



A Sustainability Reporting Framework for South African Higher Education Institutions

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ABSTRACT

Sustainability has gained prominence globally among nations, regions and organisations as a result of factors such as the effects of climate change on the environment, diminishing natural resources and rising population growth with their concomitant impact on economies and social systems. South Africa is a signatory to the United Nations Global Compact (UNGC) that promotes international principles and best practices on sustainable development. Sustainability Reporting is one such best practice.

Sustainability Reporting is imperative for good governance and organisations are now expected to support sustainability issues, risks and performance in a balanced and reasonable way. The United Nations and other global bodies have been in the vanguard in promoting guidelines for sustainability reporting with the Global Reporting Initiative (GRI) being the most Prominent Sustainability reporting guideline.

The South African Higher Education Institutions generate a number of reports in the course of any given academic year. As has been the case in the global corporate world, failures in governance in some South African universities point to weaknesses in their governance, especially when it comes to oversight of the operations of institutions. Considering this, it is important to critically examine strategic planning processes to understand the aspects that are important for the survival of Higher Education Institutions (HEIs) and therefore they should be regularly and closely monitored.

The study begins by exploring literature relating to strategic planning, governance, sustainability reporting practices and Business Intelligence (BI) technologies in Higher Education. The primary objective of the investigation is to propose a sustainability reporting framework for Higher Education Institutions in South Africa. It is argued that with the aid of appropriate BI tools, the proposed Sustainability Reporting framework would be useful in tracking progress in the implementation of strategic plans and at the same time strengthen governance in institutions. The study identified elements of Sustainability Reporting that are important for strategic planning.

To develop the proposed framework, an empirical investigation was undertaken. Four online questionnaires were completed and returned by 108 participants comprising of Registrars and

Information Managers at 23 South African Higher Education Institutions as well as to Information Managers in selected International Higher Education Institutions and Managers at the Nelson Mandela Metropolitan University (NMMU). The online questionnaires were developed to elicit information to include in the proposed framework. To analyse results, both descriptive and inferential statistics such as Analysis of Variance (ANOVA) were used. Results from the surveys revealed that Higher Education Institutions globally and in South Africa are grappling with the same issues. When it comes to Sustainability Reporting, factors such as information culture and Business Intelligence maturity levels were not found to be very different among the various institutions.

In the case study at NMMU, correlational analysis confirmed that variables such as Management buy-in and the availability of BI reports were positively related to effective strategic planning and vice versa. Similarly, a strong correlation was observed between reporting guidelines and strategic planning.

Moreover, the study highlighted the critical role of management and leadership in a university in creating an environment that supports Sustainability Reporting. In conclusion, it was recommended that efforts should be directed at creating awareness and at training staff on aspects that promote sustainability. It is incumbent upon the institution to take advantage of and promote technological tools and techniques to enable the easy flow of data and information in understandable and usable formats to all its stakeholders. Finally, a Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI) and guidelines for implementing Sustainability Reports are proposed.

Keywords: Strategic Planning, Governance, Sustainability Reporting, Business Intelligence, Higher Education Institutions.

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations	Terms in full
ANC	African National Congress
ANOVA	Analysis of Variance
BCG	Boston Consulting Group
BI	Business Intelligence
CARTA	Complete, Accurate Relevant, Timely, Appropriate
CERs	Corporate Environmental Reports
CHET	Centre for Higher Education Transformation
CI	Competitive Intelligence
CIO	Chief Information Officer
COSATU	Congress of South African Trade Unions
CRM	Customer Relations Management
CSR	Corporate Social Responsibility
CSRs	Corporate Sustainability Reports
DHET	Department of Higher Education and Training
DM	Data Mart

DPSEEA	Driving Force - Pressure - State – Exposure – Effect framework
DPSIR	Driving Forces Pressures, States, Impacts and Responses
DSS	Decision Support Systems
DST	Department of Science and Technology
DW	Data Warehouse
ECM	Enterprise Content Management
ECSF	European Corporate Sustainability Framework
EFQM	European Foundation for Quality Management
EMAS	European Eco-Management and Audit Scheme
EPM	Enterprise Performance Management
EPMF	Enterprise Performance Management Framework
EPRF	Extended Performance Reporting Framework
ERP	Enterprise Resource Planning
ESS	Effective Subsidy Students
ETL	Extracting, Transforming, Loading and data integration
FSRHEI	Framework for Sustainability Reporting for Higher Education Institutions
FTE	Full Time Equivalents

GPSAHE	Governance Practices in SA Higher Education
GRI	Global Reporting Initiative
HDI	Historically Disadvantaged Institution
HE	Higher Education
HEI	Higher Education Institutions
HEMIS	Higher Education Management Information System
HEQC	Higher Education Quality Committee
HESA	Higher Education South Africa
HSEC	Health, Safety, Environment and Community
HSRC	Human Sciences Research Council
IIRC	International Integrated Reporting Committee
ICT	Information and Communication Technologies
JIT	Just in Time
LOB	Line-of-Business
KPI	Key Performance Indicator
MDGs	Millennium Development Goals
MIS	Management Information Systems

NCHE	National Commission for Higher Education.
NFF	New Funding Formula
NMMU	Nelson Mandela Metropolitan University
NPOs	Non Profit Organisations
NQF	National Qualifications Framework
OECD	Organisation for Economic Cooperation and Development
OLAP	Online Analytical Processing
OLTP	Online Transaction Processisng
PAIA	Promotion of Access to Information Act
PASS	Professional and Academic Support Staff
RDBMS	Relational Database Management Systems
RFID	Radio Frequency Identification Device
RSA	Republic of South Africa
SAPSE	South African Post-Secondary Education
SAQA	South African Qualifications Authority
SCM	Supply Chain Management
SD	Sustainable Development

SDI	Sustainable Development Indicator
SETA	Sectoral Education and Training Authority
SR	Sustainability Reporting
SRI	Social Responsibility Index
SRIHE	Sustainability Reporting in International Higher Education (SRIHE)
SRPHESA	Sustainability Reporting Practices in Higher Education in South Africa
SRPNMMU	Sustainability Reporting Practices at Nelson Mandela Metropolitan University
TBD	Tableau de Board
TBL	Triple Bottom Line
TBVC	Transkei Boputhaswana Venda and Ciskei (Bantustan states before 1994 democracy in South Africa)
TQM	Total Quality Management
TSA	Technikon South Africa
UNCSD	United Nations Conference on Sustainable Development
V2020	Vision 2020 (NMMU's strategic plan 2010-2020)

CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Organisations are faced with a growing demand from their stakeholders for accountability which has resulted in a change in the nature and scope of reporting (Daub, 2007:75-76). Annual reports, environmental reports and social reports are giving way to Sustainability Reports. Sustainability Reports cover economic, social and environmental information (Lackmann, Ernstberger and Stich, 2012:111-113). These reports provide important information to support organisational strategic planning and governance processes.

Organisations need an effective monitoring system in order to ensure that goals set out in strategic plans are achieved (Sevier, 2003:18). Sustainability Reporting remains an important mechanism to track the performance of organisations against their set goals and objectives. Daniell (2006:35) states that organisational strategies fail because they are based on snapshots of organisations that are constantly changing. Casey (2009:34) opines that the objective of Sustainability Reporting is to represent organisational sustainability issues, risks and performance in a balanced and reasonable way. This implies that all facets of organisational life that are of interest to stakeholders should be covered in the reports. In that way, organisational governance is strengthened.

Effective governance provides the foundation for success in the development and attainment of organisational goals and objectives. Sound corporate governance tenets require organisations, as corporate citizens, to embrace corporate governance principles. In South Africa, the King III code which underscores the importance of Sustainability Reporting is widely recognised and accepted as the standard for corporate governance. The King III code is based on the view that “sustainability is the primary moral and economic imperative of the 21st century. It is the most important source of both opportunities and risks for business” (IoD, 2009:9).

Governance best practices enjoin Higher Education Institutions to be transparent and accountable to stakeholders. Paraschivescu and Radu (2011:115) note that in the 21st century characterised by globalisation, Higher Education should be in the forefront of sustainability efforts. The International Association of Universities (IAU) is actively attempting to promote sustainability awareness in universities (UNESCO, 1993). Durso (2009:24-27) observes that in the USA, the growing demand for accountability from the Federal Government has put pressure on Higher Education Institutions to focus on performance, productivity and efficiency.

Fonseca, MacDonald, Dandy and Valenti (2011:24-25) have highlighted the role that Higher Education Institutions could play in global sustainability initiatives and call for the development of tools to improve Sustainability Reporting. In the South African Higher Education context, Visser (2005:30) contends that corporate citizenship is relatively new as an academic field; preponderance of research in the field is focused on the private sector. Fonseca *et al.* (2011:23), in their research on Higher Education, reinforce this view that there have been only limited studies on Sustainability Reporting in the Higher Education Sector. Lozano (2011:68) states that the Global Reporting Initiative (GRI) guidelines are currently the global best practice standard for Sustainability Reporting but cautions that these guidelines were not developed for universities.

The South African Government has set the tone with the promulgation of sustainability-promoting legislation. This legislation recognises the importance of sustainability and spans a wide range of areas as shown in Table 1.1.

Table 1.1: South African legislation promoting sustainability

Focus area	Legislation
Environment health and safety	<ul style="list-style-type: none"> • Mineral Health and Safety Act (1996) • National Water Act (1998) • National Environmental Management Act (1998) • Air Quality Bill (2003)
Labour, governance and ethics	<ul style="list-style-type: none"> • Electronic Communications Security Act 68 of 2002 • Employment Equity Act (1998) • National Archives of South Africa Act 43 of 1996 • Prevention and Combating of Corrupt Actions Act (2004) • Promotion of Access to Information Act (2000) • Promotion of Access to Equality and Prevention of Unfairness Discrimination Act (2000) • Public Finance Management Act 1 of 1999 • Skills Development Act (1998)
Social economic development	<ul style="list-style-type: none"> • Reconstruction and development fund Act (1994) • Development Facilitation Act (1995) • Minerals and Petroleum Resources Act (1995) • Broad Based Black Economic Empowerment Act (2004)

Source: Adapted from Visser (2005:31)

The legislation listed in Table 1.1 aims to increase accountability and transparency, enhance conservation of scarce resources and regulate the use of non-renewable natural resources. According to Gazette Notice No. 1012, the Minister for Higher Education and Training has published draft regulations for reporting by public Higher Education Institutions and consequently published the notice to replace existing regulations (RSA, 2012b). Adherence to the legislation contributes to overall sustainability and therefore to reporting on an organisation's compliance with the requirements of the regulatory environment. Higher Education Institutions are faced with similar challenges, albeit in different contexts. Institutions need to respond to a changing landscape with the necessary agility to remain relevant and sustainable. Therefore, Sustainability Reporting is a key enabler to good governance.

Geraughty (2010:142) states that "Sustainability Reporting is slowly becoming the norm rather than the exception in an increasingly globalised economy". Choudhuri and Chakrabourty (2009:48) concur that due to a paradigm shift in public expectations, Sustainability Reporting is gaining widespread acceptance in both private and public sectors. Extant literature suggests a trend of growing awareness of Sustainability Reporting globally (Gandey, 2012:367). As testimony to this phenomenon, the King Report cites the proliferation of initiatives, tools and guidelines on sustainability (IoD, 2009:11) and the growth in Corporate Social Investment (McPeak and Tooley, 2008:4). In the global arena, factors such as the increasing need for awareness on the part of stakeholders, as a result of failing accounting systems and breakdown in governance, have fuelled the drive for better corporate governance (White, 2002:14-15). The growing awareness concerning corporate governance in South Africa has been attributed to ISO14001, the King code and the GRI (Visser, 2005:31-34).

As Corporate Social Responsibility (CSR) and environmental awareness grow in importance, it is envisaged that other variables for measuring success will emerge. Jose (2003:62) extends the list of variables for measuring business success to include business practices, employee treatment, community engagement and the environment. Ferns, Emelianova and Sethi (2008:117) contend that since Environmental, Social and Governance (ESG) factors have a significant bearing on corporate reputation, reporting on them is influenced by concerns of accountability and agility to respond to evolving information requirements.

In practice, Sustainability Reporting is in its infancy, characterised by mixed responses - some organisations are leading the way while others are either ignoring it or are slow in starting (Borkowski,

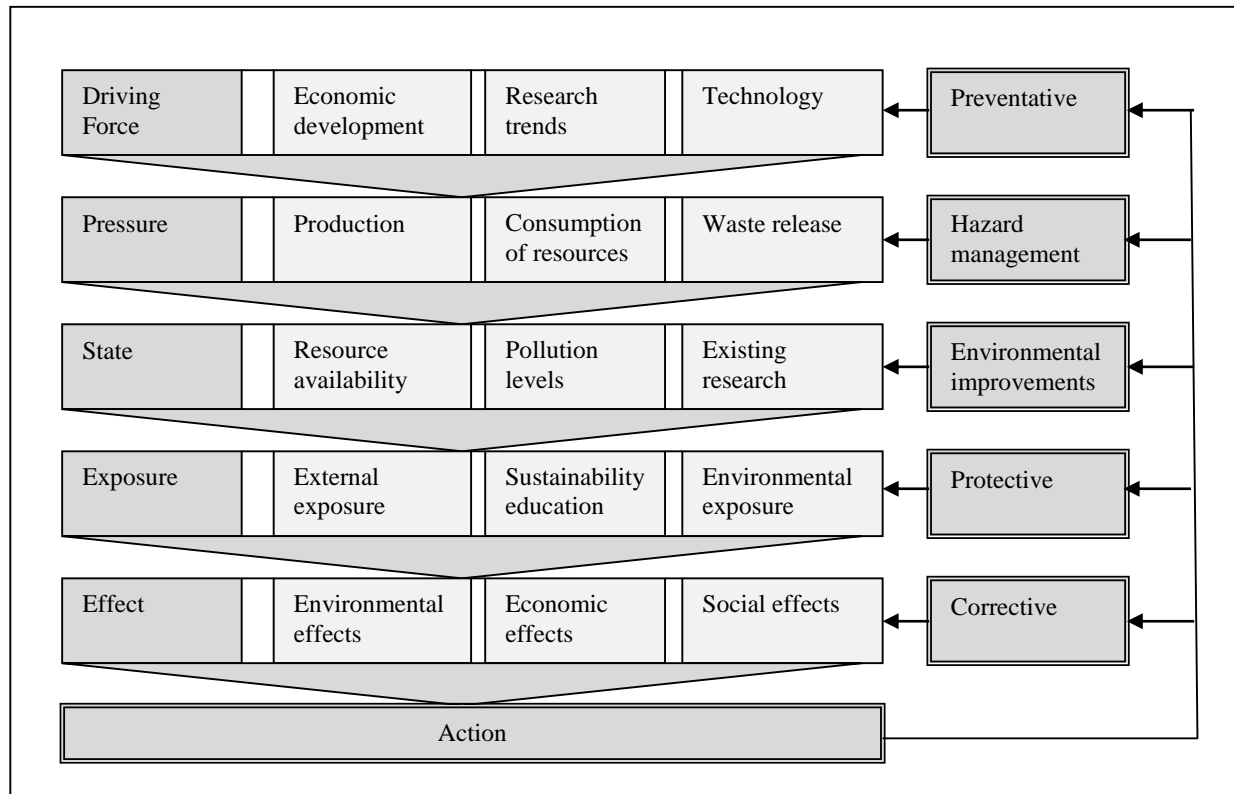
Welsh and Wentzel, 2010:30). Standing and Jackson (2007:170) observe that the inclusion of sustainability as a business and academic issue is a recent development and as such there remains a challenge regarding the adoption of a common understanding relating to sustainable activities in work practices. Sustainability Reporting is enabled by Information and Communications Technology (ICT) (Gieselmann, Severith, Vom Berg and Gomez, 2013:217). Sustainability Reporting is supported by Business Intelligence (BI) tools and techniques.

Business Intelligence (BI) techniques present a host of reporting capabilities. Adelman, Moss and Abai (2005:260) state that “Business Intelligence provides decision makers with a 360-degree view of their business, enabling them to make faster and more reliable decisions”. The importance of BI is supported by Blumberg, Cooper and Schindler (2011:4) who argue that the complexity of business has introduced more risks associated with business decisions which necessitate the need for a sound information base. Business Intelligence provides early warning signs for decision makers and is based on the capability to provide fast and easy access to data for analysis and decision making. In view of the complex nature of organisations, a sound information base supports good decision making (Blumberg, Cooper and Schindler, 2011:4). Organisations need to monitor their performance against set targets. One way of achieving this is through reporting on all facets of the organisation – Sustainability Reporting.

1.2 Sustainability Reporting Frameworks

There is a growing proliferation of initiatives, tools and guidelines for Sustainability Reporting. This is testimony of growing awareness of the importance of sustainability across sectors (IoD, 2009:11). Pennington and Moore (2010:25-26) add that a number of reporting frameworks have emerged in response to pressure for Sustainability Reporting. Examples include the Global Reporting Initiative (GRI), ISO 14000 series, Triple bottom line, the Natural step, the compass Sustainability, Local Agenda 21, the OECD guidelines for multinationals, Dow Jones sustainability index, Star rating and the Fortune Corporate Reputation rating (Lozano, 2006:965). Evaluation of sustainability in various facets of life is gaining momentum and as a result, assessment of sustainability is becoming important. Waheed, Khan, Veitch and Hawboldt (2011:722) proposed a sustainability framework that provides a causal link for various driving forces, pressures and states of sustainability. This is depicted in Figure 1.1.

Figure 1.1: Driving Force – Pressure – State – Exposure – Effect (DPSEEA) framework



Source: Waheed *et al.* (2011:722)

Figure 1.1 depicts a Driving-Force-Pressure-State-Exposure-Effect (DPSEEA) framework for sustainability by identifying the key drivers for sustainability, the key focus areas and the link between its various elements. Although useful in providing insight into causal links, the framework does not include key elements in South African Higher Education such as the role of stakeholders.

The GRI reporting framework is a product of wide and extensive consultation and the G3 guideline is considered to be the global standard for Sustainability Reporting (Geraughty, 2010:144-145). The G4 is the most recent GRI Sustainability Reporting guideline and it offers reporting principles, standard disclosures and an implementation manual for the preparation of sustainability reports by organisations - Global Reporting Initiative (GRI, 2013). Sustainability is in its early stages with few sector-specific guidelines.

This study proposes to develop a framework for Sustainability Reporting for South African Higher Education Institutions. Nelson Mandela Metropolitan University (NMMU) has developed a ten-year strategic plan (Vision 2020). Sustainability Reporting presents an opportunity for the NMMU to

improve its strategic planning processes. Guidelines for Sustainability Reporting in the South African Higher Education Institutions are limited with the result that coherence and consistency in reporting are often lacking. Sustainability covers the entire gamut of elements that are critical to the survival of any organisation and therefore any omission in reporting could potentially jeopardise the attainment of set goals and objectives.

