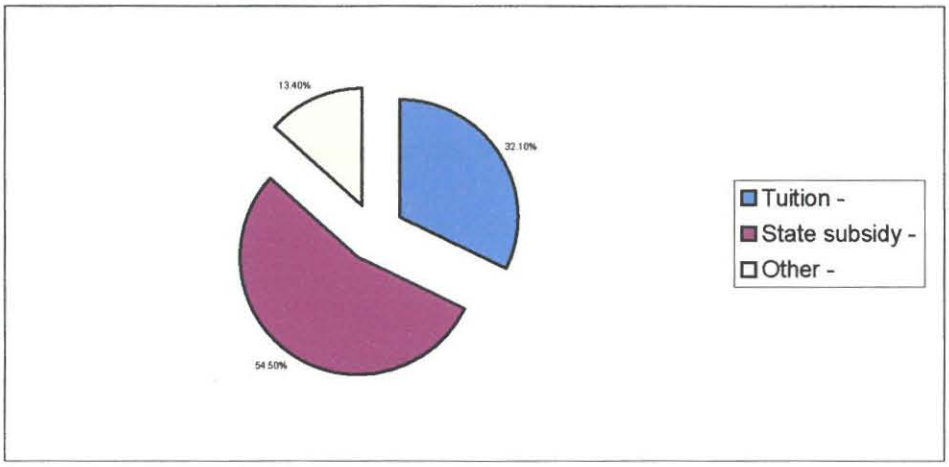
- *The main sources of funding and revenue*

The main sources of funding and revenue of the CUT were analyzed and expressed as a % of total funding and revenue.

Main sources of funding and revenue		**% of total**
Tuition	-	32.1%
State subsidy	-	54.5%
Other	-	13.4%

Figure 7.3

MAIN SOURCES OF FUNDING AND REVENUE



The data on funding and rev ful background information, as well as a clear picture on the level of government- and other funding.

- *% Increase in class fees*

Class fees increased by 9.5%.

- *Expenditure as a portion of revenue generated.*

Expenditure represented 93% of revenue generated.

7.2.1.3 Budgetary discipline

It was necessary for this study to analyze the differences between the budget and expenditure of the CUT in order to indicate budget performance.

The analyses on budgetary discipline were done in respect of the following:

- *Total under/overspending at the CUT*

The CUT under spent its budget allocation (excluding staff compensation and hostels) by 3.2%, while the staff budget for the CUT was under spent by 12%, expressed in the number of staff and not in Rand value.

7.2.1.4 Bad debts

Bad debts as a % of total student debtors were 8.42%.

7.2.1.5 Financial ratios

The following financial ratios were calculated:

- *Debt ratio*

This ratio indicates to which extent the value of the institution's assets exceeds that of liabilities. The ratio was 4.43:1 (assets/assets-equity).

- *Safety margin*

This ratio measures the ability of management to contain the institution's expenditure within the constraints of available funding and other revenue. The ratio was 7.23%.

7.2.2 RESOURCE ALLOCATION

The purpose of this section of the analyses was to consider how the resource inputs were allocated within the CUT. The emphasis will be on the resource allocation to the academic faculties/departments/schools.

The analyses with regard to the resource allocation were done in terms of the following:

7.2.2.1 Allocation of funds

The data on expenditure provided information on the allocation of resources, particularly financial resources at the CUT.

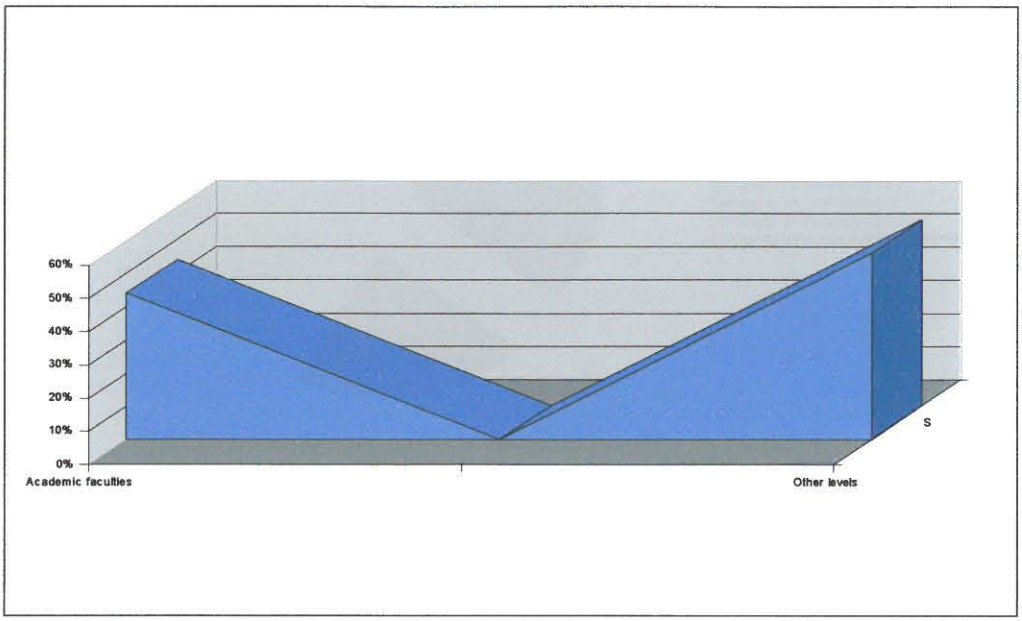
The indicators used were:

- *Expenditure on academic faculties and other levels of services*

This indicator indicated the allocation of funds to the academic faculties and to the rest of the CUT. 44% of the total spending on recurrent expenditure at the CUT (excluding hostels) was at the academic faculties, while 56% was spend on other levels as indicated in figure 7.4.

Figure 7.4

EXPENDITURE ON ACADEMIC FACULTIES AND OTHER LEVELS OF SERVICES



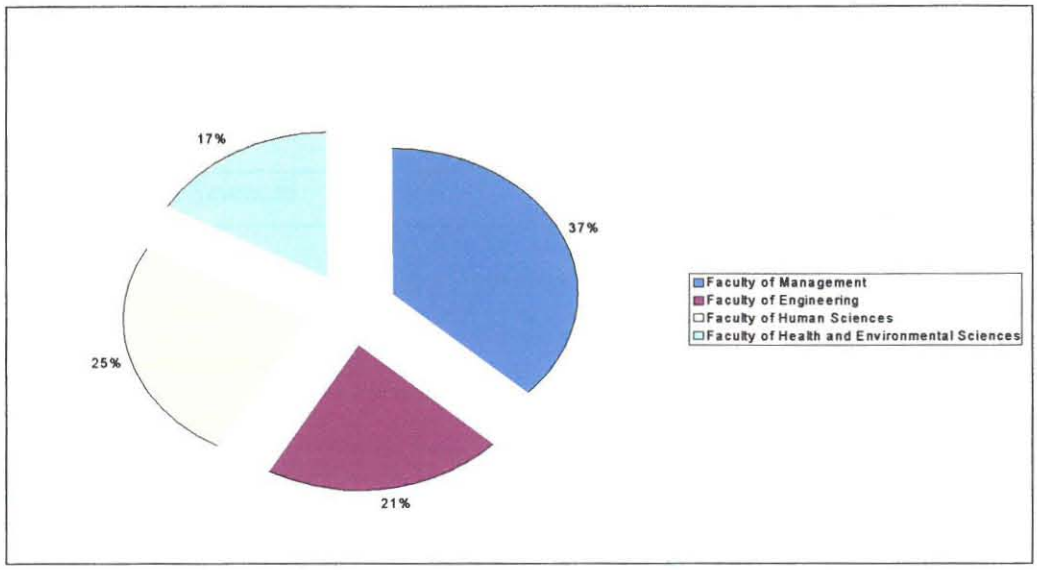
- *Expenditure per faculty*

The spending per faculty as a percentage of the total academic faculties' expenditure was as follows:

Faculty of Management	37%
Faculty of Engineering	21%
Faculty of Human Sciences	25%
Faculty of Health and Environmental Sciences	17%

Figure 7.5

EXPENDITURE PER FACULTY



- *Expenditure per department/school*

This indicator presented the allocation of funds to different departments/schools. The expenditure per department/school will be expressed as a % of the total academic expenditure in the following table.

Table 7.3

EXPENDITURE PER DEPARTMENT/SCHOOL

Department/School	**Department/School expenditure as a % of total academic expenditure**
Management	
Information Technology	5.60%
Government Management	3.83%
Secretarial Studies	2.82%

Tourism, Hospitality & Sport	11.49%
Entrepreneurship and Business Development	10.78%
Engineering	
Electrical & Computer Systems	6.61%
Mechanical & Applied Mathematics	7.10%
Civil & Building Environment	5.02%
Human Sciences	
Communication Sciences	4.71%
Teacher Education	4.02%
Design Technology & Visual Art	8.31%
Health & Environmental Sciences	
Health Technology	9.60%
Environmental Development & Agriculture	5.26%

- *Expenditure within faculties to departments/schools*

This indicator presented the allocation of funds to different departments/schools within a faculty. The expenditure per department/school will be expressed as a % of the total faculty expenditure in the following table.

Table 7.4

EXPENDITURE WITHIN FACULTIES TO DEPARTMENTS/SCHOOLS

Department/School	**Department/School expenditure as a % of total faculty expenditure**
Management	
Information Technology	14.97%
Government Management	10.26%
Secretarial Studies	7.55%
Tourism, Hospitality & Sport	30.72%

Entrepreneurship and Busine	28.83%
Engineering	
Electrical & Computer Systems	31.04%
Mechanical & Applied Mathematics	33.31%
Civil & Building Environment	23.55%
Human Sciences	
Communication Sciences	19.05%
Teacher Education	16.28%
Design Technology & Visual Art	33.64%
Health & Environmental Sciences	
Health Technology	57.93%
Environmental Development & Agriculture	31.71%

- *Expenditure per key line item*

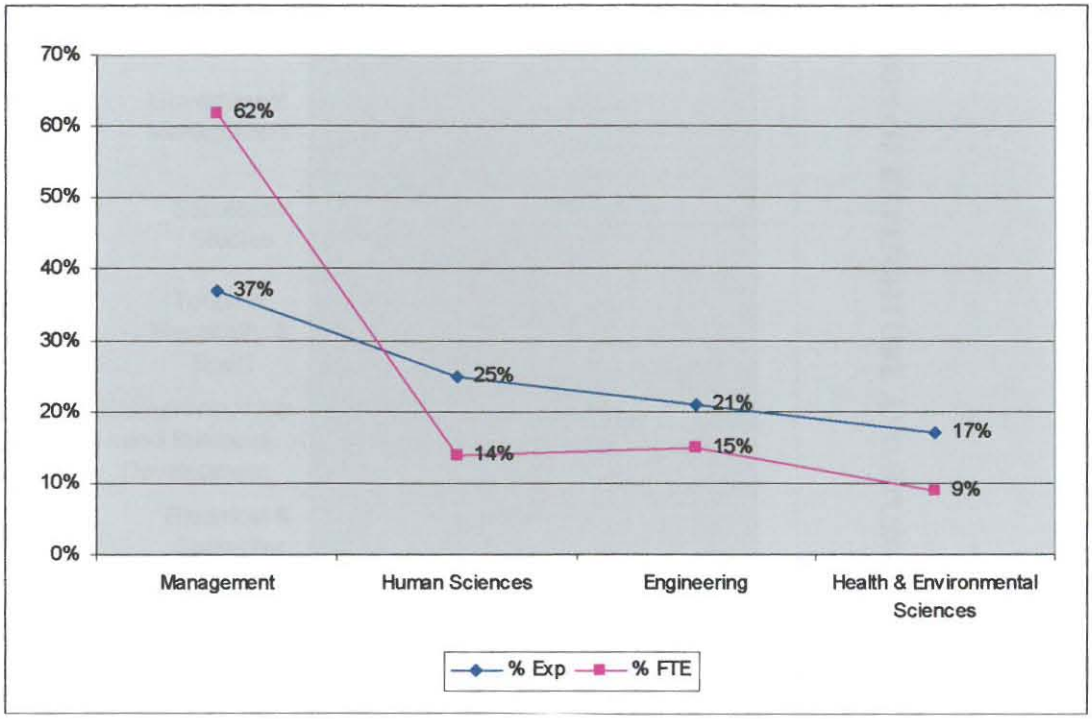
The allocation of funding between key line items indicated that salaries represented 64% of the total recurrent expenditure of the CUT. In the academic faculties salaries represented 89% of the total faculty expenditure.

- *Comparison of expenditure and student enrolments (FTE) per faculty*

A comparison between the % of the total academic expenditure by a faculty and the % of student enrolments (FTE) by the same faculty indicated the following:

Figure 7.6

COMPARISON OF EXPENDITURE AND STUDENT ENROLMENTS (FTE) PER FACULTY

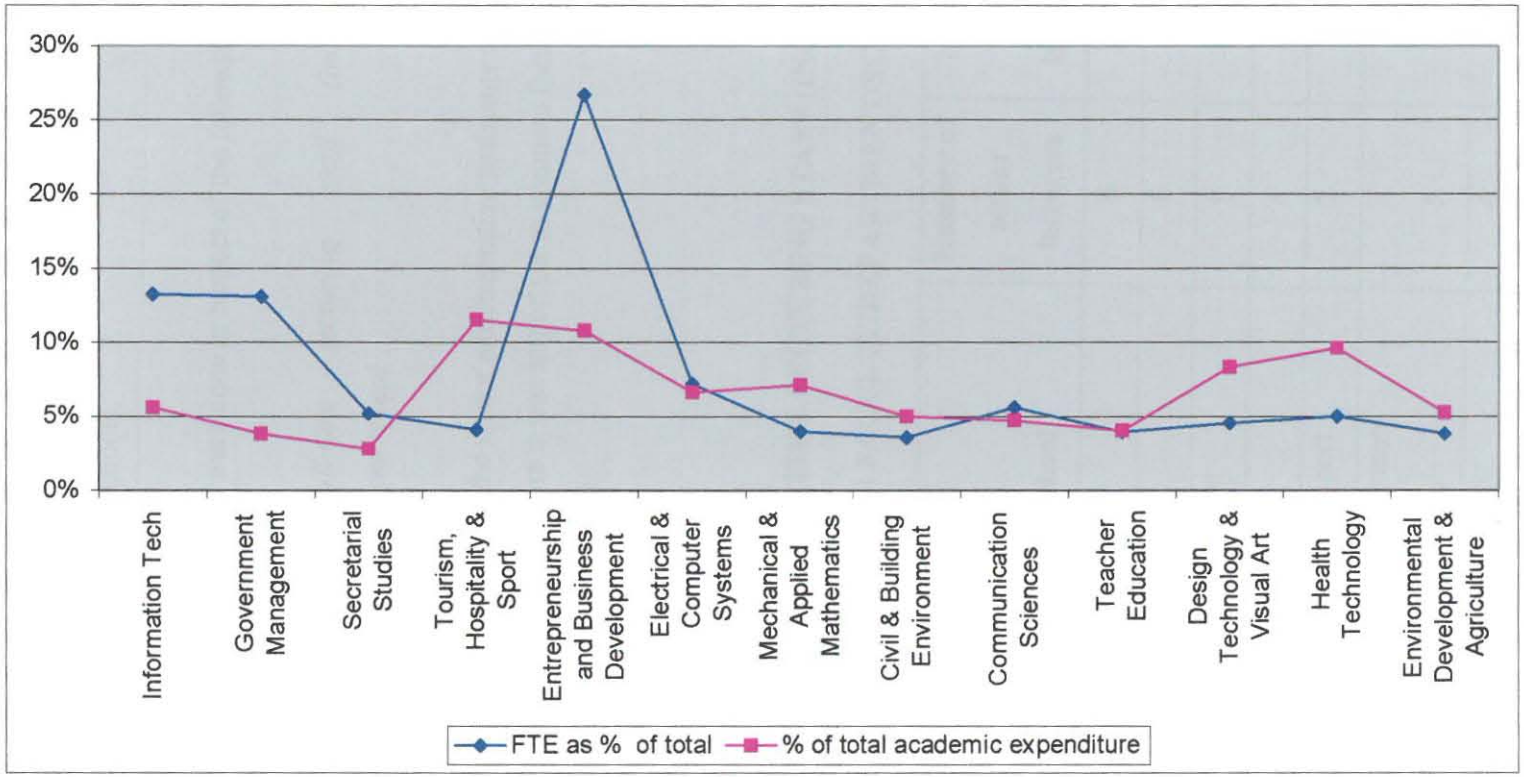


- *Comparison of expenditure and student enrolments (FTE) per department/school*

A comparison between the % of the total academic expenditure by a department/school and the % of student enrolments (FTE) by the same department/school indicated the differences in % of enrolments and % of expenditure as follows:

Figure 7.7

COMPARISON OF EXPENDITURE AND STUDENT ENROLMENTS (FTE) PER DEPARTMENT/SCHOOL



7.2.2.2 Staff allocation

It was required for the study to look at the allocation of personnel, especially to faculties/departments/schools, as staff salaries represented 89% of the spending at the faculties/departments/schools.

The personnel analyses were done in respect of the following:

- *Permanent full-time lecturing staff (including assistants) per faculty/department/school*

The lecturing staff and the senior administrative assistants worked on a daily basis with the students and therefore it was important to compare faculties/departments/schools to each other in this regard.

Table 7.5

PERMANENT FULL-TIME LECTURING STAFF (INCLUDING ASSISTANTS) PER FACULTY/DEPARTMENT/SCHOOL

Faculty/Department/School	Number of senior lecturers	Number of lecturers	Number of junior lecturers and assistants
Management	**8**	**27**	**24**
Information Technology	0	4	7
Government Management	0	5	3
Secretarial Studies	1	1	4
Tourism, Hospitality & Sport	2	7	8
Entrepreneurship and Business Development	5	10	2
Engineering	**6**	**20**	**17**
Electrical & Computer Systems	2	7	7
Mechanical & Applied Mathematics	4	7	3

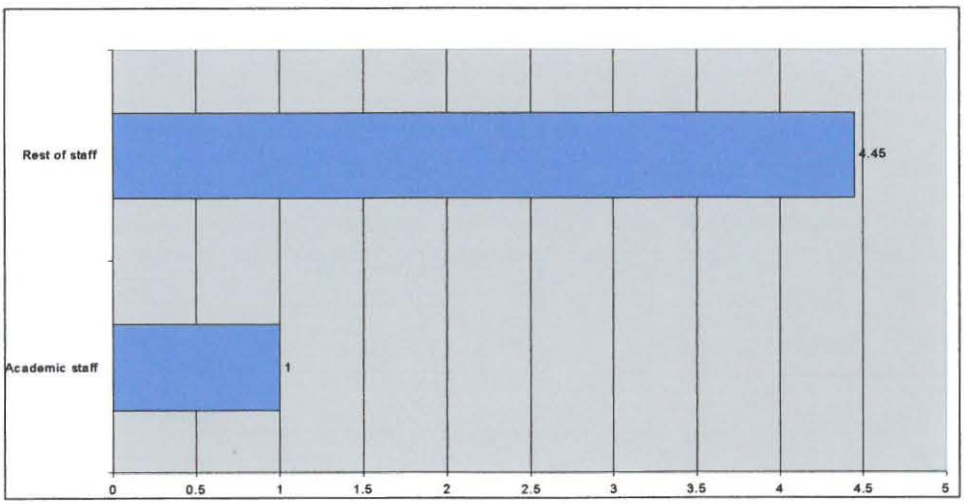
Civil & Building Environment	0	6	7
Human Sciences	**8**	**12**	**8**
Communication Sciences	5	2	1
Teacher Education	1	5	1
Design Technology & Visual Art	2	5	6
Health & Environmental Sciences	**5**	**12**	**15**
Health Technology	4	8	9
Environmental Development & Agriculture	1	4	6
Total per category	**27**	**71**	**64**
Total			**162**

- *Permanent full-time academic staff to rest of permanent full-time staff*

The ratio of permanent full-time academic staff to the rest of permanent full-time staff was 1:4.45.