1.3 The Research Problem

Currently there is no Sustainability Reporting framework for South African Higher Education Institutions (HEI), which leads to weaknesses in governance and strategic planning processes in HEI.

1.4 The Thesis Statement

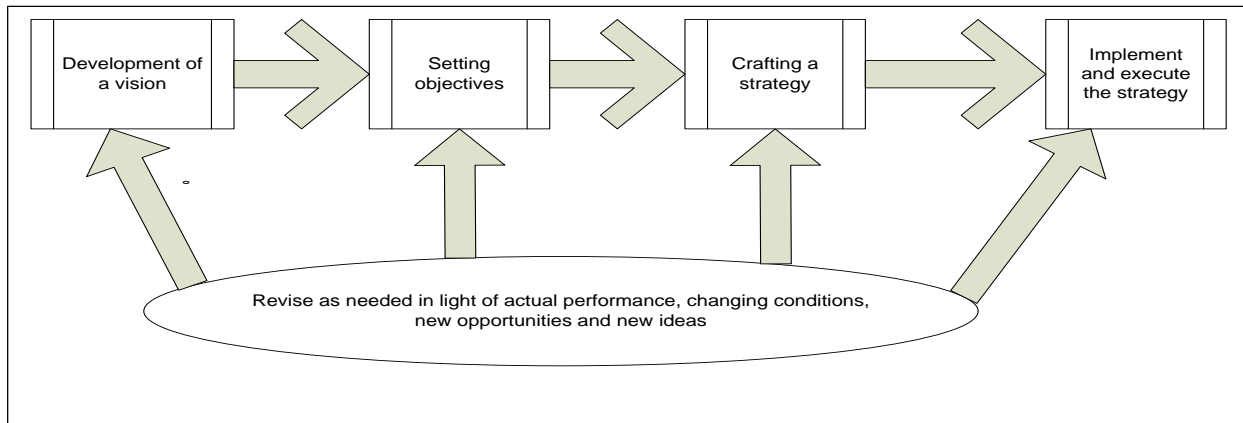
The problem statement is linked with the following thesis statement:

A Sustainability Reporting Framework is needed to enhance strategic planning and governance processes in South African Higher Education Institutions.

1.5 Literature Study and Research

Strategy formulation and implementation have become common practice in organizations across sectors – including Higher Education. Organisations in the private sector, often faced with intense competition, are embracing corporate best practices such as Sustainability Reporting. South African Higher Education Institutions could learn lessons from the private in respect of strategic planning. Thompson, Strickland and Gamble (2005:18) identified formulation and implementation as depicted in Figure 1.2.

Figure 1.2: Strategy making process



Source: Thompson, Gamble and Strickland (2005:18)

The strategy making process is a sequential and iterative process that starts with the formulation of a desired end (vision) for the organisation and then sets objectives in order to achieve that desired end. The strategy document details the activities that an organisation chooses to undertake in pursuance of its objectives. This usually forms the basis of the implementation and monitoring of the strategy (Thompson, Strickland and Gamble 2006:14).

Grant (2010:199) mentions that the strategic process (the dialogue that ensures the communication of knowledge and ideas and builds commitment and consensus) is the most important part of strategic planning. The point is underscored by Kanter (2010:36) who concludes that whereas strategy usually springs from a few minds, the onerous task of execution requires everyone's coordinated efforts. Thompson, Strickland and Gamble (2005:346-354) identify the following actions that promote better strategy execution:

- Well-conceived institutional policies and procedures;
- Adoption of best practices and an ethos of striving for continuous improvement; and
- A culture of linking rewards and incentives to strategy execution.

Afuah (2009: 4) states that strategy is often about rewriting the rules of the game, overturning existing ways of creating and appropriating the created value. He calls for new game strategies which often come in the form of innovation. Innovative ways are required to streamline processes, improve quality and reduce the cost of running organisations. Grant (2010:9-13) identifies factors that are key to the

success of strategy implementation. These are: simplicity, consistency, a profound understanding of the operating environment, objective appraisal of required resources and effective implementation. He adds that having a strategic fit or alignment between an organisation and its external environment is important for success. Morgan and Page (2008:164) point out that organisations often fail to implement change because the processes of designing and implementing transformation are not aligned with the strategies of the organisation.

1.5.1 Sustainability Reporting

The King III code on corporate governance is anchored in leadership, sustainability and corporate citizenship (IoD 2009:6). Leaders are called upon to direct organisational strategies and operations towards sustainable economic, social and environmental performance.

The degree of attainment of organisational strategic goals and objectives should be a key criterion in gauging the leadership performance in organisations. To this end, performance and risk assessment of an organisation's Board of Directors requires a set of criteria that are evaluated regularly and that monitor all the strategy processes such as conceptualisation, formulation and implementation. Bore (2006:44-56) advocates the use of Enterprise Performance Management (EPM) to keep a check on how an organisation keeps track of its strategic focus. Kendrick (2004:70) warns against the dual danger of ignoring risk management while striving to achieve set strategic objectives and the inability to develop credible Key Performance Indicators (KPIs) that present a holistic and balanced view of the organisation.

There is a need for Sustainability Reporting standards because of the large volumes of information covering all sets of strategic focus areas. Borkowski, Welsh and Wentzel (2010:30) decry the lack of Sustainability Reporting standards similar to the Generally Accepted Accounting Principles (GAAP) in the field of Accounting. However, they note the progress made by the Coalition of Environmental Responsible Economies (CERES) towards establishing the Global Reporting Initiative (GRI) as a standard which has gained extensive acceptance internationally. The GRI's reporting standard of 2002 (GR2) was revised and updated in 2006 (G3) with the latest release in 2012 (G4). The GRI and has since become the de facto Sustainability Reporting standard. Richards and Dickson (2007:20) attribute the growth in universal acceptance of the GRI to extensive and wide consultation with stakeholders. Awareness of the challenge of developing standards applicable across sectors and geographic locations, demands the involvement of a diverse stakeholder base in the process of developing standards.

Vandenplas and Harris (2006:87) state that success in the implementation of sustainable reports depends on active sponsorship from the Board as well as in embedding the reporting requirements in governance structures and processes of the organisation. Geraughty (2010:144-145) makes a similar observation and further proposes steps that could be followed in developing standards.

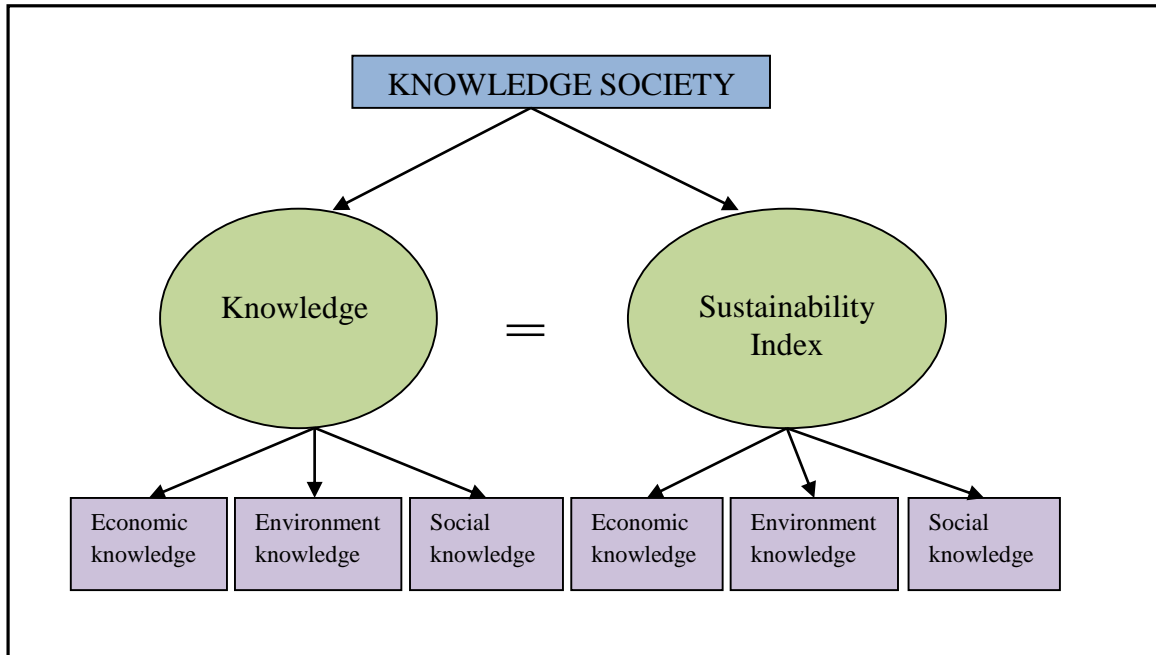
The introduction of Sustainability Reporting also has its attendant shortfalls. For example, Pojasek (2009:85-86) has identified shortcomings with Sustainability Reporting, such as failure to focus on important risks and the tendency to cover many issues without a corresponding mechanism of ensuring results. Therefore, he adds, Sustainability Reporting should contextualise the organisation while addressing how the business is progressing and not how the sustainability initiative is progressing. White (2005:38) recalls that initiatives in management accounting such as Total Quality Management (TQM), Activity-Based-Costing (ABC) and Just in Time (JIT) failed to yield the expected benefits as a result of fragmentation and non-alignment with organisational strategies. He concludes that Sustainability Reporting is doomed to fail unless it is tied to and viewed from a strategic viewpoint.

Although Sustainability Reporting is a relatively new phenomenon in South Africa, parallels in its implementation can be drawn from the challenges occasioned by the shift in Accounting Reporting to comply with the International Financial Reporting Standards (IFRS). Factors such as organisational structures, strategic processes, data capabilities and people are identified as key enablers whenever changes are introduced. Aras and Crowther (2008:13) note that the amount of information being reported on Corporate Social Responsibility (CSR) has increased and has remained meaningful despite the lack of an imposed standard. Borkowski, Welsh and Wentzel (2010:32-36) state that voluntary, Sustainability Reporting is driven by ethical and economic considerations. Hess (2009:786) postulates that inclusion of anti-corruption indicators in sustainability reports helps to combat the corruption while enhancing accountability to stakeholders.

1.5.2 Sustainability Reporting in Higher Education

The 21st century will be characterised by a knowledge-based society where knowledge is the most wanted good (Paraschivescu and Radu, 2011:116). Universities are expected, therefore, not only to advance knowledge on sustainability but also to embrace sustainability practices in their daily existence. The link between knowledge on sustainability and sustainability measures is shown in Figure 1.3.

Figure 1.3: Knowledge and Sustainability Index



Source: Paraschivescu and Radu (2011:117)

Figure 1.3 highlights the dual role of Higher Education Institutions in promoting sustainability. Teaching and learning ought to incorporate sustainability elements. Knowledge of economic, environmental and social aspects of sustainability should translate into indicators for gauging performance against indicators set in those three categories.

In the draft regulations for reporting by public Higher Education Institutions, South African universities will be required to prepare a five-year performance plan and report. Bi-annual reports will be required to facilitate effective monitoring of performance and institutions will have to comply with recommendations of the King Report on governance. Government Gazette Notice No. 1012 proposes that the Annual report should be published before the end of June of each year and should conform to certain requirements (RSA, 2012b). These new regulations have formally introduced ‘Sustainability Reporting’ into Higher Education. Through compliance with the proposed regulations, South African public universities will join their international counterparts that have made various strides toward sustainability. Table 1.2 gives examples of universities that have reported their sustainability efforts.

Table 1.2: Universities with reports on sustainability initiatives

University	Web page where report is available
Australian National University Annual Reports.	www.anu.edu.au/facilities/anugreen/annual_report.html
Pennsylvania State University.	www.bio.psu.edu/Greedestiny/index.shtml
University of British Columbia's Annual Report for 2002.	www.sustain.ubc.ca/pdfs/annual2003cb.PDF
University of Florida sustainability indicators report.	www.sustainable.ufl.edu/indicators.htm
University of Michigan Sustainability Assessment.	http://css.snre.umich.edu/css_doc/CSS02-04.pdf
University of North Carolina – Chapel Hill Campus Sustainability Report.	http://sustainability.unc.edu/Documents/AnnualReportWeb2003.pdf
University of Oregon Annual Reports.	http://darkwing.uoregon.edu/~eic/
University of Vermont's Environmental Report card.	www.uvm.edu/greening

Source: Lozano (2006:969)

In Higher Education, some of the financially well-endowed colleges in the United States and Canada have undertaken to report on sustainability indicators linked to use and management of endowment funds (June, 2007:A23). Other commentators have mooted the Graphical Assessment of Sustainability in Universities (GASU) as a tool for Sustainability Reporting in universities (Lozano, 2011:70).

1.5.3 Business Intelligence (BI) in Higher Education

Information and Communication Technologies (ICT) tools enable strategic implementation processes. Some organisations develop separate ICT strategies to support business. Chen, Mocker and Preston (2010:238-242) argue that Information Systems Strategy is the shared view of the role of ICTs in supporting and enabling business strategy. Das and Narayan (2005: 94) define ICT as “a diverse set of technological tools and resources to create, disseminate, store, bring value addition and manage information”. Torre and Moxon (2001:618-619) argue that ICT will undoubtedly transform business processes, customer relationship management and procurement. Morgan and Page (2008:156) state

that “the contribution of ICT initiatives in organisations was historically gauged in efficiency terms...but it is now more appropriate to consider the potential strategic value of ICTs in effectiveness terms.” In a bid to influence the change of behaviour towards sustainability, Gieselmann *et al.* (2013:218) argue for a sustainable Customer Relations Management (SusCRM) system. Sustainability Reporting requires a solid ICT support base.

The choice of areas for reporting depends on the comprehensiveness of an organisation’s Management Information Systems (MIS). The use of Business Intelligence tools and techniques for data integration, consolidation, analysis and communication is common practice. This is evident from the increase in the development and use of data warehouses, data marts, dashboards and scorecards in conjunction with other data mining tools and techniques in Sustainability Reporting. Adelman, Moss and Abai (2005:6) identify data integrity, data quality, BI and performance measurement as the key components of a good data strategy for any organisation. The key components for Business Intelligence (BI) include data warehousing, data mining, use of Balanced Score Cards (BSC) and digital dashboards (Adelman, Moss and Abai, 2005:264-269). Business dashboards illustrated in Figure 1.4, assist organisations to communicate complex information in a faster and easier way. They consolidate data from various systems and present the summaries in an aesthetically appealing manner.

Grant (2010: 26-27) states that the purpose of analytical tools is not to provide answers but to help in understanding the issues involved. Bore (2006: 52-53) identifies key ingredients in the establishment of successful data warehouses. Viaene and Willemse (2006:17) suggest that ICT tools enable automated support for Corporate Performance Management (CPM). He adds that the Enterprise Data Warehouse is the fulcrum for an automated CPM. Maclean and Rubernak (2007:2) observe a trend in which some organisations use hardcopy, executive summaries supported by metrics and their websites as a way of making Sustainability Reports easily accessible. Dagan (2007:23) adds that dashboards and scorecards provide a quick and convenient mechanism for assessing the performance of key metrics in an organisation. Hanselman (2009:32-36) encourages the use of dashboards to assist in decision making and provide the much-needed feedback on the strategy process.

Bore (2006:44) argues that deployment of Enterprise Resource Planning (ERP), Customer Relations Management (CRM), Supply Chain Management (SCM) and other systems for capturing and recording transactions will be meaningless if the data stored are not organised and synchronised. Management, he adds, require appropriate indicators to monitor and evaluate progress. The importance of using correct

reporting metrics in strategic implementation cannot be overemphasised. Verschoor (2004:16) promotes use of integrity-driven performance enablers such as the use of the correct metrics and clear communication of strategy objectives.

1.6 Research Overview

The objectives of this study as well as the research questions and the methodology that will be used in the study are discussed in this section. A thesis structure is also proposed.

1.6.1 Primary Objective

The primary objective (**ROp**) of this study is to develop a Sustainability Reporting Framework for Higher Education Institutions in South Africa.

1.6.2 Secondary Objectives

In pursuance of the primary objective, the study also addresses the following secondary objectives:

RO1: To identify the factors that influence strategic planning in South African Higher Education;

RO2: To identify the characteristics of the South African Higher Education governance system;

RO3: To identify the factors which influence Sustainability Reporting in SA Higher Education;

RO4: To identify the key factors that influence BI in South African Higher Education;

RO5: To identify appropriate research design and methodology for a study on Sustainability Reporting in SA Higher Education; and

RO6: To develop a Framework for Sustainability Reporting for South African Higher Education.

1.6.3 Research Questions

The main research question (**RQm**) is:

What are the components of a Sustainability Reporting Framework for South African Higher Education Institutions?

The subsidiary research questions are based on the main research question and are as follows:

RQ1: What factors contribute to effective strategic planning in Higher Education Institutions?

RQ2: What are the characteristics of the South African Higher Education governance system?

RQ3: Which factors influence Sustainability Reporting in SA Higher Education?

RQ4: What are the key factors that influence BI in South African Higher Education?

RQ5: Which research design and methodology is appropriate for a study on Sustainability Reporting in South African Higher Education?

RQ6: How are the components of a Sustainability Reporting Framework in South African Higher Education interlinked?

Table 1.3 presents a summary of the study by linking the research objectives, research questions and chapters in which they are discussed.

Table 1.3: Summary of research objectives, research questions and chapter outcomes

Research Objectives	Research Questions	Chapter
ROp. To develop a Sustainability Reporting Framework for Higher Education Institutions in South Africa.	RQm. What are the components of a Sustainability Reporting Framework for South African Higher Education Institutions?	Chapter 1: Introduction. Chapter 9: Conclusions and Future Research.
RO1. To identify the factors that influence strategic planning in South African Higher Education.	RQ1. What factors contribute to effective strategic planning in Higher Education Institutions?	Chapter 2: Strategic Planning in Higher Education.
RO2. To determine the characteristics of the South African Higher Education governance system.	RQ2. What are the characteristics of the South African Higher Education governance system?	Chapter 3: Governance in Higher Education.
RO3. To identify factors which influence Sustainability Reporting in South African Higher Education.	RQ3. Which factors influence Sustainability Reporting in South African Higher Education?	Chapter 4: Sustainability Reporting in Higher Education.
RO4. To identify the key factors that influence BI in South African Higher Education.	RQ4. What are the key factors that influence BI in South African Higher Education?	Chapter 5: Business Intelligence in Higher Education.
RO5. To identify an appropriate research design and methodology for a study on Sustainability Reporting in South African Higher Education.	RQ5. Which research design and methodology is appropriate for a study on Sustainability Reporting in South African Higher Education?	Chapter 7: Research Design and Methodology.
RO6. to develop a Framework for Sustainability Reporting for South African Higher Education.	RQ6. How are the components of a Sustainability Reporting Framework in South African Higher Education interlinked?	Chapter 6: Summary of literature review in relation to the empirical studies. Chapter 8: Empirical results and discussion of the findings.

1.6.4 Research design

To develop a framework for Sustainability Reporting, literature was first critically reviewed. Questionnaires were designed by using information from the literature reviewed and administered to target groups. Thereafter, data were empirically collected by four online surveys. Purposive sampling was used to select respondents to the surveys. These included Registrars, members of the Association of South African Universities Directors of Information Technology (ASAUDIT), members of the association of Information Technology professionals in Higher Education in North America and beyond (EDUCAUSE) as well as the Council of Australian Universities Directors of Information Technology (CAUDIT). A case study, involving management of the Nelson Mandela Metropolitan University (NMMU), Port Elizabeth, where the researcher is currently working as Chief Information Officer, was undertaken. Software packages such as Survey Monkey and Statistica were utilised to analyse the data collected.

1.6.5 Scope of the Study

The study entailed extensive literature review on strategic planning, governance, Sustainability Reporting and Business Intelligence (BI) in Higher Education Institutions. In addition, surveys on Sustainability Reporting practices in Higher Education Institutions both in South Africa and in selected international universities were carried out. The study also included a case study on Sustainability Reporting practices at the Nelson Mandela Metropolitan University (NMMU).

1.6.6 Significance of the Study

At the theoretical level, this study will lead to the development of a framework for Sustainability Reporting for South African Higher Education Institutions. At the practical level, it is envisaged that the study will contribute towards developing Sustainability Reporting for South African Higher Education institutions.

1.6.7 Research Outline

Chapter 1: Introduction – This chapter introduces the study and sketches the background leading to the research problem, questions and objectives.

Chapter 2: Strategic planning in Higher Education – This chapter outlines the processes of strategic planning in Higher Education with the focus on factors that influence strategic planning.

Chapter 3: Governance in Higher Education – This chapter reviews the existing literature on the Higher Education governance systems in South Africa.

Chapter 4: Sustainability Reporting in Higher Education – This chapter discusses the factors that influence the introduction of Sustainability Reporting in Higher Education.

Chapter 5: Business Intelligence in Higher Education – Business Intelligence (BI) tools, capabilities and approaches are discussed.

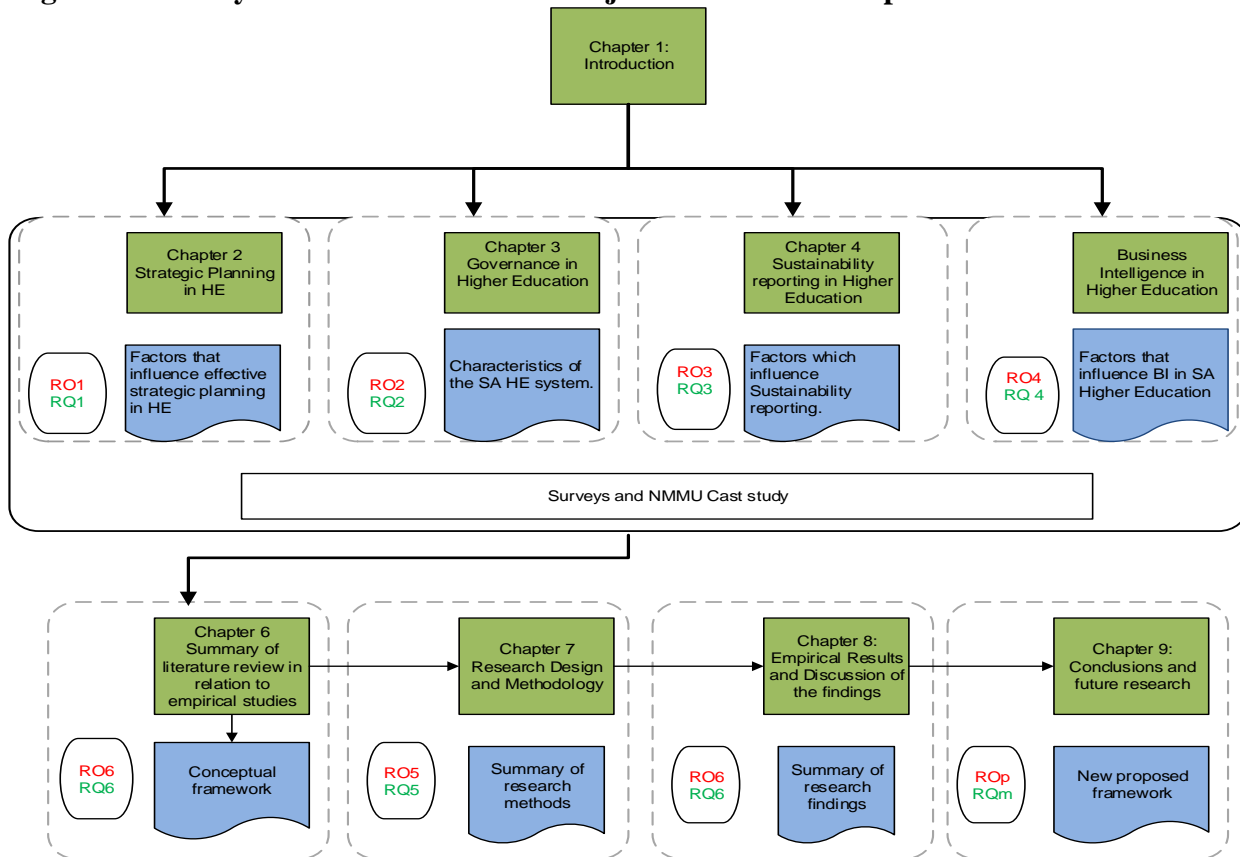
Chapter 6: Summary of literature review in relation to empirical studies – This chapter presents a conceptual Sustainability Reporting Framework based on a synthesis of key themes that emerge from preceding chapters.

Chapter 7: Research design and methodology – In this chapter, the research strategies and designs used in the study are discussed.

Chapter 8: Empirical results and discussion of the findings – This chapter contains the analysis of results and discussion the research data collected through questionnaires.

Chapter 9: Conclusions and future research – The final chapter of the study will draw conclusions from the study and make recommendations. Figure 1.4 shows the chapter layout.

Figure 1.4: Study overview and research objectives for each chapter



Source: Researcher’s own construct

1.7 Summary

This chapter introduced the study by discussing literature on the four themes that serve as a background to the study on Sustainability Reporting in Higher Education. These themes include strategic planning, governance, Sustainability Reporting and its importance and Business Intelligence (BI).

A number of factors that have contributed towards making sustainability an important matter that should be considered by organisations were discussed. These factors include the following:

- The changing regulatory climate;
- International compacts, national legislation and best practices on governance and sustainability;

- Advances in Information and Communication Technologies (ICTs) for gathering, storing and processing and presenting data;
- The growing interest in performance monitoring and evaluation; and
- Complexity of decision making and the importance of making informed decisions.

The chapter also provided an overview of the study. Aspects such as the research problem, research objectives, research questions, research design and the scope of the study were discussed. The chapter also provided an outline of the study with the aim of setting the context in which the research problem was formulated.

Chapter 2 provides a review of literature relating to strategic planning in organisations and in Higher Education Institutions in particular.

CHAPTER 2: STRATEGIC PLANNING IN HIGHER EDUCATION

2.1 Introduction

Organisations, including Higher Education Institutions (HEI), that wish to succeed in the current fast-changing, operating environment should formulate and implement strategic plans. While asserting that governance, strategy and sustainability are inseparable and recognising that strategies are imperative for the sustainability of organisations, the King III Report stresses the need for leaders to take responsibility for defining the strategies of their organisations (IoD, 2009:12-13). In the Higher Education Sector, the University Council is the body mandated with the responsibility of ensuring that set institutional goals and objectives are achieved. This chapter discusses strategic planning and explores its implications for Higher Education.

Newman, Couturier and Scurry (2004:3) concur in their observation that institutions of Higher Education are finding their traditional niche areas being contested as a result of increased competition. Survival in a sector experiencing diminishing resources and increasing competition occasioned by technology and globalisation requires Higher Education Institutions to use strategic planning in order to enhance their chances of succeeding.

The level of success achieved from strategic planning is influenced by internal and external factors. An appreciation of these factors is an indispensable element in attaining success. Higher Education Institutions should understand what factors influence strategic planning and devise appropriate and relevant responses.

Gabriel and Galligah (2010:12) posit that strategic planning in Higher Education has been given more impetus by the increase in public scrutiny for better accountability of Higher Education Institutions. In addition to being a response to competition and public expectations, strategic planning is beneficial to Higher Education Institutions.

Nelson Mandela Metropolitan University (NMMU), a South African Higher Education Institution, developed a ten-year strategic plan, called Vision 2020. The processes that culminated in the production of the plan provide a good basis for a better understanding of strategic planning in the Higher Education Sector.

This chapter addresses the following research objective and research question:

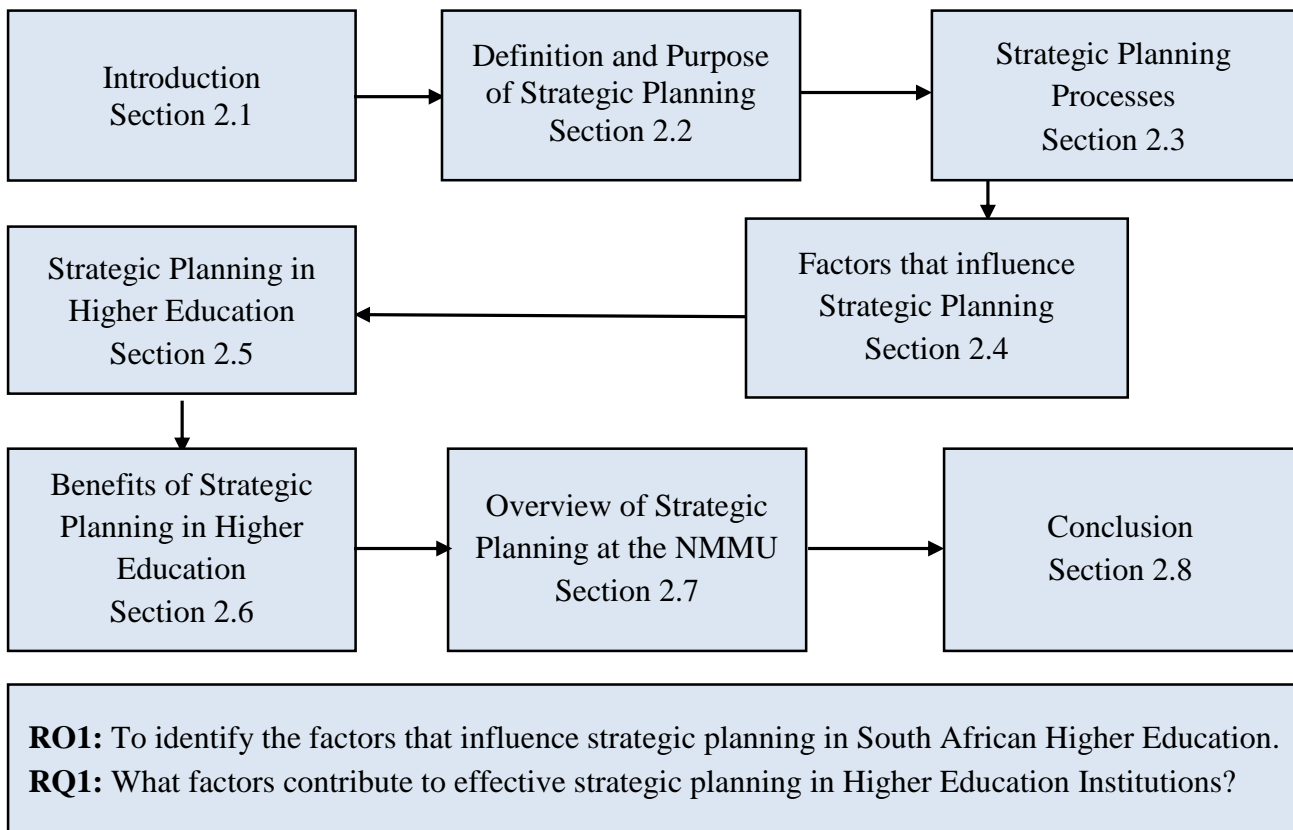
RO1: To identify the factors that influence strategic planning in South African Higher Education.

RQ1: What factors contribute to effective strategic planning in Higher Education Institutions?

This chapter begins with the introduction (Section 2.1) followed by a discussion on the definition and purpose of strategic planning in Section 2.2. The processes involved in strategic planning are discussed in Section 2.3 while Section 2.4 considers the factors that influence the success of strategic planning. This is followed by a discussion on strategic planning in the Higher Education Sector (Section 2.5) and its associated benefits (Section 2.6). An overview of strategic planning at the NMMU is discussed in Section 2.7. The conclusion in Section 2.8 contains the key deliverables based on the reviewed literature.

The outline of the study is reflected in Figure 2.1.

Figure 2.1: Chapter 2 outline



2.2 Definition and Purpose of Strategic Planning

Strategy has been defined by Alfred (2006:6) as “the systematic way of positioning an institution with stakeholders in its environment to create value that differentiates it from competitors and leads to a sustainable advantage.” According to Porter (2011b:2) organisations often mistake operational effectiveness for strategy. Whereas operational effectiveness can be used as a means of achieving an organisation’s strategy, it is not really strategy. The end result of strategy is to ensure that an organisation chooses a distinct position that influences its choice of activities. A further distinction is also made between strategy and tactics. The latter often fail to address the big picture as they tend to be short-term in nature (Alfred, 2006:6-7).

According to Kim and Mauborgne (2011:138), strategies can be described as being either red ocean or blue ocean with the former representing all aspects of an existing operating environment while the latter represents new opportunities that an organisation could pursue. Red ocean strategies are based on the structuralist paradigm or environmental determinism whereby the organisation is at the mercy of external forces. By contrast, blue ocean strategies are based on the reconstructivist viewpoint whereby actions and beliefs of players in industry determine the boundaries. Therefore, organisations may choose to pursue red ocean strategies, blue ocean strategies or both.

Peng (2009:10) states that strategy is a combination of an organisation’s intended and emergent activities and therefore concludes that “strategy is a firm’s theory about how to compete successfully”. Therefore, strategic planning entails both formulation and implementation of strategy. Grant (2010:22) adds that, depending on the turbulence of the organisation’s operating environment, strategic planning deals with both design and emergent planning.

Through strategic planning, organisations determine their major goals and therefore develop policies and procedures geared at meeting set objectives (Nickels, McHugh and McHugh, 2008:186). Sevier (2003:18) points out that strategic planning in Higher Education should be about recognising the alignment between the university and its environment and should result in one organising principle around which the institution’s activities should revolve. The essence of strategic planning is to align limited organisational resources with a clear destination (Seymour, 2011:32).

Ozdem (2011:1888) opines that as a concept, strategic planning is an instrument that allows for the development of long-term plans in view of prevailing risks and opportunities and therefore concludes

that strategic planning would breed efficiency. Focusing on the Higher Education Sector, Hayward and Ncayiyana (2003:3) maintain that the purpose of strategic planning is to provide continuous examination and evaluation of an institution's strengths, weaknesses and resource requirements with a view to building effectiveness. In addition, strategic planning contributes to the restoration of operational effectiveness in situations characterised by anarchy in management.

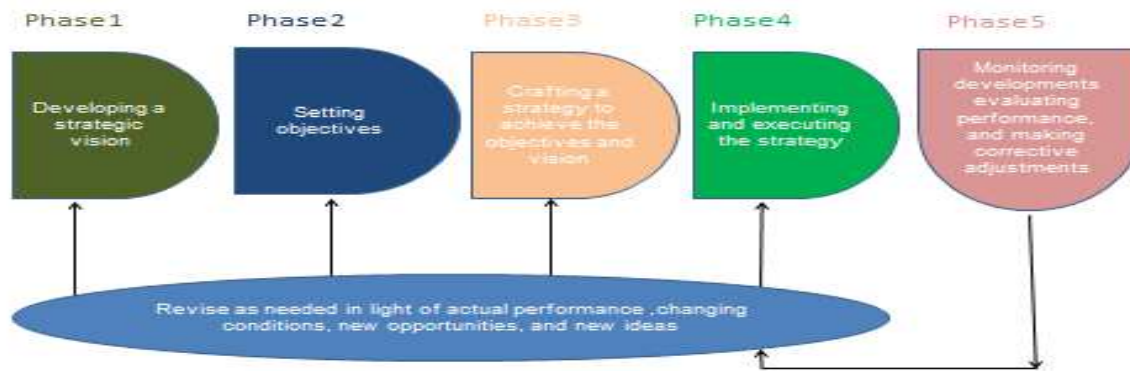
Porter (2011b:26-27) avers that strategy entails making trade-offs which include deciding what activities not to undertake and how to integrate and create a fit among the activities in an organisation without which sustainability and distinctiveness cannot be attained. Hayward and Ncayiyana (2003:12-13) support this view and conclude that organisations become more focused by making trade-offs. Porter (2011b:28) further states that strategies that revolve around systems of activities are more sustainable than those built on individual activities.

The above discussion makes a distinction between strategies and strategic planning and provides definitions of both. Strategies emerge from the strategic planning process. The purpose of strategic planning is to better understand and focus the organisation, identify and mitigate risks and enhance operational efficiency. The purpose of strategic planning in Higher Education is to enhance institutional effectiveness and improve management capability.

2.3 Strategic Planning Processes

Strategic planning involves a number of steps that are carried out by means of various tasks. These tasks can be classified into key processes that constitute the strategic planning cycle. Thompson, Strickland and Gamble (2006:14) have summarised the phases in the processes undertaken during strategic planning in Figure 2.2.

Figure 2.2: Strategy making process

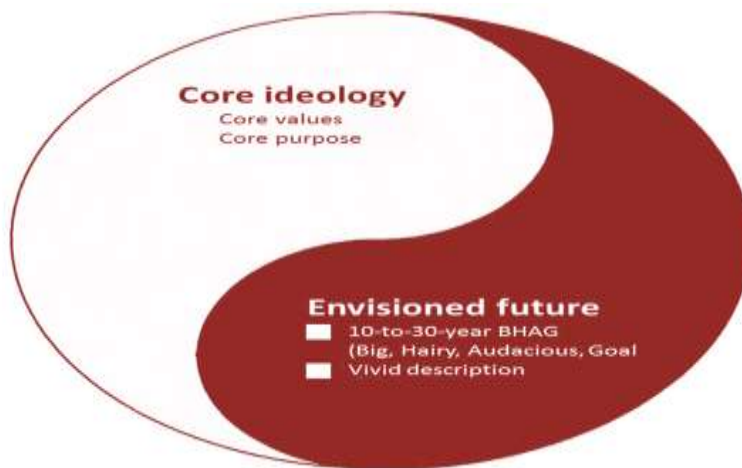


Source: Thompson, Gamble and Strickland (2006:14)

Figure 2.2 demonstrates that strategic planning is an iterative process that requires organisations to develop a vision and set objectives which result in formulating a strategy. Strategies need to be implemented in order for the organisation to derive value. Grant (2010:199) states that the strategic process is the most important part of strategic planning.