Figure 7.8

PERMANENT FULL-TIME ACADEMIC STAFF TO REST OF PERMANENT FULL-TIME STAFF



- *Permanent full-time le... (FTE) ratio*

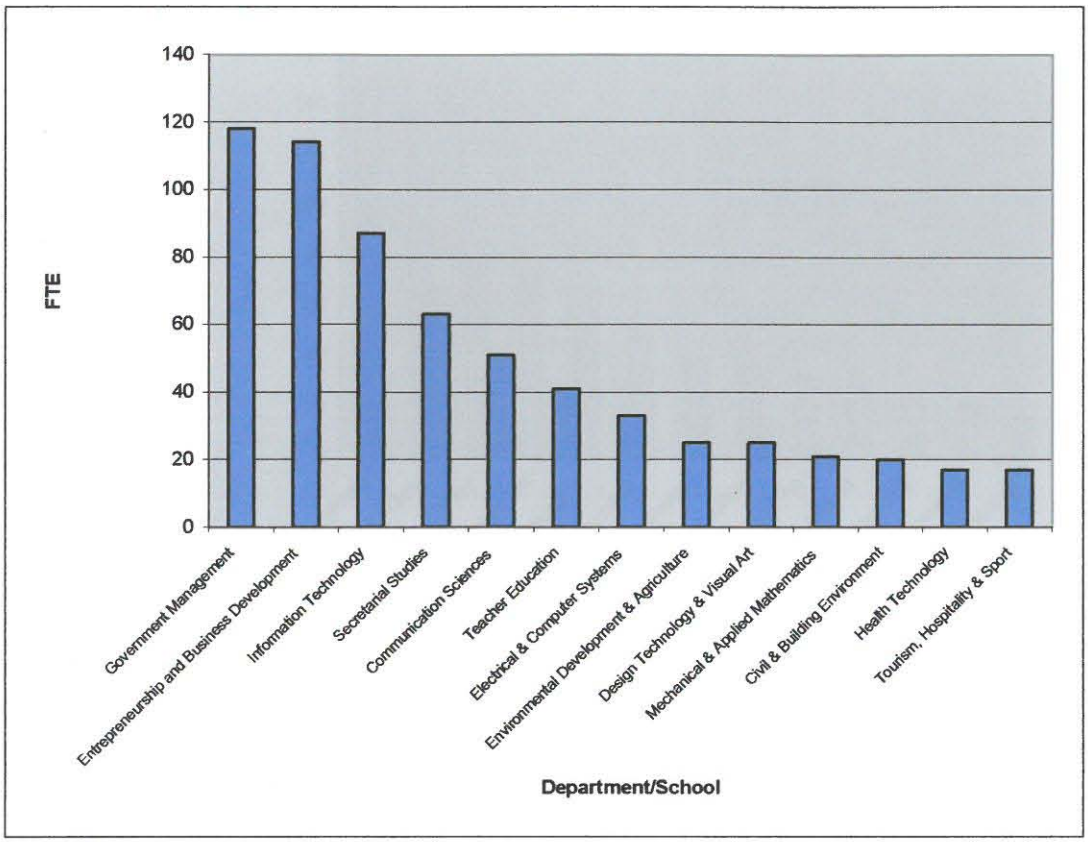
The ratio between staff and students was an important indicator in the calculation of the allocation of staff to the different faculties/departments/schools.

The average number of students (headcounts) per permanent full-time lecturing staff was 56, with the Faculty of Management at and average of 89 and the Faculty of Engineering, Human Sciences and Health and Environmental Sciences at 45, 34 and 28 respectively. With regards to FTE the average for the Faculty of Management was at 76 and the Faculty of Engineering, Human Sciences and Health and Environmental Sciences at 25, 36 and 20 respectively. The average FTE per permanent full-time lecturing staff was 45.

Having obtained the number of students and staff within each faculty/department/school, it was possible to determine the highest and lowest permanent full-time lecturer to student (FTE) ratio. In order from highest to lowest with regards to FTE, the following:

Figure 7.9

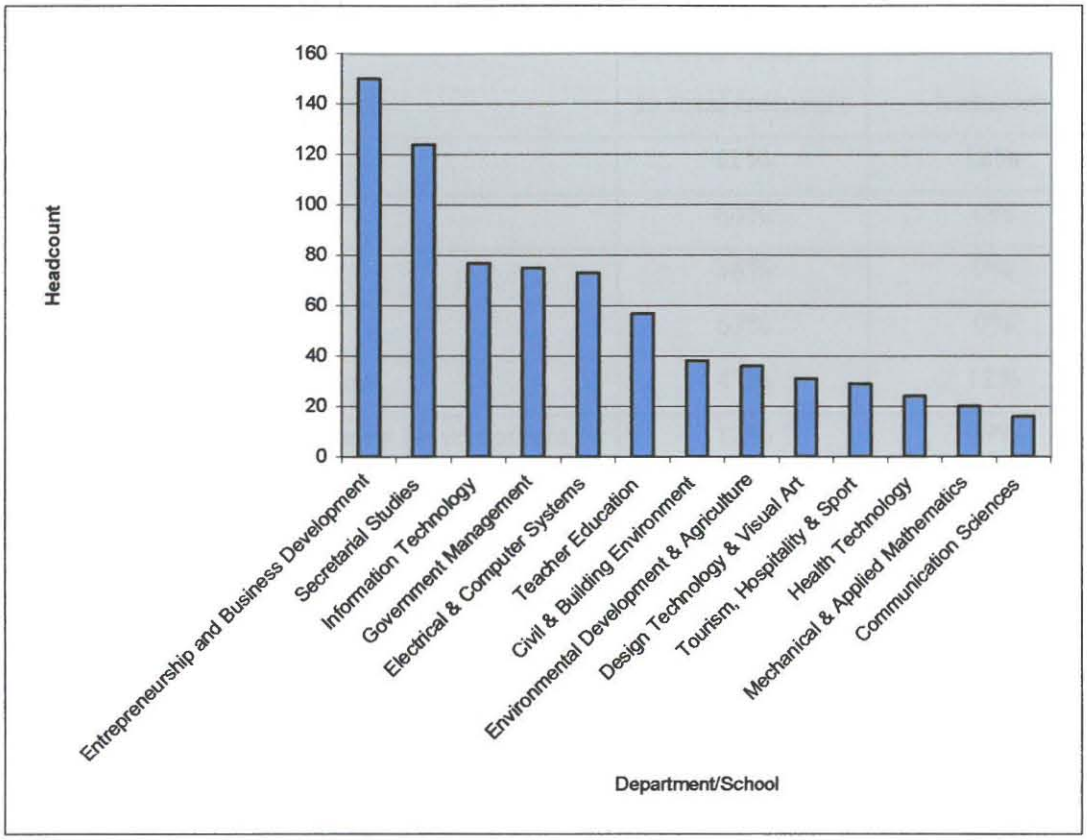
PERMANENT FULL-TIME LECTURER TO STUDENT (FTE) RATIO



In order from highest to lowest in term of headcounts the following:

Figure 7.10

PERMANENT FULL-TIME LECTURER TO STUDENT (HEADCOUNT) RATIO



- *Senior administrative assistant to student ratio*

The average number of students (headcounts) per senior administrative assistant was 601, with the average of the Faculty of Management at 655 and the Faculty of Engineering, Human Sciences and Health and Environmental Sciences at 649, 313 and 897 respectively.

- *Structure: Lecturing staff*

The ratio between senior lecturers and lecturers, as well as junior lecturers, including assistants, and lecturers in the faculties/departments/schools was as follows:

Table 7.6

STRUCTURE: LECTURING STAFF

Faculty/Department/School	% of junior lecturers and ass. to total lecturers	% of senior lecturers to total lecturers
Management	**41%**	**12%**
Information Technology	64%	0%
Government Management	38%	0%
Secretarial Studies	67%	0%
Tourism, Hospitality & Sport	47%	12%
Entrepreneurship and Business Development	12%	29%
Engineering	**40%**	**14%**
Electrical & Computer Systems	44%	13%
Mechanical & Applied Mathematics	21%	29%
Civil & Building Environment	54%	0%
Human Sciences	**29%**	**29%**
Communication Sciences	13%	63%
Teacher Education	14%	14%
Design Technology & Visual Art	46%	15%
Health & Environmental Sciences	**47%**	**16%**
Health Technology	43%	19%
Environmental Development & Agriculture	55%	9%
Total	**40%**	**16%**

7.2.3 EFFICIENCY AND EFFECTIVENESS

It was important to examine the ratio of inputs (resources used) to outputs (results produced) to determine whether the resources were used efficiently. In this section the emphasis will be on financial efficiency and academic effectiveness.

7.2.3.1 Financial efficiency

The purpose with the analyses on financial efficiency was to determine whether the resources were allocated effectively.

The indicators used were:

- ***Average expenditure per student (FTE)***

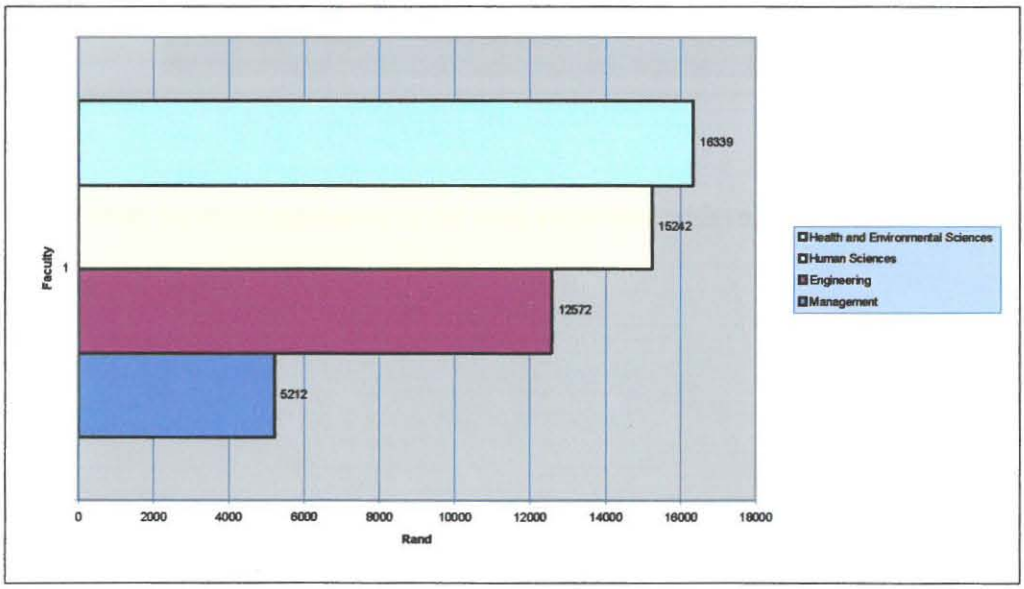
The average expenditure per student was R 8691.

- ***Expenditure per student (FTE) per faculty***

The following represents the expenditure per student per faculty.