Setting of a vision is one of the first and most important steps in the strategy process. This is underscored by Collins and Porras's (2011:78) statement that "vision provides guidance about what core to preserve and what future to stimulate". A clear vision delineates core ideology (what should not change) from envisioned future (future aspiration) as depicted in Figure 2.3.

Figure 2.3: Articulating a Vision



Source: Collins and Porras (2011:82)

Two key elements of developing a vision are sketched in Figure 2.3. Core ideology should express the core values and core purpose of an organisation while the envisioned future should cover a 10 to 30 year horizon and should be ambitious and vividly described. Porter (2011b:27-28) also recommends that strategies should cover a decade or longer because continuity promotes improvement in singular activities while allowing an organisation to develop competencies required for its strategy. Frequent changes in strategies result in inconsistencies across functions and promote organisational dissonance. Therefore, vision should be translated into strategic objectives.

Strategic planning as a process is presented in a different way by other researchers. For example, Lourens (2010:47) illustrates the strategic planning process components as shown in Table 2.1.

Table 2.1: Synopsis of strategic-management process components

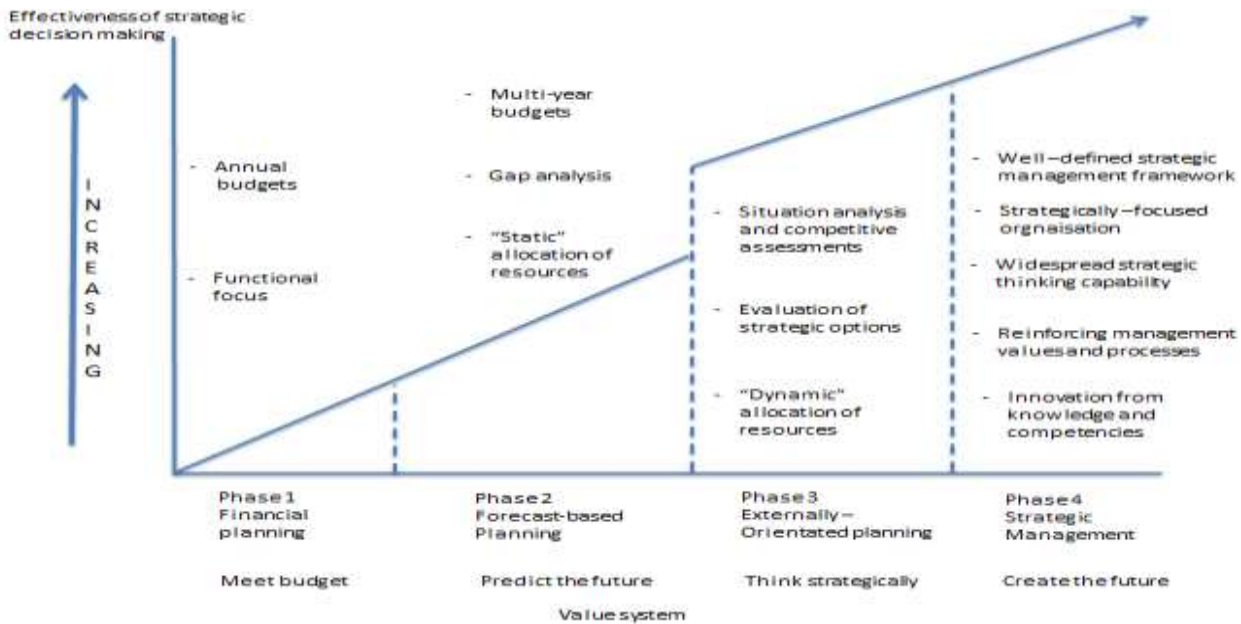
TASK	DESCRIPTION	COMPONENT
TASK 1	Formulating the business's mission, purpose, philosophy and goals	COMPONENT 1 PLANNING
TASK 2	Developing a business profile that reflects the internal conditions and capabilities	COMPONENT 1 PLANNING
TASK 3	Assessing the external environment, including the competitive and general contextual factors	COMPONENT 1 PLANNING
TASK 4	Analysing the business's options by matching its resources with the external environment	COMPONENT 1 PLANNING
TASK 5	Identifying the most desirable options by evaluating each option in terms of the business mission	COMPONENT 1 PLANNING
TASK 6	Selecting long-term objectives and grand strategies to achieve the most desirable options	COMPONENT 1 PLANNING
TASK 7	Developing annual objectives and short-term strategies compatible with long-term objectives and grand strategies	COMPONENT 1 PLANNING
TASK 8	Implementing strategic choices by means of budgeted resource allocations in which the matching of tasks, people, structures, technologies and reward systems are emphasised	COMPONENT 2 IMPLEMENTATION
TASK 9	Evaluating the success of the strategic process as input for future decision-making	COMPONENT 3 EVALUATION AND CONTROL

Source: Lourens (2010: 47)

Table 2.1 shows the three main components of the tasks performed in the strategic planning process. The three key components of strategic planning include planning, implementation, evaluation and control. Although the majority of tasks relate to the actual planning, tasks in the implementation component require the major effort. Tasks under the component of evaluation and control iteratively act as the interface between the planning and implementation.

Organisations are at different levels of maturity in strategic planning. The level of maturity in strategic planning varies from one organisation to another depending on capability and planning experience. Ward and Peppard (2002:66) developed a model for gauging the maturity of an organisation’s strategic planning for Information Systems that may be adapted for general strategic planning. This model is depicted in Figure 2.4.

Figure 2.4: Maturity phases in strategic planning



Source: Ward and Peppard (2002:66)

Figure 2.4 begins with a phase of planning for financial resources. Unfortunately, this results in a narrow functional focus. This phase resonates with Hayward’s (2008:13) observation that linking the strategic planning to the institutional budget is extremely daunting to universities in developing nations. The second phase introduces multi-year planning with elements of gap analysis to aid forecasting. The third phase ushers in strategic thinking as situational analysis and options are

considered. The ultimate phase leads to strategic management capable of creating the future. Organisations start to determine and influence their desired futures through planning.

Kaplan and Norton (2011:168-169) identify four processes which ensure that strategic objectives are linked to long-term goals. The four processes include translating the vision, communicating and linking, business planning, and feedback and learning. The four processes are linked by the Balanced Score Card (BSC), a strategy tool that helps to implement the vision by defining strategic objectives. This is illustrated in Figure 2.5.

Figure 2.5: Managing strategy: The four processes



Source: Kaplan and Norton (2011:173)

Figure 2.5 highlights the importance of continuous sharing of information in the iterative strategic planning process that undergoes a number of steps. Balanced Score Cards that are supported by reliable Business Intelligence (BI) ensure that informed choices are made throughout the strategic planning process from a holistic perspective. Figure 2.6 illustrates the four perspectives to which vision and strategy are translated as part of the Balanced Score Cards.

Figure 2.6: Translating vision and strategy: Four perspectives



Source: Kaplan and Norton (2011:172)

In a proposed Framework for Strategic Planning for Higher Education, four perspectives flow to steps. Tromp and Ruben (2010:3-4) state that the strategic plan is developed by using a blueprint with the seven steps shown in Figure 2.7.

Figure 2.7: Seven steps in creating and organising a strategic plan



Source: Tromp and Ruben (2010:4)

Figure 2.7 depicts the sequential processes associated with strategic planning. Once the vision and mission are established, the organisation identifies its stakeholders and collaborators, performs an environmental scan, states its goals and translates these into specific strategies and action plans. The plan is enabled by committed leadership, good communication and continuous monitoring to track outcomes and achievements. This process flow is corroborated in other studies. Kettunen (2010:16-18) concludes that the strategic plan is the outcome of a process that involves gathering, analysing and dissemination of information about the organisation and external environment.

The above discussion shows that strategic planning can be grouped into four main processes, each comprising a number of tasks. The four main processes can be summed up as setting the vision, business planning, provision of feedback and learning, and communication. The efficiency and sophistication with which the processes are carried out depends on the level of maturity in organisational planning. Focusing on Higher Education, Hayward and Ncayiyana (2003:43) have associated the following stages with the strategic planning process – preparation work for the strategic planning committee, compiling the strategy document, publicising the plan, getting approval, implementing the plan and finally, institutionalising the strategic planning process. Furthermore, the Balanced Score Cards (BSC) is a strategic tool supported by BI to assist organisations in translating vision into strategic objectives.

2.4 Factors that Influence Strategic Planning

A number of factors contribute to the success or failure of strategic planning. The strategy making and implementation processes do not happen in a vacuum. A number of internal and external factors have a bearing on the strategy process. Kaplan and Norton (2011:186) observe that the operating environment for most organisations is turbulent and therefore strategies need to be reviewed to check their validity.

Based on results of a study revealing that 75% of employees rate their organisations poorly in execution, Neilson, Martin and Powers (2011:143-144) observe that the problem with many organisations lies with poor execution of developed strategies due to unclear decision rights, poor information flows and numerous structural changes. Based on their research, Mankins and Steele (2011:210) conclude that some organisations have little to show for the great effort put into strategic planning as is evident from results of a survey which shows that only 63% of the planned financial performance is achieved by organisations.

Richards, O'Shea and Connolly (2004:346) observe that changes in the Higher Education landscape due to external influences have triggered a realisation that institutions need to use strategic and scenario-planning techniques to shape and re-think strategy in order to survive. Supporting literature also suggests that some organisations fail to realise their full potential as a result of poor forecasting. Mankins and Steele (2011:215-217) use the analogy of Venetian blinds to illustrate how organisations base their targets and benchmarks on previous years' performance figures, that are often understated or erroneous, resulting in year-to-year under-performance. Poorly formulated strategic plans, misapplied resources, breakdown in communications and limited accountability are cited as other contributing factors.

Availability and access to information is a key factor in the implementation of strategies. Rational decision making is dependent on the availability of information. In a recent study, only 61% of employees had access to information in an organisation that was considered strong, as opposed to 28% in an organisation that was considered to be weak (Neilson, Martin and Powers, 2011:153). This view is shared by Mankins and Steele (2011:217) who warn that without early warning signals, the management in organisations risk making wrong decisions. Although Donaldson and Schoemaker (2013:28) caution that there are multiple factors associated with an organisation's ability to spot early warning signals, performance reporting on strategic plans is important to provide early warning signs. To this end, Sevier (2003:18) asserts that strategic planning should be supported by a monitoring and evaluation system.

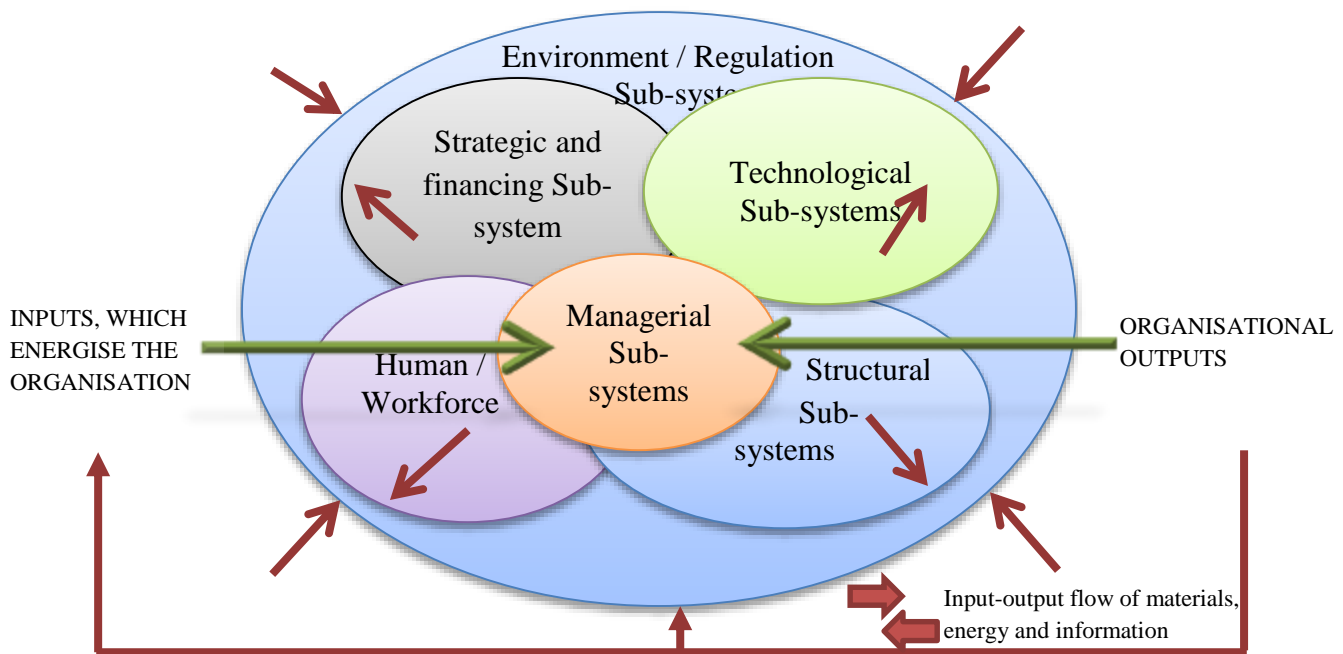
Communication is a key ingredient in strategy execution and is closely allied to availability and access to information. Grant (2010:199) underscores the importance of communication by describing the *strategic process* as the dialogue that ensures the communication of knowledge and ideas and builds commitment and consensus. Studies support the view that communication is critical in the efficient execution of strategy (Peng and Littlejohn, 2005:522). Communications should include all stakeholder groups. Cowburn (2005:103) argues that challenges associated with implementing strategic plans relate to both the formulation and execution of the plans.

Kaplan and Norton (2011:179) advise that communication breeds commitment and accountability. Adopting an organisational strategic principle – an actionable phrase that summarises the essence of the strategy and communicates it throughout the organisation is advised. Although strategies may change, an organisational principle remains the same (Gadiesh and Gilbert, 2011:196-199).

Monitoring and evaluation capacity in the Higher Education Sector is greatly enhanced by the presence of reliable management information and the practice of continuous review and monitoring of data (Hayward and Ncayiyana, 2003:43). Kettunen (2010:18-19) adds that the capacity of organisations to adjust with agility to changes in the environment is key in their survival. Signals from the environment must pass through three filters – surveillance filter, mentality filter and power filter. The surveillance filter limits information to that which is within the scope of the organisation; the mentality filter introduces the risk of short-sightedness while the power filter introduces the risk of information not flowing through organisational levels and strong cultures.

Strategic plans are formulated and implemented in a world of uncertainties and risks. Enterprise-wide risks or systemic risks result from close interdependencies among various internal and external variables. Donaldson and Schoemaker (2013:26-27) state that systemic risks cannot be mitigated by mere internal controls or ex-post legislation and therefore require individuals to have access to information that enables pro-active monitoring to detect early warning signs. Organisational systems and subsystems also play a role in strategy implementation processes. This interdependent sub--systems make the whole organisational system. Schiefer (2002:198) summarises the organisational subsystems as being: strategic, technological, human cultural, structural and management. Figure 2.8 below displays the organisational subsystems.

Figure 2.8: Organisational subsystems that affect strategic planning



Source: Schiefer (2002:198)

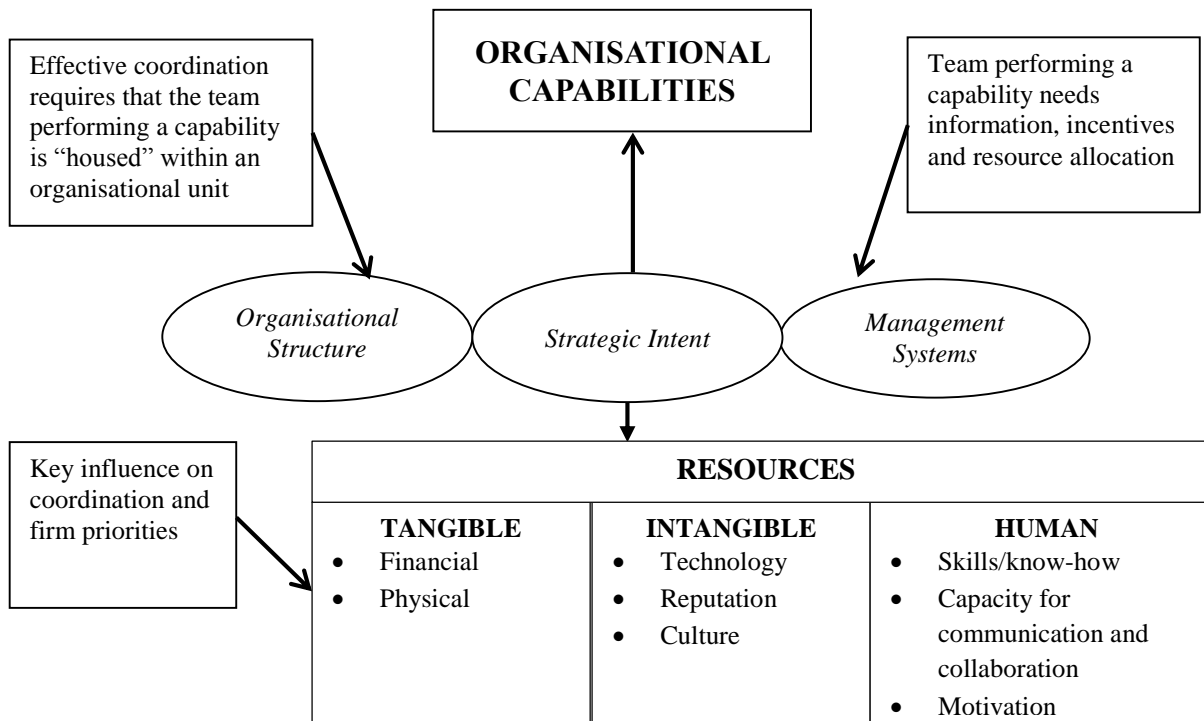
Figure 2.8 summarises the subsystems that contribute to achieving organisational outputs. The interplay between the subsystems has a bearing on the attainment of strategic goals. In addition to the regulatory climate in the operating environment, a combination of managerial, structural, technological, financing and workforce subsystems interact to translate inputs into organisational outputs. Resources and other organisational factors also influence organisational outputs.

Resources and organisational factors

Organisations – independent of human and other resources – have their own capabilities. Afuah (2009:118-120) defines capabilities as: the organisation's ability to convert its resources to benefits and states that creating and appropriating value from strategies requires resources and capabilities. An organisation's capability is influenced by three main factors – its resources, its processes and its values. Whereas processes are patterns of interaction, coordination, communication and decision making that employees use to translate resources into value-adding products and services, values relate to the standards by which priorities of what gets done are made (Christensen and Overdorf, 2011:2-5). Processes and values relate to organisational factors.

Resources are important factors in the success or failure of any strategy. Without adequate resources, strategic plans are unlikely to yield results. Strategies require resources to design and implement and monitor. Organisational resources can be classified into four broad categories – human, financial, physical and intangible (David, 2007:65; Christensen and Overdorf, 2011:2). Grant's (2010) model of resources and organisational capabilities shown in Figure 2.9 describes these categories.

Figure 2.9: Integrating resources to create organisational capabilities



Source: Grant (2010:155)

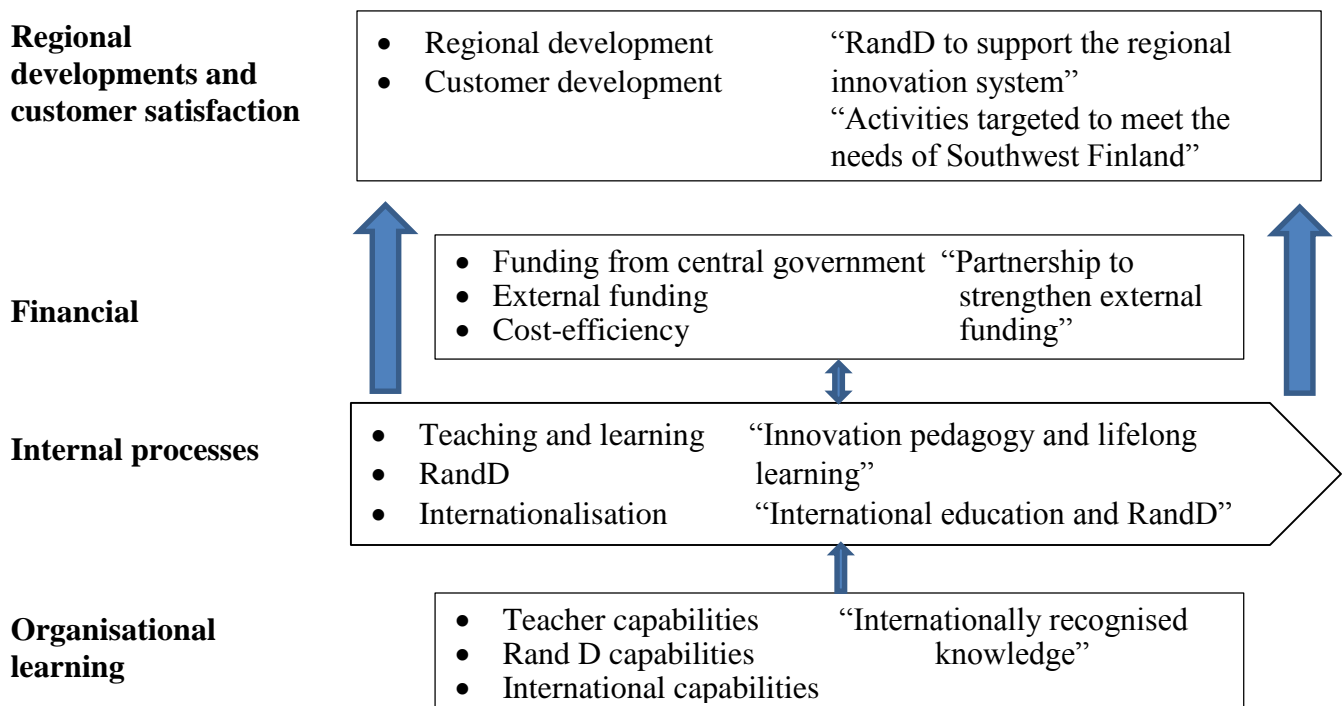
Figure 2.9 indicates that the three categories of resources at the disposal of organisations can be used to enhance organisational capabilities. The key enablers are strategic intent, organisational structure and management systems. Careful planning for both human and financial resources is key in the strategy process, because resources are limited.

Harvey (2004:104) places the responsibility of ensuring that there is adequate resourcing of functionaries that execute strategy on the management team. Staff required to implement strategic plans should be involved in the strategy process. Rapert, Lynch and Suter (2006:209) strongly recommend the inclusion of staff in organisational decision making processes. Olson, Slater and Hult (2005:87) hold a contrary view and instead propose that top management should be responsible for decision making. This view is shared by Watson (1995:190) who states that although the strategic planning process is a platform for change and improvement, strategic planning, like a map, points to the destination but does not provide the vehicle. Therefore, for the change contained in a strategic plan to succeed, consensus must first be built at the level of execution. The choice of employee involvement and consultation is a management prerogative that should be exercised with wisdom and tact. The level and extent of staff involvement would differ depending on the nature of the organisation.

Capron and Mitchel (2010:107) underscore the importance of resources for strategy implementation and advise that resources can either be insourced or outsourced by organisations. Johnston, Abader, Brey and Stander (2009:37-39) conclude that cost is the most influential factor in determining how to acquire resources. Organisations often outsource with the objectives to access best practices; get exposure to additional skills; improve staffing flexibility; cost control; concern about the core business; in-house expertise; risk management and other legal factors. Insourcing is recommended for creating a pool of employees with a sense of belonging and responsibility who take pride in achieving organisational goals.

Organisations allocate financial resources to priorities during the budgeting process (Salmi and Hauptman, 2006:221). The management of financial resources as part of the strategy process should entail aligning budgets with strategic priorities. The financial model should provide the necessary agility and flexibility to respond to changes in strategy. Kaplan and Norton (2011:183) warn that the misalignment of financial planning, budget allocation and strategy can be a recipe for failure to achieve strategies. The authors advocate the use of the Balanced Score Card as a BI tool whose benefits include helping to align business processes and redirecting an organisation into implementing long-term strategies. Figure 2.10 illustrates the key sections of the Balanced Score Card for a Higher Education Institution.

Figure 2.10: Strategy map for the Turku University of Applied Sciences



Source: Kettunen (2010:25).

Although there are limited, published reports on the successful application of the Balanced Score Card in Higher Education, Beard (2009:275) points to the potential by underscoring the view that financial results alone are insufficient to capture value-creating activities. However, Porter (2011b:2) cautions organisations, while developing from getting side-tracked by numerous management tools and techniques in attempts to increase productivity, quality and speed.

Tangible resources ensure that the operations of an organisation are enabled – an important element of strategy execution. Physical resources, also referred to as infrastructure, should be safe, healthy and encourage performance (Kaplan and Norton, 2008:65-69). According to David (2007:69), marketing, facilities, production and Information and Communications Technologies (ICTs) constitute the physical resources. Infrastructure is key in supporting organisational strategy. The right mix of infrastructure for strategy development should be in place. It is often taken for granted that the available infrastructure is adequate and appropriate for supporting organisational strategy. Infrastructure is closely aligned to financial resources as it comes at a high cost. Higher Education involves classrooms, seminar rooms, sports fields, residences, common rooms, laboratories, technology and other facilities. It stands to reason, therefore, that Higher Education Institutions should develop plans for infrastructure aligned to strategic plans. Intangible resources include aspects such as goodwill, intellectual property and the brand name. Higher Education Institutions exist to create and disseminate knowledge and therefore intangible resources remain critical in the strategy execution processes.

Leadership is one critical factor that influences the implementation of strategies. Organisational turbulence can also result from internal sources. The role of leadership comes into the spotlight. Poor leadership hampers good communications and undermines the quality of monitoring and assessment of strategic outcomes (Tromp and Ruben, 2010:3-4). Daniell (2006:37) suggests that a change in leadership introduces turbulence and affects the implementation of existing strategies. Kettunen (2010:17) points out that strategic dialogue and participation that should be mediated by the leadership are more important than the strategy document.

Leadership shapes and communicates the vision for the organisation as indicated by Pearce and Robinson (2003:201) who opine that effective implementation of strategy is a function of the role played by the leadership. Studies have shown the important role that a strong leader plays in defining a vision for an organisation (Mintzberg and Quinn, 2005:188). Studies also show that strategic goals are

better achieved whenever an organisation's leadership support and commit to the transformation agenda (Kotter, 2011:138).

In Higher Education, Hayward (2008:11-13) states that the participation and support of the University leadership is critical in steering the strategic planning process. Institutions that recognise the diversity of their campus communities achieve better results in strategic planning. A participatory strategic planning process ensures broad input, mobilises support and gives the plan legitimacy. The traditional top-down approach to planning and decision making was not working and therefore stakeholder involvement had to be introduced in democratic South Africa.

The role played by leadership and management in setting the tone on aspects in the life of an organisation such as communication, culture, team dynamics, commitment and excellence cannot be overemphasised. The interplay of a complex array of intra-organisational systems and subsystems sets the tone of the culture in an organisation and consequently influences the degree of attainment of organisational goals. The culture of an organisation can influence the efficacy of strategy implementation. Lasher and Sullivan (2004:60) argue that a positive organisational culture can rally the energies of employees towards strategy attainment. Wheelen and Hunger (2004:321) warn of failure in strategy implementation if the goals of the strategy and the prevailing organisational culture are not congruent. Grant (2010:9-11) summarises the factors needed for success in strategic planning as follows:

- Use of goals that are consistent and long-term;
- A profound understanding of the operating environment and an objective appraisal of available resources by strategic planners; and
- Effective implementation systems and processes.

Both internal and external factors have a bearing on strategic planning in organisations. In strategic planning for Higher Education, there is a mutual relationship between external and internal environments. These factors have to be borne in mind when embarking on strategic planning. A combination of resources (human, financial, tangible and intangible) and systems and subsystems in an organisation contribute to efficacy of strategic planning. Stakeholder involvement and consensus are key in the attainment of strategic planning goals – especially in Higher Education with a multiplicity of stakeholders.

The foregoing discussion firstly points to the need to align strategies with the expectations of the internal and external environments. Secondly, financial, human, tangible and intangible resources should be mobilised to back the strategies. Thirdly, execution of the strategies requires strong leadership, effective communication and synergy amongst organisational subsystems. Finally, there is need for monitoring the strategy execution process.

The list of factors that influence strategic planning discussed in this section are summarised as follows:

- The extent to which strategic plans are comprehensive;
- Alignment of strategic planning with processes for resource allocation;
- Appropriate choice of planning horizon;
- Stakeholder consultation and information sharing;
- Reporting standards and mechanisms for monitoring and evaluation of performance;
- The role of leadership in giving direction and promoting buy-in;
- Alignment of strategy development and implementation; and
- Availability and access to information and the dominant information culture of an organisation.

2.5 Strategic Planning in Higher Education

As early as 30 years ago, Kotler and Murphy (1981:470) admonished: “If colleges and universities are to survive in the troubled years ahead, a strong emphasis on planning is essential”. Learner (1999) states that universities embark on planning for various reasons including shrinking funding, growing demand for Higher Education and changing student demographics. According to a recent Ernst and Young Report (2012:6) the five megatrends poised to transform Higher Education include competition for funding and markets, global mobility, democratisation of knowledge and access to digital technologies as well as integration with industry. Strategic planning is becoming indispensable to organisations that wish to survive in increasingly competitive environments.

A number of challenges face strategic planning in universities. Organisations derive maximum value from strategic planning whenever the plans crafted are implemented. Cowburn (2005:103) laments the trend by which public sector organisations – including universities – formulate excellent plans but fall short at the implementation stage. The problem, she argues, can be traced to content as well as structures and management of Higher Education Institutions. For example, content is grossly undermined whenever objectives are not measurable. This problem is compounded whenever there are

incoherent approaches to planning coupled with poor communication within the structures of management. Choban, Choban and Choban (2008:13) advise against strategic planning without clearly defined outcomes in Higher Education. They warn against the continued dominance of process variables instead of student learning and the impact on community-level variables as criteria for evaluating the success of strategic plans.

Strategic planning processes should be customised for Higher Education. Learner (1999) has cited the following ways in which strategic planning in Higher Education differs from strategic planning in the private sector:

- Strategic plans of universities tend to have longer timeframes than those in the private sector;
- Universities tend to adopt more consultative and democratic approaches to strategic planning;
- Unlike business that looks at the bottom line, university strategic plans lean on egalitarianism; and
- Universities do not have clearly defined customers and as a result, they experience difficulties defining goals and finding appropriate performance measurement mechanisms.

Based on lessons learned from strategic planning in developing countries, Hayward (2008:8) warns that due to resource constraints and existing poor planning traditions at institutional and system levels, strategic planning poses manifold challenges in developing countries. Dooris, Kelley and Trainer (2002:9) caution that the design required to assess the efficacy of strategic planning in universities is a daunting task that does not lend itself to controlled studies because of its dynamic nature. Balderston (1995:4) observes that Higher Education Institutions tend to measure activity and size more efficiently than they do results. The key activities of universities include teaching and learning and research. These need to be measured through reliable performance indicators for teaching and research. Table 2.2 contains sample performance indicators.

Table 2.2: Performance indicators for teaching and research

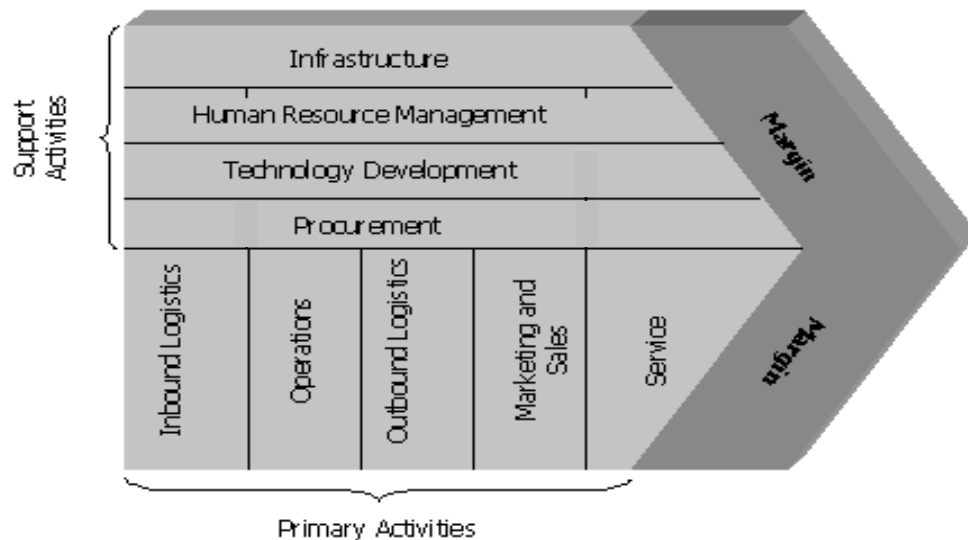
Performance Indicator	Evaluation criteria
Teaching and learning	<ul style="list-style-type: none"> • Student admission • Marks • Access requirements • Choice of degree
Research	<ul style="list-style-type: none"> • Funds for research • Number and qualification of researchers • Number of doctoral students

Source: Sarrico, Rosa, Teixeira and Cardoso (2010)

Higher Education Institutions undergo quality assurance in one form or the other. Birnbaum (2000:198) advises institutions to measure that which is valuable, lest they value that which is measurable. Birnbaum (2000) warns of the dangers of neglecting that which cannot be easily measured. Deming (1986) cautions administrators against focusing only on productivity indicators as productivity does not necessarily lead to improvement. Hamaker (2003:4) concludes that with clear strategy, strong communications, independent review and continuous improvement, the measurement of performance becomes easier.

The business model of any organisation, its value chain, outlines the interaction of various tasks and processes that work together towards meeting the organisation’s objectives. In some cases, the value chain is easily discernable and/or is explicitly stated while in others, as is the case with Higher Education, the value chain is not as obvious. Generic value chain models have three main ingredients – inputs, processing and resultant outputs. These are grouped into primary activities and support activities as illustrated in Porter’s (1985) value chain model in Figure 2.11.

Figure 2.11: Value chain model



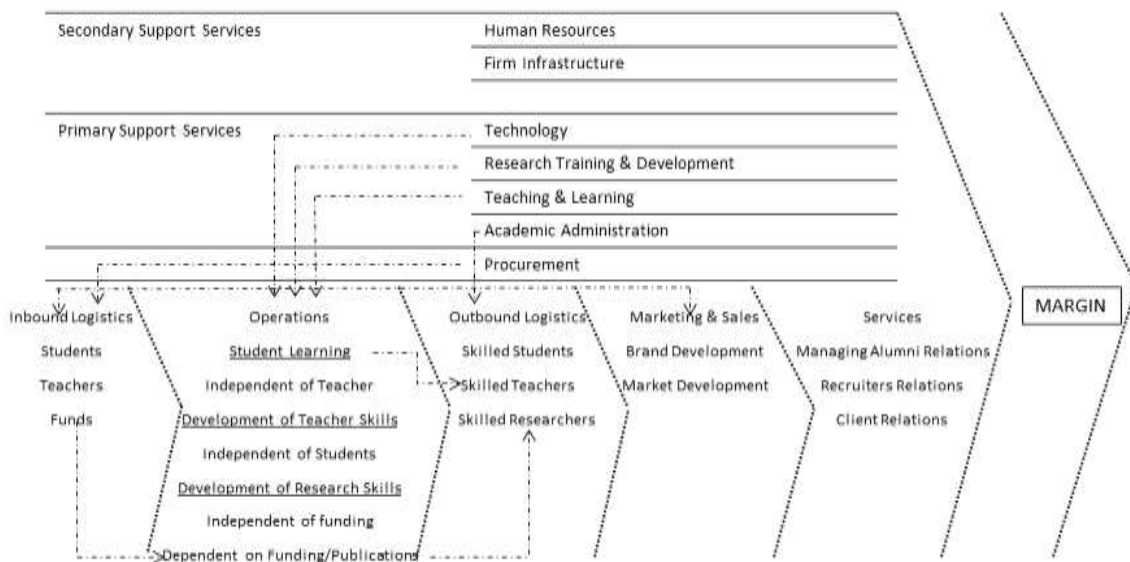
Source: Adapted from Porter (1985:37)

The value chain concept plays a vital role in understanding organisational competitiveness. In addition, Rathee and Rajain (2013:1-2) state that although the value chain was conceptualised within the context of manufacturing, it could be customised for the Higher Education Sector which is currently faced with pressure to provide value to its customers and stakeholders. Maasen and Cloete (2002:26-27) point out

that Higher Education Institutions differ very slightly from other organisations since they exhibit low internal integration and lack a single clearly definable production function.