Figure 7.11

EXPENDITURE PER STUDENT (FTE) PER FACULTY

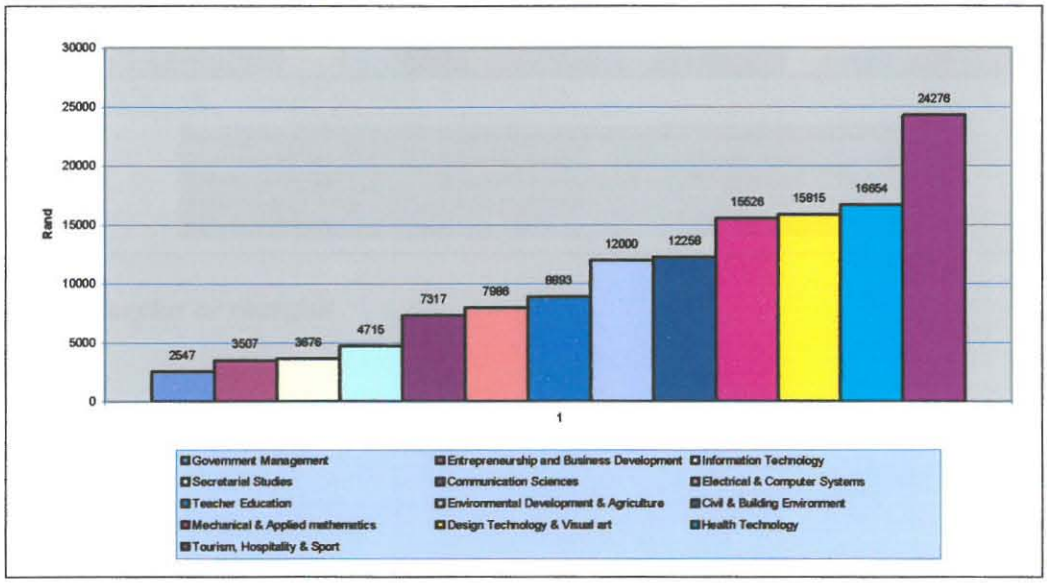


- ***Expenditure per student per department/school***

Having calculated the expenditure per student per department/school it was possible to determine the most expensive and the least expensive department/school. In order from the most expensive to the least expensive with regards to FTE, the following:

Figure 7.12

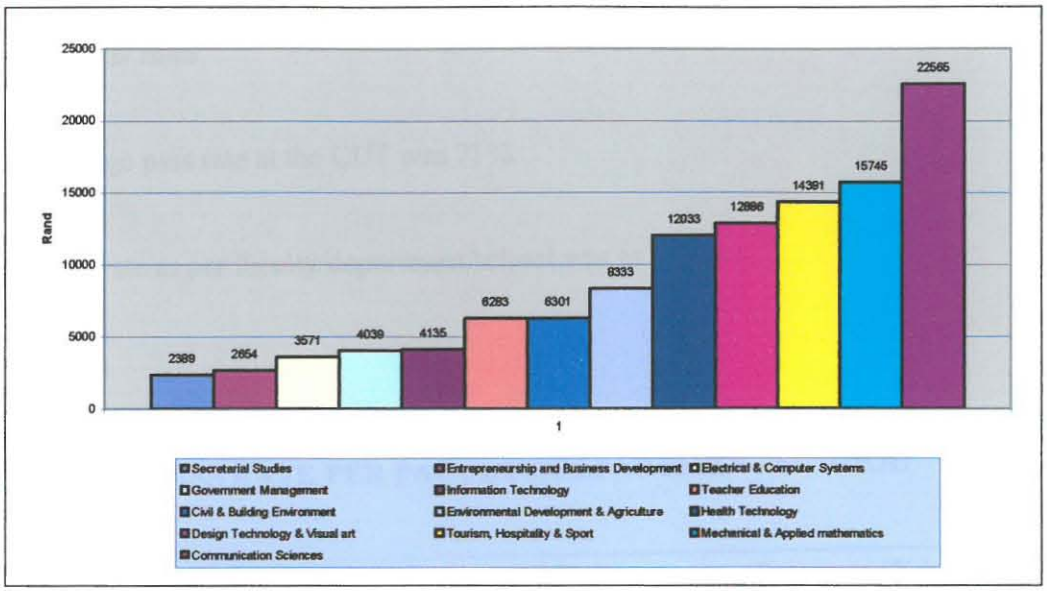
EXPENDITURE PER STUDENT PER DEPARTMENT (FTE)



In order from the most expensive to the least expensive with regards to headcounts, the following:

Figure 7.13

EXPENDITURE PER STUDENT PER DEPARTMENT (HEADCOUNT)

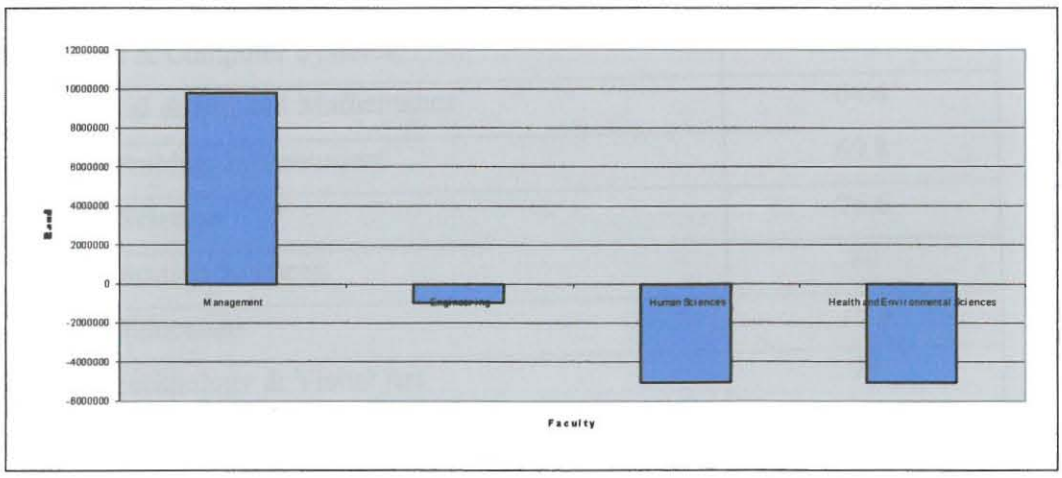


- ***Surplus or shortfall***

The following represented the surplus/shortfall at the academic faculties.

Figure 7.14

SURPLUS OR SHORTFALL



7.2.3.2 Academic effectiven...

The emphasis of this section will be on the measurement of academic effectiveness in terms of pass rates, graduation rates and research outputs.

- ***Pass rates***

The average pass rate at the CUT was 71%.

The pass rate as per faculty/department/school was as follows:

Table 7.7

PASS RATE PER FACULTY/DEPARTMENT/SCHOOL

Faculty/Department/School	**Pass rate (%)**
Management	**70.4**
Information Technology	69.5
Government Management	77.5
Secretarial Studies	78.7
Tourism, Hospitality & Sport	75.7
Entrepreneurship and Business Development	64.9
Engineering	**62.5**
Electrical & Computer Systems	57.9
Mechanical & Applied Mathematics	64.4
Civil & Building Environment	69.8
Human Sciences	**76.6**
Communication Sciences	80
Teacher Education	75.8
Design Technology & Visual Art	73

Health & Environmental Sciences	**85**
Health Technology	87.1
Environmental Development & Agriculture	82.2

- *Graduation rates*

The graduation rates per qualification-type at the CUT were:

Undergraduates	-	15, 9%
Masters	-	20, 6%
Doctoral	-	14, 8%

- *Research outputs*

The number of publications at the CUT was as follows

Faculty of Engineering	-	3
Faculty of Health and Environmental Sciences	-	19
Faculty of Human Sciences	-	0
Faculty of Management	-	1
Administration Sector	-	9
Total	-	**32**

7.3 SUMMARY

Through the analyses of the data, information vital to the objectives of the study was collected. The main focus was to analyze the sources of funding and revenue to determine the sustainability of the CUT, the allocation of funds and staff to the different levels of services and the efficiency and effectiveness of resource allocation.

The next chapter will focus on the interpretation of the analyses done in this chapter to reach conclusions regarding sustainability, resource allocation, efficiency and

effectiveness. Finally, recommendations will be made regarding the allocation of resources to the academia.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

Conclusions reached from the analysis and recommendations regarding resource allocation to academia at the CUT are presented in this chapter.

8.1 INTRODUCTION

The conclusions, from the literature study and the empirical section of the study, are summarized in this chapter. The recommendations, resulted from the conclusions, will be formulated to address the problem statement and objective of the study as it appears in chapter 1, paragraph 1.2 and 1.3.

Conclusions and recommendations will be done on data collected and analysed for 2003. If however, as mentioned in chapter 1, paragraph 1.8, it becomes necessary to refer to previous or future calendar years, it will be done in an integral way.

8.2 CONCLUSIONS

8.2.1 Sustainability

Conclusions reached regarding sustainability should answer to questions such as: Were the resource inputs, funding and revenue, reliable and sustainable?

From the analyses on the *shape and size* of the CUT the following:

In its vision statement the CUT unambiguously articulates its intention to progress through Science, Engineering and Technology (chapter 6, page 112). The CUT also expressed, in the three-year rolling plan, the commitment of the institution to reach a certain level of achievement against certain targets/requirements as determined by the DoE. The national targets/requirements were discussed in chapter 2, while the CUT situation was outlined in chapter 7.

How the CUT has performed against these targets/requirements will be reported on in the following section:

1. Equity in access. The data obtained showed that 77% of students enrolled at the CUT were black and 23% were white, while 50% were female and 50% male (chapter 7, page 131). The broad benchmark parameters of the DoE for equity in general are

60% black students and 5 ts (chapter 2, page 15) while the institutional target indicates 70% black students and 30% white students.

From this information it is clear that the CUT considers equity in access an integral part of their student enrolment management and can be regarded a truly transformed South African higher education institution. Equity in access is largely in line with DoE targets/requirements, except for the fact that the category for white students is not on par.

2. *Staff equity*. 50% of the full-time permanent staff was white and 53% female. Executive management was however predominantly white (65%) and male (85%). The institutional target for executive management is 62% white and 66% male employees. In the professional staff category only 12% of the employees were black and 33% were female (chapter 7, page 131). The institutional target for the professional staff category is 67% white and 53% male employees. The CUT therefore does not comply as yet with the institutional target for staff equity, with black employees in the professional staff category as a matter of concern. The Ministry however, recognises the difficulties in changing the staff profile in higher education institutions and, in particular, doing it so rapidly (National Plan, 2001:39).

3. *Recruitments from SADC countries*. It is evident that the CUT is committed to the enrolment of students from the SADC countries as the enrolment data indicated that a total number of 622 students, 6% of the total enrolments, were from the SADC countries (chapter 7, page 130). The Southern African Development Community commits member states to targeting a maximum of 10% of their student places for students from other Southern African Development Countries (chapter 2, page 18).

4. *Changed enrolments by field of study*. It is also clear that in response to the National Plan (2001:20-21), which advocates a change in enrolments by field of study, the CUT has made considerable progress since 1999. The Ministry expects the ratio between humanities, business and commerce and science, engineering and technology (SET) to be 40%: 30%: 30% respectively (chapter 2, page 19). At the CUT the ratio was 14%: 40%: 45%, indicating that enrolments exceed the national benchmark by 15% in the field of SET, where it really matters (chapter 7, page 130).

5. Increased participation rate. One of the goals of the National Plan (2001:19) was to increase the number of people participating in higher education. The picture presented in the enrolment data of the CUT is one of rapid growth. The number of students (headcount) enrolled at the CUT increased from 6163 in 2000 to 10479 in 2003 (table 7.2, page 128). The target, according to the three-year rolling plan (CUT, 2004: Three year rolling plan), based on the historic trends at the CUT, is 12275 enrolments (headcount) for 2006, which shows an increase of 17% from 2003 and an increase of 99% from 2000.