The activities carried out in Higher Education can be grouped in two core (primary) activities and support (secondary) activities. Figures 2.12, 2.13 and 2.14 depict examples of Higher Education value chains. Figure 2.12 demonstrates that the activities in Higher Education are structured with strong internal linkages between them. Figure 2.13 highlights teaching and research as the main activities while Figure 2.14 shows how course development and course presentation are intertwined in a Value Chain.

Figure 2.12: Higher Education value chain



Source: Pathak and Pathak (2010:170)

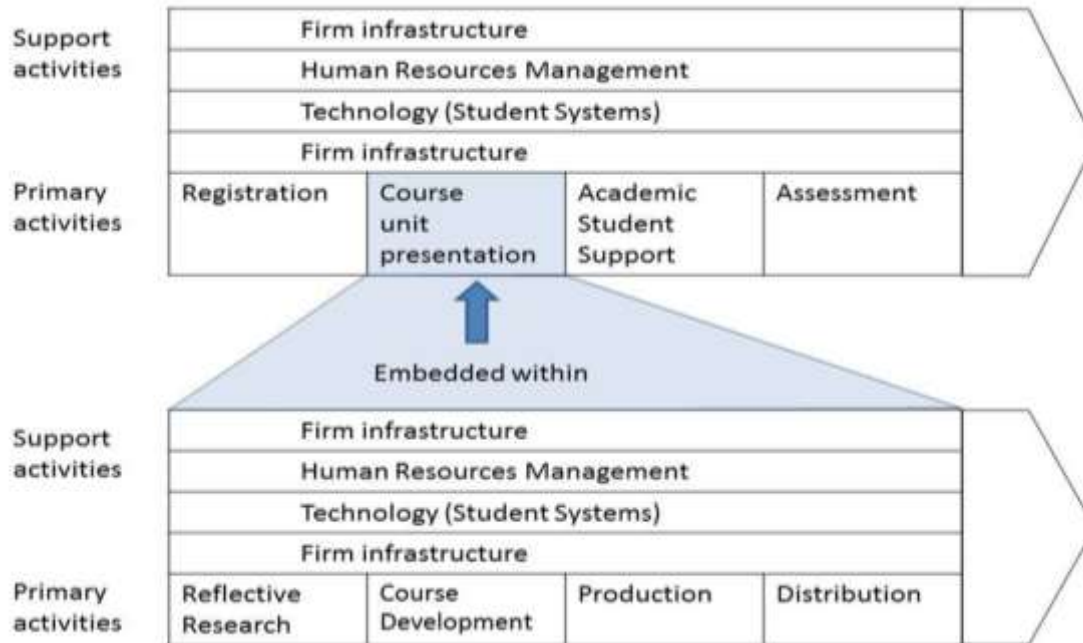
Figure 2.13 illustrates Hutaibat’s (2011:218) Value Chain for Higher Education.

Figure 2.13: Value chain for Higher Education



Source: Hutaibat (2011: 218)

Figure 2.14: Education value chain in course development



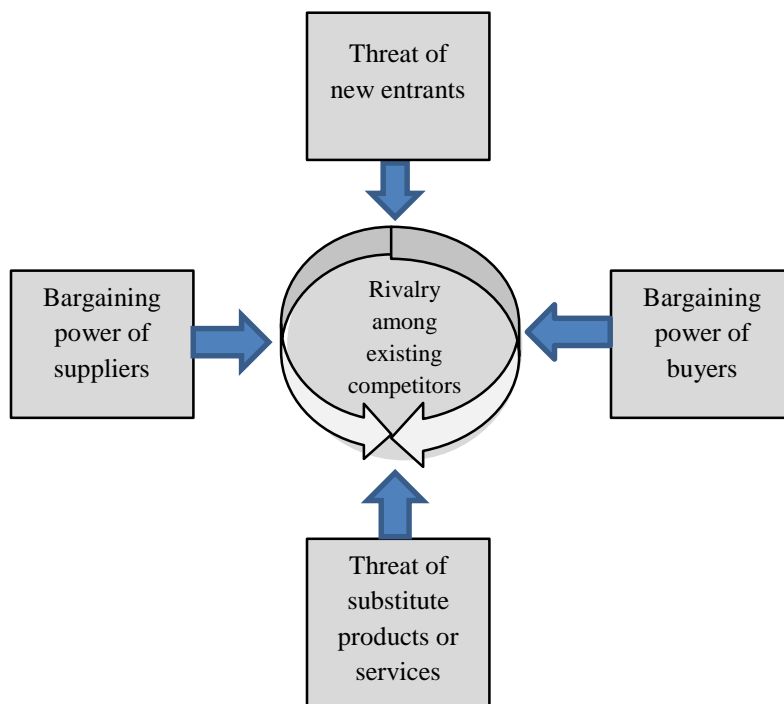
Source: Van Der Merwe and Cronje (2004:127)

Figures 2.12, 2.13 and 2.14 show three examples of Porter’s value chain adapted for Higher Education. The distinction between and complementary nature of primary activities and support activities is emphasised. Teaching, learning and research remain at the core of the Higher Education value chain. Support activities such as infrastructure, technology and human resources serve to reinforce the core activities.

Value activities in Higher Education manifest themselves differently. Clark (1983:16) observes that “the factory floor in Higher Education is cluttered with bundles of knowledge that are attended by professionals. The professionals push and pull in their respective bundles. If they are doing research, they are trying to increase the size of the bundle and even reconstruct it. If engaged in scholarship other than research, they are conserving, criticising and reworking it. If teaching, they are trying to pass some of it to the flow-through clientele called students. It is argued that Higher Education Institutions, being a meeting point for knowledge-bearing groups, requires little operational linkages”.

The five factors that contribute to competitiveness include: bargaining power of suppliers and buyers, threats from new entrants and products or services shown in Figure 2.15.

Figure 2.15: The five forces that determine industry competition



Source: Porter (2011a:46)

Figure 2.15 shows the five forces that determine competition – threat of substitute products, bargaining power of suppliers, bargaining power of buyers, existing completion among current players and threat of new entrants. These factors are customised with examples in Higher Education in Table 2.3.

Table 2.3: Factors in public Higher Education competitive environment

Factor	Example
Threat of new entrants	Private Higher Education Institutions
Threat of substitute products	Changing modes of delivery from ‘chalk and talk’ to technology-enabled and blended learning
Bargaining power of suppliers	Role and influence of the various stakeholders
Bargaining power of buyers	Relevance of courses offered in Higher Education and choices available to learners
Rivalry among existing competitors	Competition for top students and academic staff Inter-institutional collaboration and cooperation and competition

Source: Author’s own construct

The *raison d’etre* of Higher Education is confirmed by a statement by Michael, (2005a:18) that “universities are in the business of ‘disciplines’ and intellectual activities – activities that entail dedication, long-suffering, commitment and devotion to knowledge that is authentic, enduring and true”. Kirp (2003:4) observes that academic institutions are fast adopting the language and ways of business in a bid to remain competitive and attract required revenue. This business-type thinking is evident, for example, in the description of academic departments as ‘revenue centres’. Some institutions have adopted business practices such as strategic planning and Total Quality Management (Ozdem, 2011:1888).

Whereas public Higher Education has for a long time been viewed as intended for ‘the public good’, neoliberal thinking agitates for less government involvement in the sector. As a result, Higher Education has become a more competitive enterprise in the 21st century and opportunities to remain competitive come in forms such as partnerships with industry and academic institutions locally and internationally (Altbach, Reisberg and Rumbley, 2009:12-14). Birnbaum (2000:216) observes that Higher Education and corporate business both show similarities and differences. The key distinction is that whereas business is reactive, Higher Education is reflective. However, Thomas (1996:36) notes that Higher Education Institutions need the capacity and agility to quickly respond to changes in the

internal and external environments. Slaughter and Rhoades (2004:11) state that universities are becoming profit-oriented and are beginning to pursue commercial ventures that guarantee income. Academic capitalism is finding its way into the academy, they argue. This business-type orientation is advocated by those who believe that this is the only way institutions can survive in the 21st century (Kirp, 2003:1).

Kretovics (2011:x) poses the dilemma faced by Higher Education with regard to adopting corporate business practices – some critics bemoan the corporatisation of Higher Education while others wonder why universities cannot operate as businesses do. Barret (2010:26) observes that universities are introducing business-like approaches in their operations. This view is supported by the prediction that the ranking of universities and the evidence of competition will continue to grow in Higher Education (Michael, 2005b:23). However, Priest and Boon (2006:175) warn of the negative consequence of university ranking such as marginalising students from low-income backgrounds. Citing a recent investigation in England, King (2009:137) echoes the same sentiment with the observation that the use of rankings militates against government policies aimed at increasing the participation of students with potential capability but with less of a family or school tradition of university entrance.

Hall, Symes and Luescher (2002:17) observe that some universities have introduced performance-based incentives in line with neo-liberal managerial models. There is a shift towards running Higher Education as business entities particularly as institutions respond to challenges posed by growing competition. Gumport (2000:67-91) underscores this point by highlighting two prominent perspectives on Higher Education; the social institution perspective and the industry perspective. The former sees the Higher Education mandate as that of carrying out important functions in the public interest while the latter argues that Higher Education Institutions sell goods and services, train the workforce and hence foster economic growth. This latter perspective agrees with the neo-liberal viewpoint in which Higher Education is conceptualised as a business-like corporation. This paradigm shift has prompted the shift towards running Higher Education as business entities particularly as institutions respond to challenges posed by growing competition.

As a result, public Higher Education Institutions now compete with each other and with the private sector. Commenting on South African Higher Education, Bawa (2002:10) alludes to an existential crisis faced by this sector. The global academic metropole, from where the South African Higher Education draws lessons, is faced with the new impact of globalisation on Higher Education.

Kretovics (2011: 15) observes that the breakdown of geo-political boundaries has led to an increase in the number of international students. In Europe, for example, the European Union, through the Bologna process, made it easier for students to study anywhere in the participating countries. Internationalisation of Higher Education and increased institutional competition will require careful calibration of management in Higher Education. This calls for selectively embracing lessons from the corporate sector that could help Higher Education remain sustainable in the changed environment.

Higgs (2002:77) adds that “there is a crisis of confidence in the role that universities should play in society. The ongoing process of transforming universities testifies to the enduring seriousness of the questions of meaning and purpose that the academy faces”. Higgs (2002) also refutes the view that confines the role of a HEI to social transformation while neglecting the objective of serving the needs of the state and the economy. Education can be seen both as a product and a service. Boyd (2000:11) defines a product as “anything that satisfies a want or need in terms of use, consumption or acquisition”. A service, on the other hand, is defined as “any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product” (Kotler, 2000:428-429). Boyd’s (2000:5-6) perspective depicts education as a contract service in which “services are first sold then simultaneously produced and consumed”. Students are key stakeholders in the Higher Education system. The role given to students ranges from students being viewed as customers, products and partial employees. The paradigm that views students as products has its roots in business manufacturing. The Higher Education system is viewed as the assembly line to which raw materials from the secondary education system are placed, trained and processed into a final product – the graduate. On the contrary, Measelle and Egol (1992:39-42) argue that the student contributes in the creation of knowledge and therefore should not be viewed purely as a product but as partial employees.

Others view the student as a customer. Proponents of this view such as Comm and LaBay (1996:30) highlight the importance of knowing the needs of students in a bid to increase satisfaction rates in Higher Education. Scrabec (2000:298) rejects this view by arguing that unlike typical customers, students do not have a say in all aspects of teaching and learning. The role of the student in Higher Education is complex and requires a nuanced rather than monolithic answer. Regardless of the view that is taken, the important role played by students in Higher Education needs to feature prominently on the agenda of any institution.

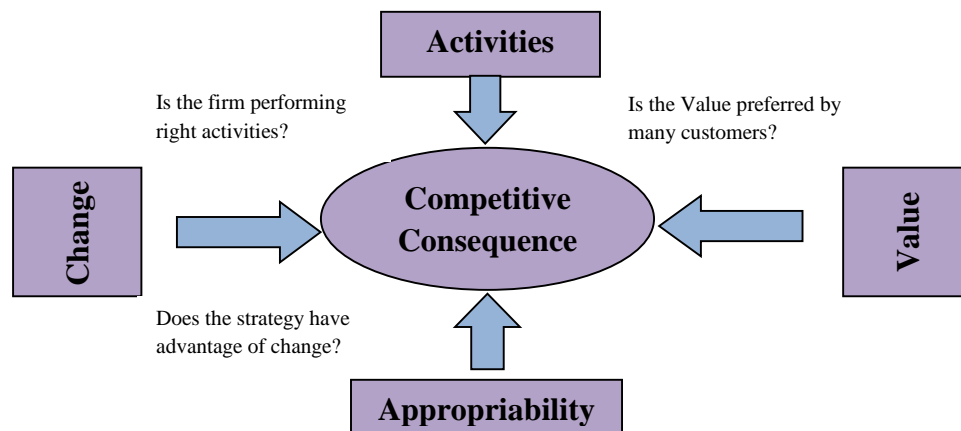
The following factors in strategic planning have emerged from the above discussion:

- Institutions of Higher Education are operating in a turbulent and competitive environment;
- Strategic planning is indispensable for survival in the Higher Education Sector;
- The needs of multiple stakeholders – especially students - should be understood and catered for during strategic planning;
- Universities experience difficulties defining goals and finding appropriate performance measures;
- Business management approaches and nomenclature such as performance monitoring are finding their way into the academy; and
- Higher Education Institutions need to identify their core (primary) and support (enabling) activities.

2.6 Benefits of Strategic Planning in Higher Education

Organisations can derive value from effective strategic planning. Afuah (2009:4) is a proponent of new game strategies which he defines as “a set of activities that create and/or appropriate value in new ways”. When a new game strategy is pursued by an organisation, Afuah (2009) adds, the extent to which advantage can accrue to an organisation is a function of its activities, the value created and how much it takes advantage of change. Based on the Pareto principle which states that 80% of the value is created by 20% of activities, Afuah (2009:78) argues that technology and innovation can increase the value created by the remaining 80% of the activities. He therefore proposes the use of *Activities, Value, Appropriability and Change* (AVAC) as a model for analysing and estimating the likelihood of an organisation deriving value from its strategy. AVAC analysis, he adds, is useful for organisations which wish to identify and rank strategies (Afuah, 2009:18). Components of the AVAC analysis are shown in Figure 2.16.

Figure 2.16: Components of AVAC analysis



Source: Afuah (2009:39)

Figure 2.16 contains dimensions of strategic planning deemed necessary for attainment of competitive advantage. The choice of activities that an organisation pursues should be informed by the value added to the stakeholders and the change it brings and the ease of appropriating the created value. The array of activities and tasks contained in organisational strategic plans should be tested on AVAC dimensions – the activities pursued, their value and readiness to be appropriated and the change they promise. Similarly, Alfred (2006:6) states that in developing strategic plans, university administrators should know the stakeholders and what value can be created for the stakeholders. Institutions should identify what differentiates them and gives sustainable advantage.

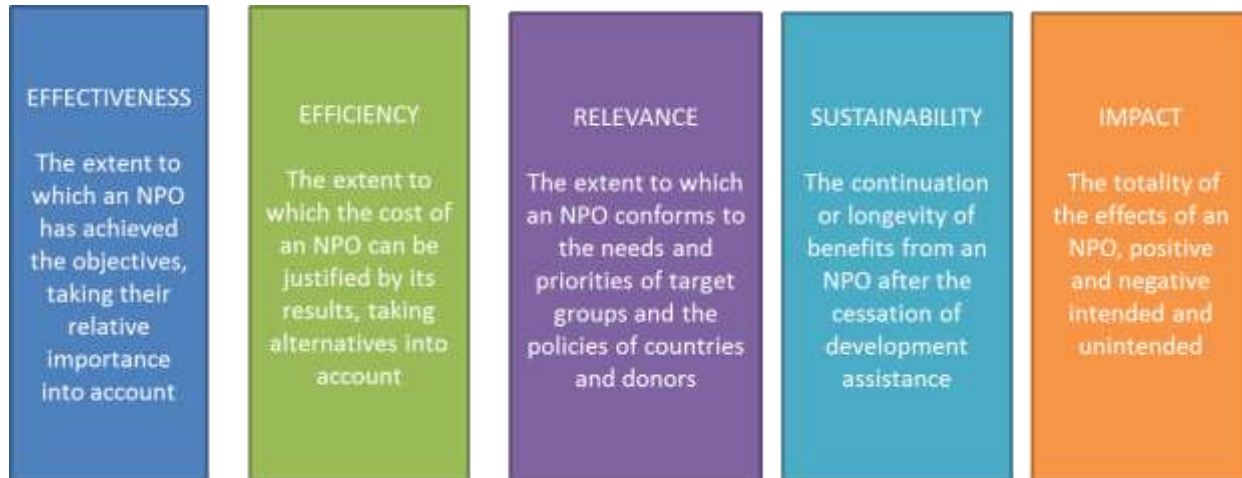
Mashhadi, Mohajeri and Nayeri (2008:338) advance the case for strategic planning in Higher Education by stating that “strategic planning gives a holistic and shared understanding of how it adapts to educational policy, environment and develops its activities to a desired future”. Porter (2011b:21-25) concurs and observes that one important element of strategy is how an organisation’s activities fit and reinforce one another. Disparate functions impact on and affect one another and fit ensures that effort is optimised through coordination and information exchange across activities.

Dooris, Kelley and Trainer (2002) state that strategic planning in Higher Education is a learning and creative exercise that should be marked by dynamism, flexibility, nimbleness and imagination. They add that planning is all about bettering the human condition and in Higher Education, this can be achieved by hiring better staff, recruiting better students, upgrading facilities, strengthening academic programmes, improving services to students and overall resourcing of the institutions to meet strategic objectives. Steyn and Wolhuter (2010: 458) state that universities have a critical role to play in creating sustainable communities and as such should therefore be actively engaged in the communities they serve. Kaufman (2008: 9-11) proposes that the results and impacts that organisations make on society should be measured. Crafting an ideal vision rooted in ethical considerations of the desired future of the organisation, should be used as a guide.

Hayward (2008: 16-19) states that strategic planning in Higher Education creates a culture of negotiation; helps deal with uncertainty; creates a culture of planning; supports in making a case for resources; fosters integration and institutional legitimacy; builds identity within the institution; builds democracy; mobilises support; improves university governance; fosters high quality and competitiveness; institutionalises the strategic planning process and helps institutions to respond to their changing environments.

In the final analysis, success or lack thereof in strategic planning depends on the degree to which objectives and goals have been met. Bussin (2013: 15) offers evaluation criteria that Non-profit Organisations (NPOs) may use in their assessment. The criteria include effectiveness, efficiency, relevance, sustainability and impact. This is shown in Figure 2.17.

Figure 2.17: Evaluation criteria used in non-profit organisations



Source: Bussin (2013:15)

Higher Education is witnessing changes and institutions are operating in a competitive environment. The benefits of strategic planning make a compelling case for its adoption. Necessarily, South African public Higher Education Institutionsought to embrace strategic planning practices.