Growth in higher education will however be limited by the financial constraints of the Government in the future. In July 2004 the DoE proposed that the CUT stabilizes its total enrolments at the levels of 2003 for the 2005 calendar year. The suggestions are thus clearly towards down-sizing. Placing an upper limit on the annual intake of first-time entering undergraduates will control growth in undergraduate programmes. Based on the upper limit for 2005, the CUT will only recruit a maximum of 1270 first-time entering FTE students (1498.6 headcounts) at the Bloemfontein campus and 500 first-time entering FTE students at the Welkom campus. The FTE enrolled student total in all programmes, by 2007, should not exceed 8 000. The capping on enrolments means that the CUT is faced with severe enrolment constraints accompanied by financial implications, as well as implications on the access and selection policy and process at the CUT.

From the analyses on *resource inputs* the following conclusions can be made:

6. Total funding and revenue. Student enrolment data indicated that enrolments increased by 70% from 2000, while the total funding and revenue increased by 73% for the same period.

7. The government subsidy. The government subsidy, as the main source of funding, represented 54, 5% of the total funding and revenue at the CUT and has increased from 51% since 2001 (figure 7.3, page 132). The new funding framework (figure 2.1, page 22) indicated, in a broad summary of ways in which funds flow to higher education institutions, that government grants, as a proportion of total income, would

at average be 50%. If the Mi ith the same funding framework, as discussed in chapter 2, paragraph 2.5.3, the funding from government subsidy prove to be a sustainable source of funding to the CUT.

The current funding framework will however be changed and a new funding framework will be implemented in full by 2006/2007. The placing of upper limits on the annual intake of first-time entering undergraduates will have an impact on the government subsidy that the CUT will receive in the future.

The enrolment planning parameters (chapter 8, page 155) permit that the teaching input units will remain the same for the 2003 to 2005 calendar years, based on the 2003 totals. Because the 2004 and 2005 calendar years fall in the migration period of the move from the current to the revised framework, caps were placed on these teaching unit totals. The teaching output units for 2004 and 2005 are based on the 2002 totals as caps have been placed on the total units.

8. Tuition fees. The Ministry has direct control over only government grants to public higher education institutions and takes no account of income raised from student fees when distributing government grants to an institution (chapter 2, page 21). Tuition fees are thus solely in the hands of the institution. At the CUT the tuition fees represented 32.1% of the total funding and revenue (figure 7.3, page 132). The new funding framework (figure 2.1, page 22) showed that on average 25% of the annual funds of a public higher education institution should be from student tuition and other fees. Tuition fees at the CUT consistently increased over the past years and for the 2003 calendar year there was an increase of 9.5% (chapter 7, page 133). For the 2004 and 2005 calendar years there will be an increase of 8.5% and 6.5% respectively.

9. Other income. Other income only represents 13.4% of the total funding and revenue and therefore plays no major role in the sustainability of resource inputs (figure 7.3, page 132).

10. Cost recovery. The cost recovery by revenue generated of 93% (chapter 7, page 133) showed an improvement of 4% from 2000 to 2003, and the under spending on the recurrent- and staff budget prove that the Management of the CUT has the

spending under control (chapt der spending, however, may also be an indication that funds available were not used optimally. If all funds available for distribution were used, the CUT might have achieved objectives that have not been achieved, for example staff provision where the targets were not met.

11. Bad debts. Bad debts as a % of total student debtors were 8.42% (chapter 7, page 133) and 6.47% in 2002. The institutional target for bad debts is 12%. Although the target has been met, an overall decline in the recovery of outstanding fees for the 2003-year can be observed.

12. Debt ratio. The debt ratio was 4.43:1 (chapter 7, page 134) and for 2002 the ratio was 4.09:1. The institutional target is 2:1. This ratio indicates that the CUT will be able to continue to operate as a going concern.

13. The safety margin. The safety margin measures the ability of the management to contain the expenditure within the available funding and revenue. The safety margin for 2003 was 7.23% (chapter 7, page 134) and for 2002 the ratio was 0.48%. The institutional target is 11%. The huge difference in the margins for 2002 and 2003 was due to the increased tuition fees and student numbers, as well as increased investment income, due to effective and efficient investment management.

Taking all of the above into consideration the conclusion can be reached that the CUT is a sustainable higher education institution, with sustainable sources of funding and revenue and can therefore provide sustainable services.

8.2.2 Resource allocation

From the analyses on resource allocation the following conclusions can be made with regards to the allocation of *funds*.

14. Allocation of funds to academic faculties. Liverpool et al. (1998:4) claims that higher education institutions should devote 60% of their recurrent allocation to academic expenditure. At the CUT the expenditure on academic activities represented 44% of the total CUT expenditure (excluding hostels) (Figure 7.4, page 135).

15. Allocation to faculties. funds, when compared to student enrolments, to faculties revealed large differences between faculties. The Faculty of Management, with 62% of the FTE, spent 37% of funds allocated to the academic faculties, while the Faculty of Human Sciences, with 14% of the FTE, spent 25% of the total funds allocated (figure 7.6, page 139). This may be because of the under staffing in some of the departments/schools in the Faculty of Management or the overstaffing in some of the departments/schools in the other faculties (paragraph 7.2.2.2, page 140).

16. Allocation of funds to departments/schools. The allocation of funds to the departments/schools within faculties also revealed large differences. Examples in the Faculty of Management are:

- The School for Tourism, Hospitality and Sport, representing 297 FTE (7%), spent 31% of the funds allocated to the faculty. This represented an overspending of 4.04% on the budget of the School for Tourism, Hospitality and Sport, excluding salaries.
- The School for Entrepreneurship and Business Development representing 1930 FTE (43%) spend only 29% of the funds allocated to the faculty.

The same pattern also occurred in the other faculties and the differences in spending can be attributed to either under- or overstaffing (table 7.4, page 137) and (figure 7.7, page 140).

17. Expenditure per key line item. The allocation of funding between key line items indicated that salaries represented 64% of the total recurrent expenditure of the CUT and 89% of the expenditure at the faculties/departments/schools (chapter 7, page 138). This ratio increased by 4% from 2000. The spending on salaries is above the institutional target of 60%. This may be due to the overstaffing in non-academic areas (paragraph 7.2.2.2, page 140).

The analyses of the *staff* allocation revealed the following:

18. Permanent full-time lecturing staff to rest of permanent full-time staff. The ratio of permanent full-time academic staff to the rest of permanent full-time staff changed from 1:2.81 in 2000 to 1:4.45 in 2003 (figure 7.8, page 142). As far as the permanent full-time lecturing staff is concerned it became apparent that there was a shortage,

compared with the institutio ıal/197 targets) (table 7.5, page 141). Another concern regarding full-time lecturing staff was that 54% of all vacant posts at the CUT were full-time lecturing posts and that may have contributed to the low graduation rates and high FTE lecturer/FTE student ratio (chapter 7, page 150) and (chapter 8, page 159). The full-time academic staff was however supported by a number of part-time subject specialists who were responsible for 22% of the total lecturing hours. The mixture of full-time and part-time academic staff does not put the CUT into a favourable position as far as "delivery capacity" is concern.

19. Permanent full-time lecturer to student (FTE) ratio. The target of the DoE for the FTE lecturer/ FTE student ratio is 1:25 (CUT, 2004: Three year rolling plan). At the CUT this ratio was 1:31 and compare unfavourable against the requirements of the DoE. It is clear from the analyses that only a few departments reached the DoE target and that most of the departments/schools were way above the target. There were also large differences between the departments/schools. The permanent full-time lecturer to student (FTE) ratio for the Department of Government Management was as high as 1:118, while the ratio for the School for Tourism, Hospitality and Sport was as low as 1:17. It is however, important to remember that the CUT used a high percentage of part-time lecturing staff (chapter 8, page 159) in some of the departments/schools such as the School for Entrepreneurship and Business Development, which will result in a lower permanent full-time lecturer/student ratio (figure 7.9, page 143) and (figure 7.10, page 144).

20. Senior administrative assistant to student ratio. All the faculties were in line with the average of 601 students per senior administrative assistant, except for The Faculty of Human Sciences with 313 students per senior administrative assistant (chapter 7, page 144).

21. Structure: Lecturing staff. There was no formal pyramidal structure for lecturing staff per faculty/department/school at the CUT. At the Department of Communication Sciences 63% of all lecturing staff were senior lecturers, while in other departments there were no senior lecturers. It appeared that most of the departments/schools were understaffed at the senior lecturer level. Junior lecturers and assistants represented on average 40% of the total full-time lecturing staff (table 7.6, page 145).

The question can now be asked: Were the resources distributed equitably and fair between the different service levels?

It is evident from the analyses that the resource allocation at the CUT was not equitable and fair between the different levels of services, as well as the different faculties/departments/schools. The main problem seemed to be the allocation of staff throughout the CUT. As no policy, procedure, model or specific criteria were available at the CUT for the allocation of staff, it became apparent that the allocation of staff was done on an ad hoc basis. The allocation of staff needs to be investigated, because inconsistent and ad hoc procedures can lead to reduced faculty/department/school efficiency, as well as inequity that may result in unsound management of the faculties/departments/schools.

8.2.3 Efficiency and effectiveness

Conclusions reached regarding efficiency and effectiveness will be dealt with in two parts. Firstly, in terms of *financial efficiency* and secondly in terms of *academic effectiveness.*

From the analyses on the efficiency of resource allocation the following conclusions have been reached with regards to *financial* efficiency.

22. Expenditure per student (FTE). The average expenditure per student was R8 691 (chapter 7, page 146). All the departments/schools in the Faculty of Management, except for the School for Tourism, Hospitality and Sport, were well below the average, as well as the Department of Communication Sciences in the Faculty of Human Sciences and the Department of Electrical and Computer Sciences in the faculty of Engineering. All other departments were above the average (figure 7.12, page 147).

When a comparison was drawn between the expenditure per student per department/school it revealed large differences. The most expensive department/school was the School for Tourism, Hospitality and Sport at R24 276 per

student, nearly three times th st expensive department/school was the Department of Government Management at R2 547, three times less than the average (figure 7.12, page 147). Taken into account the conclusions reached in terms of the sustainability of the CUT, as indicated in the last sentence of paragraph 8.2.1, page 157, it is evident that cross-subsidisation between faculties/departments/schools exists.

The large differences between the expenditure per student in the different departments/schools can be attributed to the overstaffing in some departments/schools and the understaffing in other departments/schools. In this context refer to the permanent full-time lecturer to student (FTE) ratio (figure 7.9, page 143).

23. Surplus/shortfall. All faculties indicated a shortfall, except for the Faculty of Management. The fact that only one faculty showed a surplus indicated that the resources were not utilized in the most cost effective way (figure 7.14, page 148).

Academic effectiveness is very important, as it will effect the funding of an institution, and therefore affects resource inputs.

From the analyses on the efficiency of resource allocation the following conclusions can be made with regards to *academic* effectiveness.

24. Pass rate. The average pass rate increased from 67% in 2000 to 71% in 2003 (chapter 7, page 149). During 2003 the pass rates at the Faculty of Management and the Faculty of Engineering were below the average at 70% and 63% respectively (table 7.7, page 149). All the departments/schools with a pass rate below that of the average had high lecturer/ student (headcount) ratios, except for the Department of Mechanical and Applied Mathematics (figure 7.10, page 144). The pass rate in all the departments of the Faculty of Health and Environmental Sciences were the highest at 87% and 82% respectively (table 7.7, page 149). Both of these departments maintained relatively low lecturer/student (headcount) ratios of 1:24 and 1:36 respectively, indicating that the lecturer/student ratio may have an effect on the pass ratio (figure 7.10, page 144).

25. Research outputs In 200 publications (chapter 7, page 150) compared to 23 and 11 in 2002 and 2001 respectively. This indicates a remarkable growth in the number of publications since 2001. The CUT is also involved in a diversity of research projects that helps to address some of the community problems, as well as through the Science Park catering for small business developments.

26. Graduation rates. The benchmarks for graduation rates, according to the DoE are:

Undergraduates	-	25%
Masters	-	33%
Doctoral	-	20%

(table 2.1, page 17).

The graduation rates of the CUT compared unfavourable against the targets of the DoE at 15.9%, 20.6% and 14.8% for undergraduates, masters and doctoral respectively (chapter 7, page 150). The graduation rate for undergraduates dropped from 16.3% in 2002 to 15.9% in 2003, while the graduation rate for masters increased from 12.1% to 20.6% and doctoral graduation rates from 8.7% to 14.8% since 2002. One of the reasons for the drop in the graduation rate for undergraduates may be the increase in the number of students without the corresponding increase in the number of lecturing staff. All the academic activities, against the background of the drop in the undergraduate's rate, at the CUT have however one common goal and that is to ensure that, over time, the CUT will be successful in the graduate output.

As the CUT did not reach the graduation rates of the DoE the conclusion can be reached that the resource allocation at the CUT did not justify the return on investment in the academic faculties. This answers the problem statement of the study namely, that the strategy of the CUT, supported by its resource allocation to academic faculties, does not maximize return on investment within the academic faculties.

8.3 RECOMMENDATIONS

In line with the statement of the problem (chapter 1, page 3) and following the conclusions drawn from the empirical research conducted (chapter 8, paragraph 8.2),

various recommendations wi in an attempt to solve the specific problem.

These recommendations will be funnelled from the criteria, as outlined in the objective of the study (chapter 1, page 3) namely, sustainability, resource allocation, efficiency and effectiveness, into only two categories, namely resource inputs and resource allocation. The rationale for this approach is that sustainable resource inputs and sound resource allocation should result in financial efficiency and academic effectiveness, with the ultimate goal the maximization of return on investment in the academia.

8.3.1 Resource inputs

1. The CUT, like any other higher education institution, is under pressure to become less dependent on Government subsidy. With the funding framework that will be changed and the capping on enrolments, the CUT will have to make an effort to acquire improved levels of funding from proprietors and generate more funds by encouraging entrepreneurship.

2. The creation of a new main stream of income through commercial activities and short courses. For this purpose it will be important that staff should be trained in terms of the Skills Development Act to qualify as workplace assessors.

3. The CUT needs to focus on increasing programme offerings in educational subjects falling under funding groups 3 and 4 (table 2.2, page26).

4. Increase graduation rates, because the funding framework rewards progression towards the demands set by national policies. The CUT should therefore design management tools to monitor students' retention, throughput and completion rates.

5. The CUT should increase research outputs by the creation of a sustainable research climate, enrolments of postgraduate students and an increased staff participation in conferences and accredited articles.

6. The CUT should review tui ısate for the loss of enrolments due to the capping of enrolments by the DoE. The investigation and implementation of a tuition fees model is suggested. The model should be able to determine tuition fees for individual courses and should take the formal scheduled instruction time for the course into account. A weighting procedure, which takes into account the instructional mode and level, as well as cross subsidisation factors, should also form part of such a tuition fees model.

7. Maintain effective investment management through optimising investment returns within conservative investment risk policy.

8. Reduce bad debts through the improvement of collection performance by enhancing the debtor management processes.

9. Establish co-operation with other regional higher education institutions through the creation of a joint strategic plan. Sharing services in this way would probably result in substantial savings for all the institutions involved.

8.3.2 Resource allocation

10. The development and implementation of a staff allocation model, which will at least include the following:

10.1 The development and implementation of policies, procedures and guidelines for the allocation of staff to the different levels of services.

10.2 A pyramidal structure for each category of staff, with special emphasis on the structure in the academia.

11. The allocation of funds should be done in such a way as to ensure viability and affordability.

8.4. A STAFF ALLOCATIC

An academic staff allocation model by Vermeulen (1997: 1-17) will be presented as an illustrative example.

8.4.1 Background information

The basic premise of the allocation of academic staff is that the funds generated by the subsidy formula and tuition fees for a teaching and research professional (C1-personnel) determine the number of C1-posts (at a specific cost unit) that the institution can "afford".

The allocation model may be seen as a model that measures the demand for C1-personnel that is constrained by the available C1-posts. The budget of the faculties for C1-personnel on the other hand gives an indication of the present supply of C1-teaching and research staff for each faculty. The difference (at the same C1-cost unit) between the demand as calculated by the activity model and supply, as determined by the budget of faculties for C1-personnel, gives a measure of a surplus or deficit of staff in each faculty.

8.4.2 The micro model: Formal instructional activities

The academic staff allocation model is based on a time driven accounting procedure.

The model for the allocation of academic staff requires that the overall teaching hours for formal education in a department be determined. The research and administrative activities of the department are determined by norms, as well as research outputs in accredited journals.

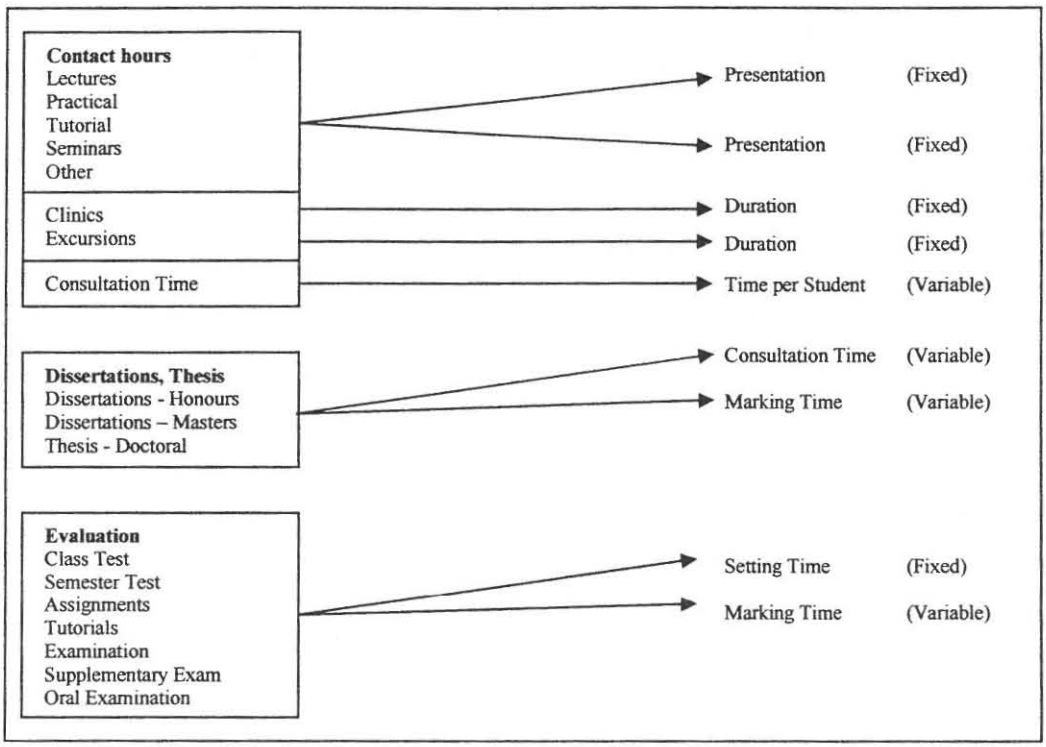
The hours for formal education can be calculated as follows:

1. Determine the activities that have to be performed in the instructional programme. These activities form part of a process where inputs (enrolled students) are serviced to deliver outputs (passed students).

The activities associated wit tional process will be presented in figure 8.1. These activities do not represent all the activities associated with the instructional process, but a number of such activities are shown for illustration purposes.

Figure 8.1

FORMAL EDUCATION ACTIVITIES



2. Determine time norms for activities. A basic condition for setting time norms for activities are that is should be determined on a consensus basis. A consultative process with deans and heads of departments is essential to ensure acceptability of the norms.

The following are examples of time norms. The course level is indicated for example as 100 for first year level, etc.

- *Activity: Preparation*

Factors and time norms (hours) for the preparation of activities
Preparation: 1st group

Level of Subject	Lectures	Practical	Tutorial	Seminars	Other
100	2.0	1.0	1.5	1.5	1.0
200	2.5	1.1	1.8	1.7	1.2
300	2.7	1.2	2.1	2.0	1.4
400	3.0	1.3	2.4	2.4	2.0

Preparation: Follow-up groups (factor)

Follow-up groups	0.33	0.25	0.25	0.25	0.25

- *Activity: Consultation hours*

Consultation time

Level of subject	Minutes
100	5.0
200	5.0
300	7.5
400	7.5

X scaling factor

- *Activity: Evaluation*

Setting time for exam papers (minutes)

Level of Subject	Class Test	Semester Test	Assign-ments	Tutorials	Examina-tion	Supplement ary	Oral
100	75	180	38	38	300	150	100
200	85	180	43	43	300	150	100
300	95	180	45	45	300	150	100
400	100	180	50	50	300	150	120

Time for marking (minutes per student)

Level of Subject	Class Test	Semester Test	Assign-ments	Tutorials	Exami-nation	Supplement ary	Oral
100	5	10	5	3	25	13	20

200	5	[illegible]	[illegible]	3	25	13	20
300	5	10	5	3	25	13	20
400	6	12	6	3	30	15	25

- *Activity: Dissertation/ Thesis*

Dissertations, Thesis

	Honours Dissertations	Masters Dissertations	Doctoral Thesis
Consultation time per student per week (Min)	40	80	90
Marking time per student for final manuscript (hours)	10	40	50

3. Determine the total formal instructional hours per department/faculty by translating these activities, through the time norms for each activity to the total time needed for the delivery of the course. The total number of formal instructional hours in a department and faculty can therefore be determined by simply adding the instructional hours of all the courses presented in a department. Adding across departments gives the instructional hours in a faculty.