The benefits that can be associated with strategic planning can be summarised as:

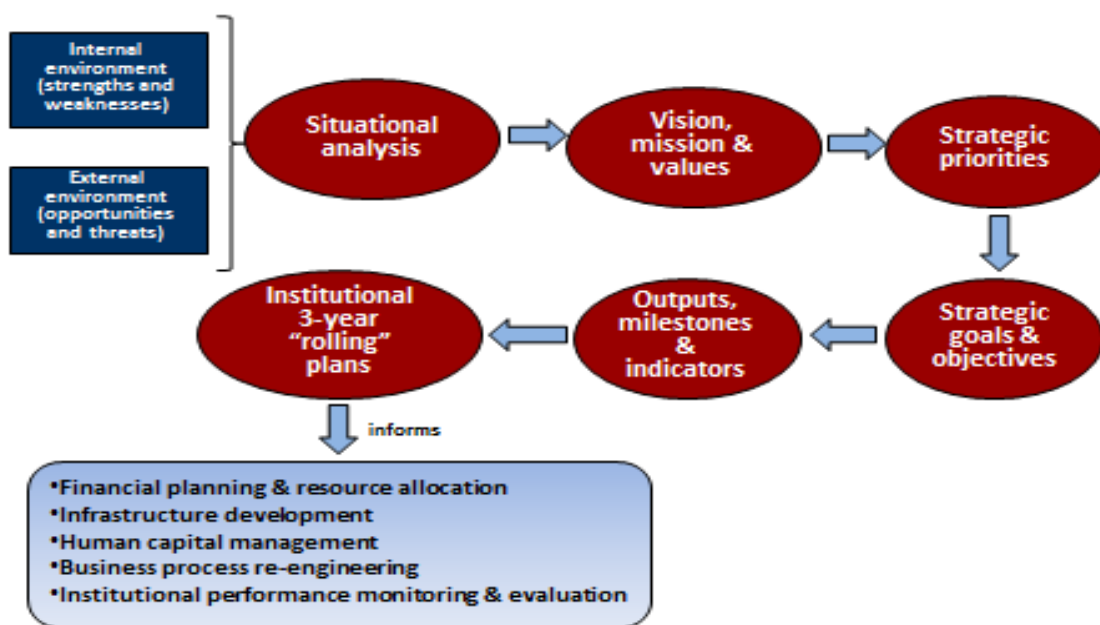
- Providing a good platform for institutions to respond to uncertainties and constant changes in the Higher Education landscape;
- Promoting innovation and value addition;
- Improving performance and enables the attainment of set goals;
- Informing policy choices and resource allocation; and
- Ensuring that institutions remain sustainable.

2.7 Overview of Strategic Planning at the Nelson Mandela Metropolitan University (NMMU)

The Nelson Mandela Metropolitan University (NMMU) is one of 23 Higher Education Institutions in South Africa. NMMU has developed a ten-year strategic plan for the period 2010-2020. This strategy plan is also referred to as Vision 2020.

The process leading to the development of Vision 2020 was characterised by situational analysis, setting of the vision, mission and values, setting of the university's strategic priorities, setting strategic goals and objectives, setting key milestones and performance indicators and identifying other plans that the university needed to develop in order to complete the strategic planning process. This is depicted in the Figure 2.18.

Figure 2.18: The strategic planning process at the NMMU

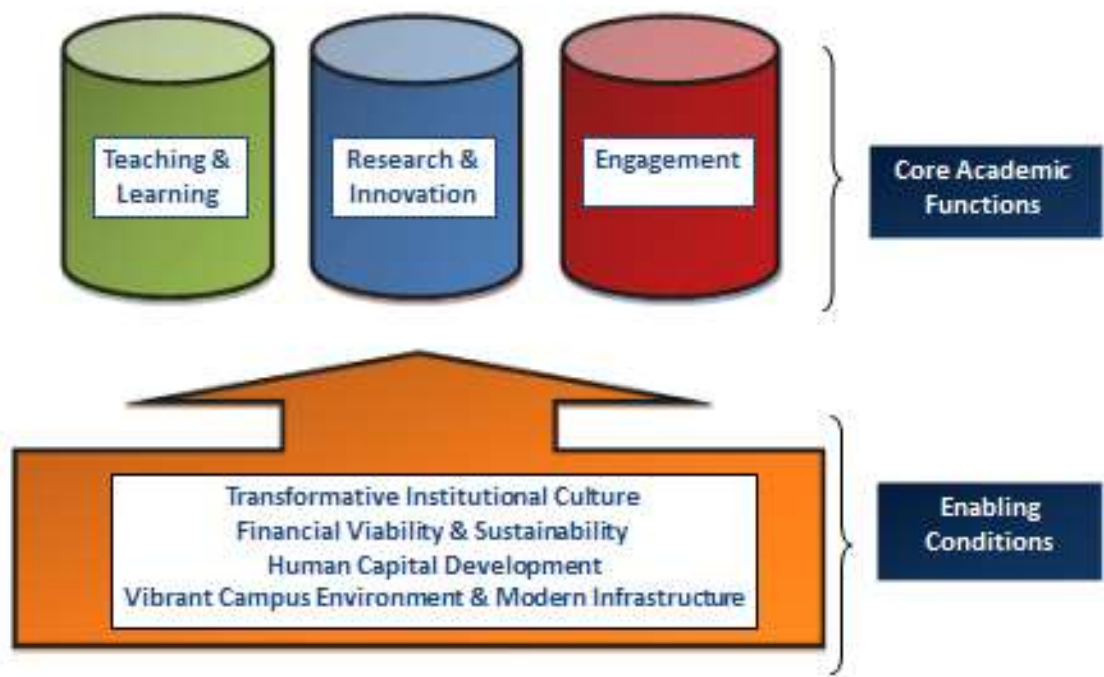


Source: NMMU Vision 2020

The strategic planning process at the NMMU required analysis of the internal and external environments. This led to the formulation of the university's vision and mission. These were translated into strategic priorities and further broken down into strategic goals and objectives. Outputs and outcomes are attached to each strategic goal and objective. Faculties and Departments are expected to develop three-year rolling plans aligned to Vision 2020.

Vision 2020 was summarised into the following key priorities as depicted in the Figure 2.19.

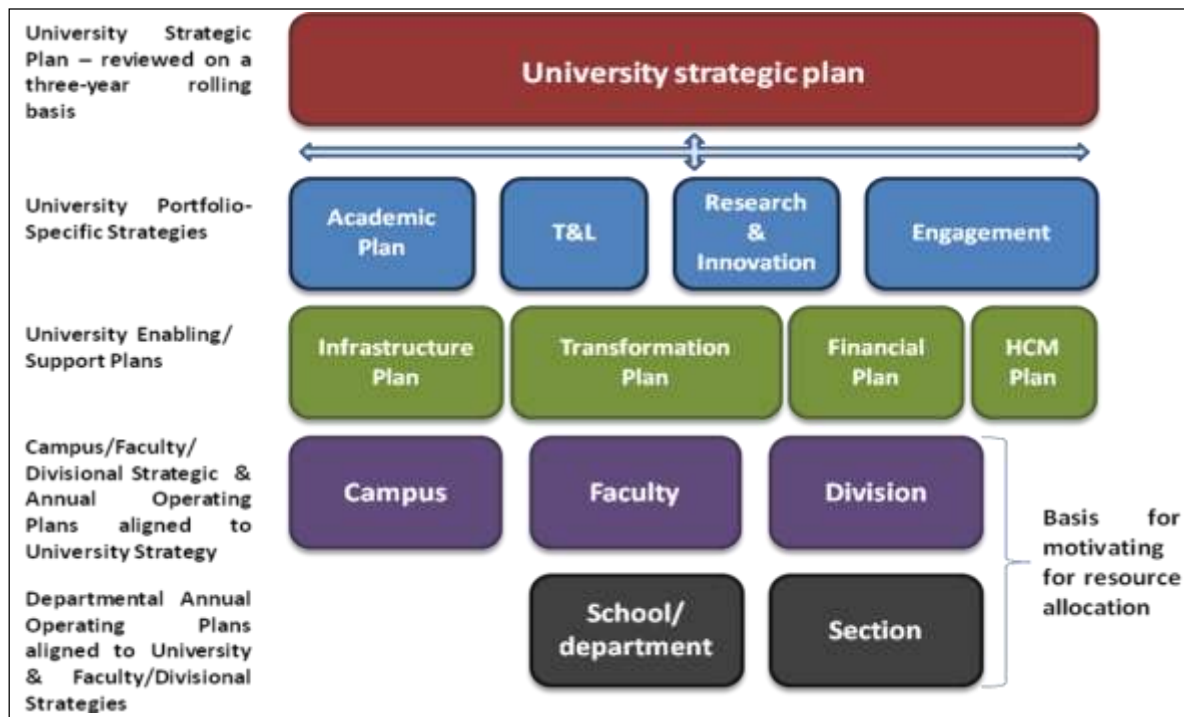
Figure 2.19: Vision 2020 strategic priorities



Source: NMMU Vision 2020

The NMMU clearly identified its core activities (teaching and learning, research and innovation and engagement). In addition, the university defined the key enabling conditions in support of its core activities. A transformative institutional culture, financial viability and sustainability, human capital development and creation of a vibrant campus environment supported by modern infrastructure were identified. Vision 2020 is an overarching plan which alludes to the need for the development of other institutional plans to complete it. These include the infrastructure plan, financial plan, ICT plan and human capital plan. This is shown in Figure 2.20.

Figure 2.20: NMMU’s strategic planning framework



Source: NMMU Vision 2020

Vision 2020 highlights the importance of interdependency in the strategic planning process. The alignment between the various plans is an important ingredient in the strategic planning process. Sustainability reporting, especially at institutional level, largely depends on the completeness and accuracy of information that is fed from enabling plans and lower level plans. However, the NMMU processes do not explicitly make reference to the need for a communication plan, accentuating risks associated with incoherence in planning and execution.

The salient factors that have influenced NMMU’s strategic planning landscape include:

- A clearly mapped strategic planning process roadmap;
- A situational analysis to understand the internal and external operating environment;
- A clear distinction between core and support activities;
- Identification of enabling conditions in pursuance of core activities;
- Alignment of plans and strategies at strategic, tactical and operational levels;
- Annual operating plans aligned to institutional long-term strategies intended to guide resource allocation; and

- Refinement to strategic priorities into goals and measurable outputs and outcomes.

2.8 Conclusion

The literature surveyed in this chapter underscores the importance of strategic planning. Organisations that undertake strategic planning do so in order to survive - and thrive – in environments often characterised by rapid change. The Higher Education Sector is not immune to the challenges facing organisations in the private sector. To this end, a number of factors that influence the success or lack thereof in strategic planning have emerged.

Strategies developed should be comprehensive and unambiguous as to the future direction that the organisation wishes to pursue. Organisations should clearly distinguish operational effectiveness from strategic planning. The former is a necessary but insufficient factor in ensuring that an organisation remains relevant and committed to its core purpose. The choice of strategy is expected to dictate the choices made in resourcing organisational activities.

The overview of strategic planning at the NMMU as well as the reflection of other planning models reaffirmed the importance of identifying and paying attention to both core and support activities in the strategic planning process. In addition, it became clear that strategic plans should be reinforced with other plans. In Higher Education, it is imperative to have plans for support functions such as Infrastructure, Human Resources, Information Technology, Financial and Risk Management.

To be successful, strategic planning should be a consultative process spearheaded by visible and strong leadership. This goes a long way to guarantee the much-needed buy-in and consensus for implementing the developed strategies. Through consultation, individuals become more familiar with the contents of the plans and more certain of the contribution they can make towards achieving the goals spelt out in the strategic plan. Roles of stakeholders should be clearly defined and understood.

The literature also reveals that the implementation of strategic plans should be monitored and that feedback should be given to relevant role players. Having reliable and timely information provides a sound basis for monitoring and evaluation processes. Monitoring provides early warning signs and equips organisations with a sound basis for evaluating and reviewing the chosen strategic path. A culture of effectively using available information goes a long way in promoting the effectiveness of monitoring.

Sector-specific reporting standards – especially regulatory requirements – play a big role in promoting a culture of reporting. In creating an enabling climate for effective strategic planning, universities should invest in resources such as information and communications technology while enhancing their human resources through training and skills development. Performance monitoring of strategic plans, which is a key variable for success, should be underpinned by well-understood reporting standards. Guidelines for reporting on performance would greatly enhance the monitoring and evaluation processes. To this end, reporting models such as the use of the Balanced Score Card could be explored.

In brief, there is concurrence over the list of factors that influence the strategic planning process as cited in literature (Porter, 2011b; Kaplan and Norton, 2011; Mankins and Steele, 2011). These factors include: communicating the vision to build organisational consensus; a culture of business planning; clearly defined priorities; making the strategy simple and understandable; communicating the strategy; continuously monitoring performance; agreement on timeous and adequate resource deployment. Strategies fail due to various reasons such as unanticipated forces, deployment of insufficient resources, lack of focus and failure to communicate and get buy-in, especially from those expected to implement the strategies (Sterling, 2003:28). Of the reasons attributed to the failure of strategic plans, failure to communicate has been cited as one factor that greatly undermines governance and sustainability efforts.

Table 2.4 provides a summary of factors that affect strategic planning in general, in Higher Education and in NMMU.

Table 2.4: A summary of factors that influence Strategic Planning (organisational, Higher Education and NMMU)

Factor	Organisational	Higher Education	NMMU
Section 2.4 Summary			
The extent to which Strategic Plans are comprehensive.	√	√	√
Alignment of Strategic Planning with processes for resource allocation.	√	√	√
Appropriate choice of planning horizon.	√	√	√
Stakeholder consultation and information sharing.	√	√	√
Reporting standards and mechanisms for monitoring and evaluation of performance.	√	√	√
The role of leadership in giving direction and promoting buy-in.	√	√	√
Alignment of strategy development and implementation.	√	√	√
Availability and access to information and the dominant information culture of an organisation.	√	√	√
Section 2.5 Summary			
Operating in a turbulent and competitive environment.		√	
Strategic planning is indispensable for survival in the sector.	√	√	√
Understanding and catering for the needs of multiple stakeholders during strategic planning.		√	√
Ease with which goals are defined and linked to appropriate performance measures.	√	√	√
Extent to which corporate approaches and nomenclature is used.		√	
Identifying core (primary) and support (enabling) activities.		√	√
Section 2.6 Summary			
Perceived benefits from strategic planning processes.	√	√	
Section 2.7 Summary			
A clearly mapped strategic planning process roadmap.	√		√
Performing situational analysis to understand the internal and external operating environment.	√	√	√
A clear distinction between core and support activities.	√		√
Identification of enabling conditions in pursuance of core activities.		√	√
Alignment of plans and strategies at strategic, tactical and operational levels.	√		√
Annual operating plans aligned to institutional long-term strategies are intended to guide resource allocation.	√	√	√
Refinement to strategic priorities into goals and measurable outputs and outcomes.	√		√

Table 2.4 shows that the factors that influence strategic planning are the same whether considered from an organisational, Higher Education or NMMU perspective. However, differences, if any, on aspects such as the importance attached to strategic planning, the regulatory reporting requirements and frequency of monitoring performance, the familiarity of stakeholders with planning processes and the actual plans, need to be established.

Chapter 3 explores the literature on governance mechanisms at the disposal of universities and the state of governance in South African Higher Education.

CHAPTER 3: GOVERNANCE IN HIGHER EDUCATION

3.1 Introduction

Strategic planning and strategic planning in Higher Education were discussed in Chapter 2. According to good governance practice, a Board of Directors is responsible for determining the overall strategic direction and consequently the ultimate performance and overall control of an organisation (IoD, 2009:20). Governance, therefore, plays a crucial role in ensuring that strategic plans are implemented and that necessary controls are put in place to ensure that an organisation remains sustainable.

This chapter discusses governance in South African Higher Education. Governance has attracted significant attention especially as a result of global high profile failures such as Enron, Woldcom, Societe-Generale, Arthur-Anderson and Tyco (Tetter and Ofori, 2010:234-235). As a consequence of these corporate failures, there has been a focus on corporate governance. Corporate governance is anchored on six key principles. These include the promotion of transparent and efficient management, the protection and facilitation of stakeholder rights, the equitable treatment of all stakeholders and the provision of a redress mechanism to deal with any violation of stakeholder rights, cooperation among stakeholders to ensure sustainability and timely and accurate disclosure of all material matters (OECD, 2004:17-25).

The 2008 report of the Organisation for Economic Cooperation and Development (OECD) identified factors such as expansion, diversification, heterogeneous student bodies, new funding arrangements, increased accountability and a more globalised and internationalised network as the key policy issues that have catapulted governance onto the agenda for Higher Education (Vidovich and Currie, 2011:43). According to the draft regulations for reporting by public Higher Education Institutions in South Africa, contained in Government Gazette No. 35923, the conditions confronting Higher Education, such as dwindling opportunities for acquiring resources and increased competition in the sector, call for the adoption of best governance, financial and general management practices (RSA, 2012b).

Five of the twenty three public universities in South Africa are currently under government administration, partly due to weaknesses in their governance systems. Reflecting on this worrying trend, the South African Minister for Higher Education and Training, states that *“In situations where campus politics and petty political squabbles have come to shape and define governance and management, or the lack thereof, institutions of higher education and training and students suffer the*

most. This situation is intolerable and we are compelled to act in the best interest of students, protecting them against those who act out of self-interest” (DHET, 2012).

Funding and financial management are important aspects of a governance system. Public institutions such as universities earn and retain public trust by embracing transparency and accountability. Bin Sirat (2010:462) identifies six dimensions that characterise the State-University relationship. These are financial, administrative relations, flows of information and knowledge, flow of personnel, conferral of status and ideology. Bin Sirat (2010) further points out that the State will always hold Higher Education accountable as long as universities are viewed as being instrumental in socio-economic and political development.