8.4.3 An illustrative example

The following information is available:

1. Number of staff members: 1093
2. Average unit cost: R150 478
3. Time distribution:

    66% formal instruction

    20% research

    14% administration

4. Hours for formal education in faculties (calculated according to the micro model in 8.4.2), the budget for (C-1 posts) and the research components per faculty.

Faculty	Hours for formal education	for C-1 posts (Rand)	component
01	278868	35373012	69.82
02	187107	26572050	64.07
03	115685	15165812	138.16
04	81233	8730905	65.17
05	7668	2254722	41.67
06	22585	4062696	54.39
07	249777	30392705	26.35
08	111790	15544529	52.58
09	63769	8836451	7.89
10	32346	5620032	25.28
11	173195	27458187	59.78
Total	**1324023**	**180011101**	**605.16**

Required:

The distribution of academic posts between faculties/departments.

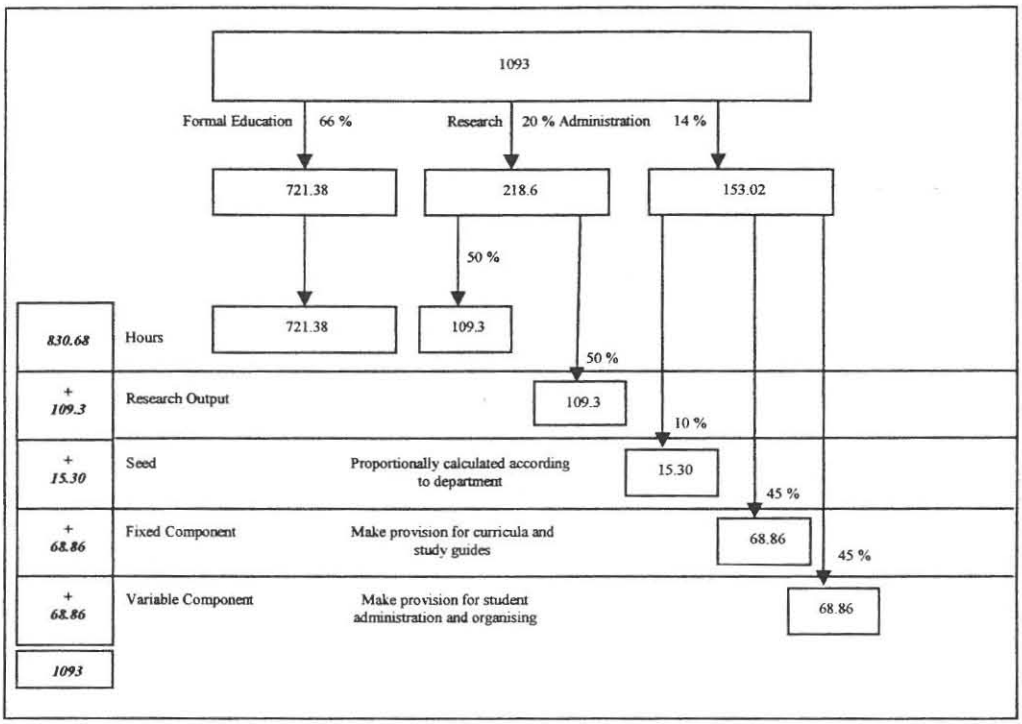
Solution

1. Division of affordable academic posts. The time distribution of 66% for formal instruction, 20% for research and 14% for administrative duties will results in the C1-cost unit posts that can be divided into 721 for formal instruction, 219 for research and 153 for administrative purposes. Figure 8.2 depicts the above division of C1-posts and suggests a further division of the 219 research posts by allocating half of the research posts for seeding and distribute the other half according to the past performance of a faculty's research output, as measured by the average of the number of units published in accredited journals over the past three years in each faculty. In the example it is assumed that the 153 administrative C1-posts are further divided into 15,3 posts, or 10%, for seeding (each department gets an equal part of these posts), 68,86 C1-posts which are divided between the faculties according to the fixed time component of the formal instructional programme in each faculty and another 68,86

C1-posts divided among the ıg to the variable time component associated with the formal instructional programme which is coupled to the number of students.

Figure 8.2

DIVISION OF AFFORDABLE ACADEMIC POSTS



The following columns refer to the columns in table 8.1.

2. A total number of 831 posts is allocated between faculties in direct proportion to the values in column 2 and is shown in column 4.

3. The 109 C1-posts available for research activities are allocated to each faculty according to their contribution to the total number of research output units as depicted in column 13. The allocated C1-research posts are shown in column 5.

4. The 153 C1-posts available activities are allocated proportionally to faculties according to figure 8.2, presented in the division of affordable academic posts, and are shown in column 6.

5. The sum of the allocation for these three distinct components is shown in column 7.

6. Provision has to be made for additional personnel in faculties that have the privilege of private practice for a limited number of hours per year. The additional number of posts made available for private practice is shown in column 8.

7. Provision was also made for a number of posts related to the scarcity of personnel in certain professional disciplines. These allocations are shown in column 9.

8. Column 10 reflects the total number of allocated posts for each faculty according to the model (Columns 7, 8 and 9).

9. The "real" number of C1-cost unit posts in each faculty, as given in column 11, is calculated by dividing the C1-personnel budget of the faculty, as given in column 3, by the cost unit of R150 478.

10. Column 12, which depicts the gap between demand, (column 10) and supply (column 11) of C1-personnel, is a strong directive of C1-staff surpluses or deficits in faculties/departments.

11. Table 8.1 summarizes the outcome of the allocation process that started with the microanalysis of the activities associated with the formal instructional programmes.

8.5 SUMMARY

It became clear from the conclusions and recommendations, as discussed in this chapter, that the strategy followed by the CUT has not maximize return on investment within the faculties so far. The main problem seemed to be the allocation of staff. The most important contribution of this study lies in the recommendation of a possible staff allocation model to be used by the CUT.

Central University of Technology, Free State

Table 8.1

NORMALISED ACADEMIC POST DISTRIBUTION BETWEEN FACULTIES.
(Practice adjustment and scarcity posts included in calculation)

1	2	3	Number of personnel according to hours							11	12	13
Faculty/ Department	Hours for formal education	Budget for C-1 posts (Rand)	Formal education posts				Practice adj.	Scarcity posts	Total	Real no. C-1 cost unit posts R150 478	Surplus (+) Deficit (-)	Research component
			4	5	6	7	8	9	10			
1	278868	35373012	174.96	12.61	32.32	219.89	0.00	0.00	219.89	235.07	15.18	69.82
2	187107	26572050	117.39	11.57	21.22	150.18	6.61	0.00	156.79	176.58	19.79	64.07
3	115685	15165812	72.58	24.96	13.81	111.35	0.00	0.00	111.35	100.78	-10.56	138.16
4	81233	8730905	50.96	11.77	8.89	71.63	0.00	0.00	71.63	58.02	-13.61	65.17
5	7668	2254722	4.81	7.53	1.71	14.05	0.00	0.00	14.05	14.98	0.94	41.67
6	22585	4062696	14.17	9.82	3.53	27.52	0.00	0.00	27.52	27.00	-0.53	54.39
7	249777	30392705	156.71	4.76	27.68	189.15	0.00	6.02	195.17	201.97	6.81	26.35
8	111790	15544529	70.14	9.50	12.77	92.40	0.00	2.09	94.49	103.30	8.81	52.58
9	63769	8836451	40.01	1.43	7.45	48.88	0.00	0.00	48.88	58.72	9.84	7.89
10	32346	5620032	20.29	4.57	3.66	28.52	0.00	0.00	28.52	37.35	8.83	25.28
11	173195	27458187	108.66	10.80	19.97	139.43	23.47	3.73	166.63	182.47	15.84	59.78
Total	**1324023**	**180011101**	**830.68**	**109.31**	**153.01**	**1093.00**	**30.08**	**11.84**	**1134.92**	**1196.26**	**61.34**	**605.16**

BIBLIOGRAPHY

Ambrosini, V. 1998. *Exploring techniques of analysis and evaluation in strategic management*. Europe: Prentice Hall.

Armstrong, M. 1994. *Performance management.* London: Clays Ltd.

ASME, 2003. Continuity and change.
(Available on internet) URL address-
http:// www. Asme.org/change/bscard.html

Balanced Scorecard Institute, 2003.
(Available on internet) URL address-
http:// balanced scorecard.org/basics/bscl.html

Ball, R. & Wilkinson, R. 1994. The use and abuse of performance indicators in UK Higher Education. *Higher Education,* 27: 417-427.

Barak, R.J. & Kniker, C.R. 2002. Benchmarking by State Higher Education Boards. *New directions for higher education,* 118: 93-102.

Behn, R.D. 2003. Why measure performance? Different purposes required different measures. *Public administration review,* 63(5): 586-607.

Bennett, R. 1999. *Corporate strategy*. 2nd ed. London: Pitman Publishing.

Besanko, D., Dranove, D. & Shankey, M. 2000. *Economics of strategy.* 2nd ed. United States of America: Brady Palmer Printing Co.

Beukes, A.E. 2002. *Manual for the planning and writing of assignments for Technikon Free State students.* 2nd ed. South Africa. Bloemfontein: CUT.

Bourne, M. & Bourne, P. 2000. Balanced scorecard in a week.
(Available on internet) URL address-
http://www.1000ventures.com/business_guide/mgmt_measurement-system.html

Bray, M. 2001. Financing higher education: Patterns, trends and options. In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G. Zullo, eds. *Finance in higher education.* Boston: Pearson Custom Publishing, 673-686.

Brinkman, P.T. & Morgan, A.W. 2001. Changing fiscal strategies for planning. In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G. Zullo, eds. *Finance in higher education.* Boston: Pearson Custom Publishing, 425-436.

Bush, T. 2000. Management styles: Impact on finance and resources. In: M. Colemand & L. Anderson, eds. *Managing finance and resources in education,* 99-116.

Cave, M., Hanney, S. & Henkel, M. 1995. Performance measurement in higher education. Revisited. *Public money and management,* 15(4): 17-24.

Central University of Technology, Free State, 2003.
(Available on internet) URL address-
http://www.cut.ac.za
-Strategic plan

Central University of Technology, Free State, 2004.
(Available on internet) URL address-
http://www.cut.ac.za
-History
-Management
-Vision and mission
-Financial policy and procedure
-Policy regarding the budgeting process

-Three year rolling plan

Chaffee, E.E. 2001. The link between planning and budgeting. In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G. Zullo, eds. *Finance in higher education.* Boston: Pearson Custom Publishing, 405-414.

Crandall, R.E. 2002. Keys to better performance measurement. *Industrial management*, 44(1): 19-24.

Dempsey, A. & Pieters, H.N. 1999. *Introduction to financial accountin*g. 3 rd ed. Durban: Butterworths.

De Villiers, L. 2000. How to write a research proposal. *Research seminar,* Pretoria August 2000, 21-25.

Digman, L.A. 1990. *Strategic management. Concepts, decisions, case*s. 2nd ed. United States of America: BPI Irwin.

Doerfel, M.L. & Ruben, B.D. 2002. Developing more adaptive, innovative, and interactive organization. *New directions for higher education*, 118: 5-27.

Faul, M.A., Du Plessis, P.C., Niemand, A.A. & Koch, E. 2001. *Fundamentals of cost and management accounting.* 4thed. Durban: Butterworth.

Flynn, D. & Koornhof, C. 2000. *Fundamental accounting.* 4th ed. Kenwyn: Juta.

GENROE, 2003. The balanced scorecard. An introduction to balanced scorecards. (Available on internet) URL address-
http://www.genroe.com

Ghenmawat, P. 2000. *Strategy and the business landscape.* New Jersey: Prentice Hall.

Grant, R.M. 2002. *Contemporary strategy analysis*. 4th ed. Oxford: Blackwell Publishers Inc.

Hamel, G. & Prahalad, C.K. 2001. Strategy as stretch and leverage. *The strategy reader*, 35-49.

Harold, T. 2000. Power in the resource allocation process: The impact of 'rational systems'. *Journal of higher education policy and management,* 22(2): 127-137.

Health Systems Trust, 2001. *Guidelines to conduct district health expenditure reviews in South Africa.* Durban: The Press Gang.

Higgans, J.M. & Vincze, J.W. 1993. *Strategic management. Text and cases.* 5 th ed. United States of America: Harcourt Brace Jovanovich College Publishers.

Hill, C.W.L. & Jones, G.R. 1998. *Strategic management – an integrated approach.* 4th ed. United States of America: Houghton Mifflin Company.

Hiltrop, J.M. & Despres, C. 1995. Benchmarking HR practices: Approaches, rationales and prescriptions for action. In: D.E. Hussey, ed. *Rethinking strategic management. Ways to improve competitive performance.* Chichester: John Wiley & Sons, 197-220.

Horngren, C.T., Foster, G., Datar, S.M. & Uliana, E. 1999. *Cost accounting in South Africa. A managerial emphasis.* Republic of South Africa: Prentice Hall.

Jauch, L.R. & Glueck, W.F. 1995. *Business policy and strategic management.* 5th ed. New York: McGraw-Hill Book Company.

Johnson, G. & Scholes, K. 1999. *Exploring corporate strategy*. 5th ed. London: Prentice Hall.

Katsioloudes, M. 2002. *Global strategic planning.* United States of America: Butterworth-Heinemann.

KING REPORT, 2002. *King report on corporate governance for South Africa 2002.*

Lasher, W.F. & Greene, D.L. 2001. College and university budgeting: What do we know? What do we need to know? In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G. Zullo, eds. *Finance in higher education.* Boston: Pearson Custom Publishing, 475-502.

Leandri, S.J. 2001. Measures that matter: How to fine-tune your performance. *Journal for quality and participation, 24*(1): 39-42.

Liverpool, L.S.O., Eseyin, E.G. & Opara, E.I. 1998. Modeling for resource allocation to departments and faculties in African universities.
(Available on internet) URL address-
www.aau.org/studtprogram/reports.html

Lumpkin, D. 2003. *Strategic management. Creating competitive advantage.* New York: McGraw-Hill.

Lynch, R. 2000. *Corporate strategy*. 2nd ed. England: Prentice Hall.

Maassen, P.M.A & Van Vught, F.A. 1999. Strategic planning. *Management and decision-making in higher education institutions*, *Unit 2,* 185-199.

MacMillan, H. & Tampoe, M. 2000. *Strategic management*. Oxford: University Press.

Malmi, T. 2003. Introduction to the balanced scorecard.
(Available on internet) URL address-
http:// www qpr.com/balanced scorecard/balanced_scorecard_intra.html

Marr, B. & Schluma, G. 2003. Business performance measurement – past, present and future. *Business performance management,* 41(8): 680-687.

Massy, W.F. 1999. Re-engineering resource allocation systems. *The nature of academic organisation. Unit 1*, 237-263.

Miller, A. 1998. *Strategic management*. 3rd ed. United States of America: Irwin McGraw-Hill.

Mouton, J. 2002. *Understanding social research. 3*rd ed. Cape Town: NBD/Paarl Print.

Olve, N., Roy, J. & Wetter, M. 1999. *Performance drivers. A practical guide to using the balanced scorecard.* England: John Wiley & Sons.

O'Shannassy, T. 2003. Modern strategic management. Balancing strategic thinking and strategic planning for internal and external stakeholders. *Singapore Management Review*, 25(1): 53.

Pearce, J.A. & Robinson, R.B. 2000. *Strategic management. Formulation, implementation, and control.* 7th ed. Malaysia: McGraw-Hill.

Pitts, R.A. & Lei, D. 2003. *Strategic management. Building and sustaining competitive advantage*. Ohio: Thomson.

Porter, L.J., Oakland, J.S. & Gadd, K.W. 1998. *Evaluating the operation of the European Quality Award Model for self-assessment*. London: Chartered Institute of Management Accountants.

Rea, P. & Kerzner, H. 1998. *Strategic planning. A practical guide*. United States of America: Thomson Publishing Co.

Rigby, D. 2003. Management tools.
(Available on internet) URL address-
http://www.Bain.com/management_tools/tools_balanced.asp?groupCode=2

RSA (Republic of South Africa). 1998. *Employment Equity Act* (Act No. 55 of 1998). Pretoria: Government Printer.

RSA (Republic of South Africa). 1997. *Higher Education Act* (Act No. 101 of 1997). Pretoria: Government Printer.

RSA (Republic of South Africa).1999. National Policy on HIV/AIDS for Learners, Students and Educators, 1999.
(Available on internet) URL address-
http://education.pwv.gov.za/content/document/447.pdf

RSA (Republic of South Africa). 1998. *Skills Development Act* (Act No. 97 of 1998). Pretoria: Government Printer.

RSA DoE (Republic of South Africa. Department of National Education). 1997. *Education White Paper 3: A programme for higher education transformation.* Pretoria: Government Printer.

RSA MoE (Republic of South Africa. Ministry of Education). *2001. National Plan for Higher Education*. Pretoria: Government Printer.

RSA MoE (Republic of South Africa. Ministry of Education). 2004. *The new funding framework: How Government grants are allocated to public higher education institutions.*
(Available on internet) URL address-
http://education.pwv.gov.za/content/documents/405.pdf

Sandbach, J. & Thomas, H. 1999. Sources of funds and resource allocation. In: D. Warner & D. Palfreyman, eds. *Higher education management*. Buckingham: SRHE and Open University Press, 47-65.

Schmidtlein, F.A. 2001. Why linking budgets to plans have proven difficult in higher education. In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G.Zullo, eds. *Finance in higher educat*ion. Boston: Pearson Custom Publishing, 416-424.

Segal-Horn, S. 2001. *The strategy reader*. Oxford: Cornwall International Ltd.

Shaw, A. 2003. A guide to performance measurement and non- financial indicators. (Available on internet) URL address- http:// www.fpm.com/journal/mattison.htm

Shulock, N. & Harrison, M. 2001. Integrating planning, assessment, and resource allocation. In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G. Zullo, eds. *Finance in higher education.* Boston: Pearson Custom Publishing, 437-444.

Sim, K.L. & Koh, H.C. 2001. Balanced scorecard: A rising trend in strategic performance measurement. *Measuring business excellence,* 5(2): 18-28.

Simanowitz, A. 2003. The what, why, and how of an impact assessment. (Available on internet) URL Address- http://www.microfinancegateway.org/section/resourcecenters/impactassessment/what/

Slocum, H. 1996. *Management*. 7th ed. Cincinnati: South-Western College Publishing.

South African Constitution. 1996. Bill of Rights. (Available on internet) URL address- http://www.gov.za/constitution/1996/96cons2.htm

Stonehouse, G., Hamill, J. & Campbell, D. & Purdie, T. 2000. *Global and international business. Strategy and management.* Great Britain: Bookcraft.

Struwig, F.W. & Stead, G.B. 2001. *Planning, designing and reporting research.* Cape Town: Pearson Education South Africa.

Strydom, H. & De Vos, A.S. 2001. Sampling and sampling methods. In: A.S. De Vos ed. *Research at grass roots*. Goodwood: NBD Printers, 189-201.

Sullivan, M.M. & Wilds, P.C. 2001. Institutional effectiveness: More than measuring objectives, more than student assessment. *Assessment update*, 13(5): 4-5.

Swift, J.A. 1995. *Introduction to modern statistical quality control and management.* Florida: St. Lucie Press.

Thomas, H. 1999. Managerial implications of adopting formula-based systems of resource allocation. *Educational management and administration, 27*(2): 183.

Thompson, J.L. 2001. *Understanding corporate strategy.* Oxford: Alden Press.

Thompson, A. & Strickland, A. 1998. *Strategic management. Concepts and cases*. 10th ed. United States of America: Irwin McGraw-Hill.

TIRISANO. 2002. Department of Education.

Vaghefi, M.R. & Hueilmantel, A.B. 1999. *Strategic management for the XXIst century*. United States of America: CRC Press.

Vermeulen, P.J. 1997. An academic staff allocation model. *Institutional research: The state of the art in Southern Africa*, Cape Town 28-29 October 1996. Southern African Association For Institutional Research, 157-174.

Wade, D. & Recardo, R. 2001. *Corporate performance management. How to build a better organization through measurement-driven strategic alignment.* United States of America: Butterworth-Heinemann.

Warren, K. 2002. *Competitive strategy dynamics.* Chichester: John Wiley & Sons.

Wright, P., Kroll, M.J. & Parnell, J. 1998. *Strategic management. Concepts and cases*. 4th ed. New Jersey: Prentice Hall.

Winston, G.C. 2001. Subsidies, hierarch and peers: The awkward economics of higher education. In: J.L. Yeager, G.M. Nelson, E.A. Potter, J.C. Weideman & T.G. Zullo, eds. *Finance in higher education.* Boston: Pearson Custom Publishing, 25-42.

Wongrassamee, S., Gardiner, P.D. & Simmons, J.E.L. 2003. Performance measurement tools: The balanced scorecard and the EFQM excellence model. *Measuring business excellence,* 7(1): 14-30.

Zaharia, S. 2002. A comparative overview of some fundamental aspects of university management as practiced in several European countries. *European Centre for Higher Education*, 27(3): 301-311.