The governance system in South African Higher Education is shaped and defined by various aspects. The research objective and research questions addressed in this chapter are stated below:

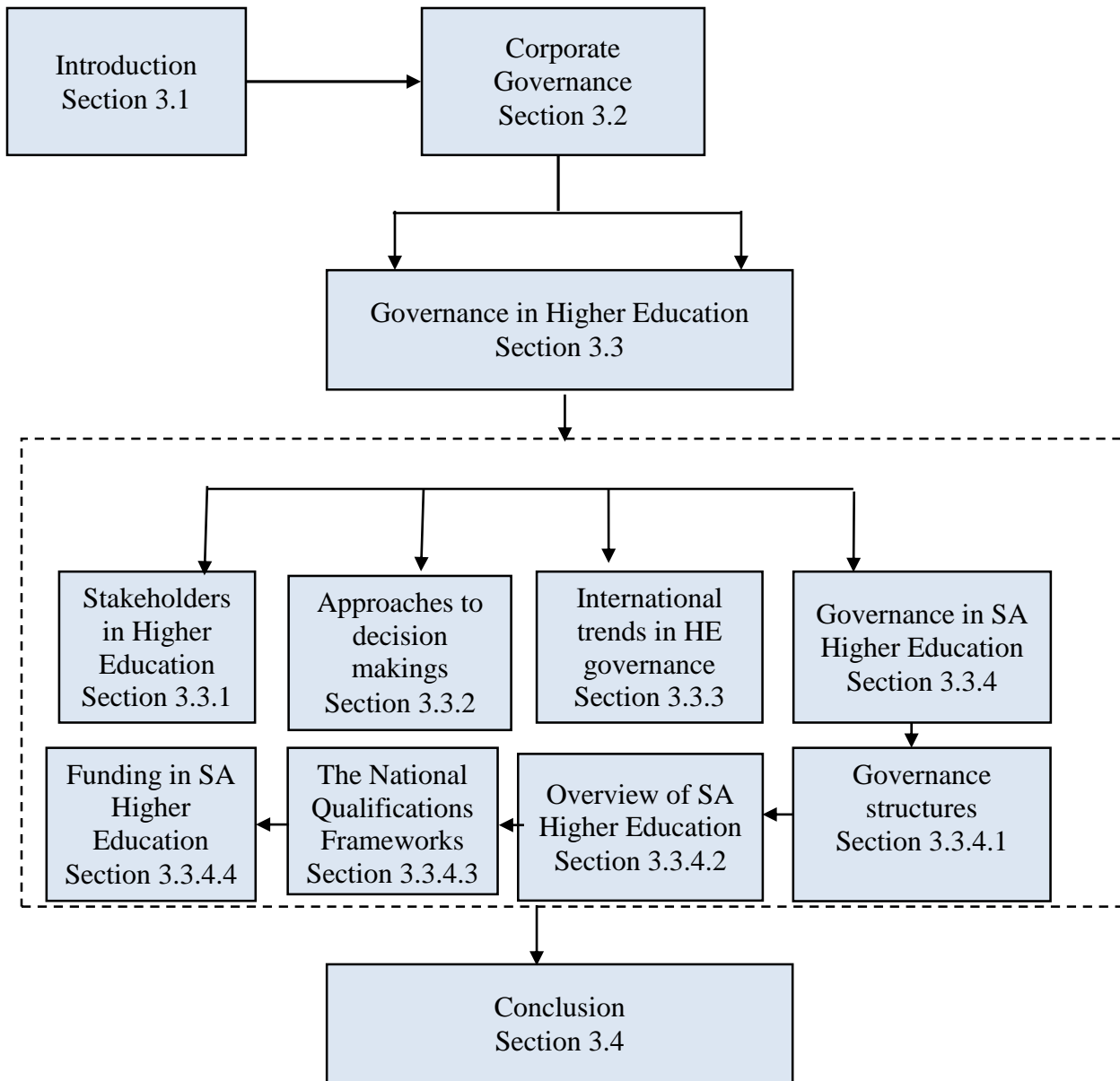
RO2: To determine the characteristics of the South African Higher Education governance system.

RQ2: What are the characteristics of the South African Higher Education governance system?

This chapter begins with an introduction (Section 3.1) followed by a discussion on corporate governance principles and best practices (Section 3.2). Section 3.3 focuses on various aspects of governance in Higher Education. These include the identification of the stakeholders, approaches to governance and international trends and best practices in governance. Thereafter, aspects of the South African Higher Education governance such as governance structures, the National Qualifications Framework and funding are discussed. Section 3.4 concludes the chapter.

The outline of Chapter Three is presented in Figure 3.1.

Figure 3.1: Chapter Three layout



RO2: To identify the characteristics of the South African Higher Education governance system.
RQ2: What are the characteristics of the South African Higher Education governance system?

3.2 Corporate governance

Governance as a mechanism of regulating human activities assumed a structured form with the appointment of directors in feudal economies. The first recorded corporate disaster can be traced to Adam Smith's 1776 treatise 'The Wealth of Nations', which was partly a response to the failure of the South Seas Company (Wagneur, 2004:14).

Hamaker (2003:1) observes that financial disasters in previously well-reputed organisations like Enron, Worldcom and others sent shockwaves through the global business community. Regulatory authorities faced ignominy as a result of these scandals. The embarrassment was compounded when it emerged that investors had been misled by inaccurate financial statements that had the seal of approval of a respectable firm of auditors. Not surprisingly, shareholders turned to executives, boards, regulating authorities and auditors for explanations. These events became the catalyst for a rethink on corporate governance, a concept that had been around for some time but not been given adequate attention. This scenario necessitated a shift in focus from performance to transparency, fairness and accountability.

In response to the global corporate failures, bodies, aimed at strengthening governance, were established. In some countries such as the United States of America (USA), certain principles enunciated in codes of conduct were translated into laws. Butler and Richardson (2005:1) state that the Sarbenes-Oxley Act of 2002 was passed in response to corporate corruption and lack of adequate financial disclosures. Mehdizadeh (2006:1) adds that the Sarbenes-Oxley Act places more responsibility on disclosure of internal controls of corporations. Goedegebuure and Hayden (2007:5) advocate for a nuanced analysis of factors that led to global corporate failures. They posit that good governance entails having effective structures and acceptable behaviour in the eyes of the public. As an example, in 1994, former British Prime Minister John Major set up a committee on standards for public life. This committee, chaired by Lord Nolan, continues to report annually on adherence to its seven principles of public life – selflessness, integrity, objectivity, accountability, openness, honesty and leadership (Goedegebuure and Hayden, 2007:5).

In South Africa, a committee Chaired by Judge Mervyn King was appointed to draft corporate governance guidelines for corporate South Africa in 1990 (IoD, 2009:1). It soon became known as the 'King Committee' and has produced three versions of their report. The King Report adopts the 'apply or explain' approach meaning that organisations – especially companies listed on the Johannesburg Stock Exchange (JSE) - are required to state that they comply with the report's principles. Otherwise,

they need to provide explanations for non-compliance. Subsequently, legislation has been introduced in South Africa based on some of the principles of the King report. These laws are the Public Finance Management Act (PFMA) and the Municipal Finance Management Act (MFMA). These Acts only apply to public sector organisations.

Corporate governance focuses on transparency, fairness and accountability. It provides detail as to how these can be achieved so that it becomes quite clear how companies should behave to warrant transparency, fairness and accountability. The King III Report places the emphasis on three slightly different aspects, namely, leadership, sustainability and corporate citizenship (IoD, 2009:10-11).

Corporate governance is a component of Enterprise governance. Hamaker (2003:1) describes Enterprise governance as a “comprehensive accountability framework that coordinates all management activity”. Enterprise governance covers aspects ranging from strategic planning, operations, financial management and internal controls. King (2009:1) evinces that regulation contains both legal and non-legal processes such as purposeful standardisation and normative internalisation. Enterprise governance focuses on the achievement of corporate objectives and the management of risk. The Information Technology Governance Institute (ITGI) defines enterprise governance as ‘a set of responsibilities and practices exercised by the board and executive management with the goal of providing strategic direction, ensuring that objectives are achieved, ascertaining that risks are managed appropriately and verifying that the enterprise’s resources are used responsibly’ (ITGI, 2003).

Enterprise governance, therefore, addresses the challenge of how companies can make sure they achieve the objectives they have identified, manage risks appropriately and make sure resources are used responsibly. This is different to corporate governance but one can immediately see that they stand shoulder to shoulder to address different aspects of the same entity.

In summary, governance received notoriety mainly due to failures by large multi-national corporations. Consequently, a number of mechanisms aimed at regulating the functioning of organisations have since emerged. In South Africa, principles enunciated by the King III Report on Corporate Governance are foundational in governance systems. Corporate governance and Enterprise governance are not mutually exclusive.

3.3 Governance in Higher Education

Education is important for all economies; particularly for developing economies such as South Africa. Broere, Geyser and Kruger (2002:5) underscore this importance by stating that Higher Education can help eradicate the gap between those who are informed and those not well informed. Higher Education, in particular, plays a vital role in the generation and dissemination of knowledge for the benefit of society as a whole. Michael (2005a:18) states that “universities are in the business of disciplines and intellectual activities – activities that entail dedication, long-suffering, commitment and devotion to knowledge that is authentic, enduring and true”.

As was discussed in Chapter 2, best practices from the corporate sector can be customised and appropriated by the Higher Education Sector. Birnbaum (2000:216) observes that Higher Education and corporate business show both similarities and contrasts. The key distinction is that whereas business is reactive, Higher Education is reflective. As is the case with corporate business, Higher Education Institutions need the capacity and agility to quickly respond to changes in the internal and external environments (Thomas, 1996:36). The Higher Education Sector operates in fast-changing environments. This view is shared by Altbach, Gumport and Johnson (2001:3) in their description of the political and economic climate of Higher Education in the USA as, unpredictable, characterised by accusations of inefficiency, irresponsibility and un-governability. The unpredictability of the ever-changing operating environment in Higher Education points to a need for the academy to embrace tried and tested practices from the corporate world.

Transnational bodies contribute to the regulation of global Higher Education by using both subtle and explicit ways. Bodies such as the World Bank, the International Monetary Fund (IMF), United Nations Education Scientific and Cultural Organisation (UNESCO) the European Union (EU) and the Organisation for Economic Cooperation and Development (OECD) promote ‘soft-regulation’ of universities (King, 2009:5). The introduction of global and national ranking and league tables of universities by the media and other private authorities informally contribute towards regulation of Higher Education. It should be noted, however, that devoid of comparable government data across countries, the rankings, depending on research citations and awards and peer-collected surveys, will continue (King, 2009:39, 136). Although the use of rankings and league tables could be an important source of information, the absence of unified norms for data on all aspects of an institution’s life does not assist potential students in making their choice.

Marginson and Van Der Wende (2007:8-9) suggest that modelling of national systems as economic markets and promoting internal and external competition serve as self-regulatory catalysts for governance. The New Public Management (NPM) model of governance is a case in point. The NPM is premised on the notion that without competition, there is little or no incentive to do better. The NPM, therefore, has evolved as a technique that institutions use in response to globalisation. Higher Education stakeholders should however be wary of this model because competition is often skewed in favour of the fittest, therefore, well-intentioned institutions with noble objectives may suffer unless there are checks and balances on the application of this model.

A key body in the Higher Education governance system is the University Council. Locke (2001:39) draws a distinction between governance and management by stating that governance is the “process, structure and relationship through which the Council oversees the functioning of management while management is the structure through which managers attempt to achieve the goals of the institution”. Locke concludes that good governance is anchored on three factors – policy, procedures and oversight. Hall, Symes and Luescher (2002:24) argue that the legitimacy of governance structures such as the University Council depends on the ability to debate and approve policies in a manner that demonstrates that they are serving the best interests of all stakeholders. Vidovich and Currie (2011:44) state that governance is concerned with issues of vision, policy and accountability and therefore governing bodies such as University Councils, Senate and Faculty Boards play a crucial role in managing internal and external influences on a University.

Despite their autonomous nature, universities, like other organisations, require structured and well-rounded governance systems and processes. Edwards (2003:2-3) opines that the emotive nature of this discourse is mainly as a result of a perceived threat to the autonomy and powerbase of academics and management. In the final analysis, it is in the best interest of long-term futures of institutions to be seen by the State and the community as operating under sound governance. Universities can afford to be more inwardly focused than industry because students, who are the key customers, are less demanding than customers in industry (Van Loggerenberg, 2008:280-281). Van Loggerenberg decries that the scrutiny of institutions by the public, investors or auditors tends to focus on the achievement of profit and other objectives with less emphasis on corporate governance principles such a reporting on sustainability. This results in a distorted view of the performance of the organisation and greatly undermines oversight and accountability.

3.3.1 Stakeholders in Higher Education

Sarrico, Rosa, Teixeira and Cardoso (2010:41) describe stakeholders as individuals or entities with an interest in an activity either by paying or benefitting from it. In the case of a university, examples of stakeholders would include: applicants, students, academic and non-academic staff, prospective employees, alumni, professional organisations, employers, financing agencies and the general public. Ciegis and Gineitiene (2006:56) advise that responsible citizens should accept responsibility for what happens socially, politically, environmentally and economically in their environment. Based on the foregoing, it can be concluded that public institutions have many stakeholder groups.

Governance ensures that the interests of all stakeholders in Higher Education are catered for and that goals and objectives are met. By virtue of its nature, Higher Education has various groups and individuals that are impacted directly or indirectly. The principal stakeholders in Higher Education are government, management, staff members, students and external stakeholders with legitimate interests in Higher Education. External stakeholders are understood as “all sections and segments of civil society that are knowledge driven and knowledge dependent” (NCHE, 1996:77). The Government is but one of the many stakeholders in Higher Education. Various stakeholders in Higher Education hold different interests. Consequently, varying levels of value are attached to information that is reported on. Table 3.1 shows the list of stakeholders and their information requirements in Higher Education.

Table 3.1: Higher Education stakeholders and their interests

Type of Person	Interest	Information of Value
Trustees and officers	<ul style="list-style-type: none"> • Achievement of mission. Avoidance of unnecessary short – term costs and risks. • Ethical comfort • Assurance of respectable legacy 	<ul style="list-style-type: none"> • Performance measures in all sustainability-related areas • Projected performance • Benchmarks against other institutions and sustainable standards.
Current and prospective employees	<ul style="list-style-type: none"> • Avoidance of unnecessary short-term costs and risks • Ethical comfort 	<ul style="list-style-type: none"> • Summary indicators of sustainable performance
Current students	<ul style="list-style-type: none"> • Evidence of effective education regarding sustainability • Institution’s reputation • Ethical comfort 	<ul style="list-style-type: none"> • Curricular and extracurricular offerings. Indicators of student learning and outcomes • Summary indicators of sustainability performance
Prospective students	<ul style="list-style-type: none"> • Evidence of effective education regarding sustainability • Institution’s reputation • Ethical comfort • Data for college choice 	<ul style="list-style-type: none"> • Curricular and extracurricular offerings. Indicators of student learning and outcomes • Summary indicators of sustainability performance • Benchmark against other institutions and sustainability standard.
Alumni	<ul style="list-style-type: none"> • Evidence of effective education regarding sustainability • Institution’s reputation • Ethical comfort. 	<ul style="list-style-type: none"> • Curricular and extracurricular offerings. Indicators of student learning and outcomes • Summary indicators of sustainability performance • Benchmark against other institutions and sustainability standards
Donors	<ul style="list-style-type: none"> • Achievement of mission • Avoidance of unnecessary short–term costs and risks. Ethical comfort 	<ul style="list-style-type: none"> • Summary indicators of sustainable performance • Projected performance
Local community	<ul style="list-style-type: none"> • Avoidance of short- term risks. • Impacts on local environment 	<ul style="list-style-type: none"> • Community impact data
Contractors (research services)	<ul style="list-style-type: none"> • Achievement of mission. Avoidance of unnecessary short-term costs and risk • Ethical comfort 	<ul style="list-style-type: none"> • Summary indicators of sustainable performance • Projected performance
Government regulators and politicians	<ul style="list-style-type: none"> • Avoidance of unnecessary short-term costs and risk • Ethical comfort 	<ul style="list-style-type: none"> • Summary indicators of sustainable performance • Projected performance

Source: Merkel and Litten (2007:7)

Various groups of stakeholders and their interests in the governance of Higher Education are summarised in Table 3.1. These stakeholders require information in order to effectively exercise their role in governance. The importance of information to the stakeholders is also stated. It is evident that the interests of many of the identified stakeholders can be summed up as being for the public good.

3.3.2 Approaches to decision making

Governance manifests itself in various ways in Higher Education. Cohen and March (1986:81) describe universities as “organised anarchies” in which preferences are discovered through actions as opposed to goals based on preferences. Wang (2010:490) observes that in this era of neo-liberalism and managerialism, university governance seems to gravitate towards competitive and entrepreneurial approaches characterised by performance evaluation. Tetter and Ofori (2010:236-239) state that the two pre-eminent approaches are the agency approach and the stakeholder (pluralist or communitarian) approach. The former is characterised by election of a Board of Directors that set and direct strategy while the latter involves multiple actors whose input sets the strategy and to whom the university is accountable.

The approach adopted by an institution gives an indication of the nature of governance in that institution. Khefacha and Belkacem (2008:54) argue that Higher Education is a place where several stakeholders pursue different interests according to their own objectives.

Table 3.2 lists approaches to decision making in universities. Good governance is associated with the collegial and bureaucratic approaches (Khefacha and Belkacem, 2008:55). In the absence of a universal definition of a well-governed institution, a case can be made for a well-calibrated balance of collegial and bureaucratic approaches. On the contrary, a preponderance of the politic and garbage-can approaches is often characteristic of badly governed institutions.

Table 3.2: Main characteristics of the four decision-making approaches

Model/Dimensions	Collegial	Bureaucratic	Politic	Garbage can
Criteria used to make the decision	In coherence with norms and values	Oriented towards the reach of the standardised objectives	Protection of interests	Not well defined
Approval for the decision	Consensus	Imposed by the hierarchy	Coalition formation	Flight or oversight
Basis of the decision makers power	Academic and professional expertise	Hierarchic position (legitimate position)	Association with other actors	Ambiguous
Autonomy of the decision maker	Academia and professional liberty	Instructions, norms and standardised values	Capacity to influence	Absence of constraints
Model of conflict resolution	Consensus	Centralised and hierarchic power	Bargaining and negotiation	Groping
Acceptation of the decision	Shared believes and values	The legal/rational domination	Interest of actors' coalition	Hazard

Source: Khefacha and Belkacem (2008:54-55)

In a study on Tunisian Higher education that is currently witnessing an explosion in student numbers, Khefacha and Belkacem (2008:60) conclude that pedagogic and scientific decisions follow the collegial model, institutional management decisions follow the bureaucratic model while decisions relating to staff are taken based on political decision making. Higher Education in China is based mainly on the bureaucratic approach. Based on the indicators from the Carnegie foundation, Wang (2010:481) suggests that government control on Higher Education could be measured by using two groups of indicators: academic autonomy and administrative flexibility. These are shown in Table 3.3.

Table 3.3: Indicators for academic autonomy and administrative flexibility

Indicators	Academic autonomy	Administrative flexibility
Sub Indicators		
1	Defining campus mission and objectives	Appoint senior administrators
2	Setting admission standards	Hiring new faculty members
3	Determining course content and objectives.	Granting faculties tenure and promotion
4	Setting student – Faculty ratios	Determining salary schedules
5	Setting degree requirements	Authorising travel abroad for faculty members
6	Establish new academic programmes	Setting campus enrolment levels.
7	Reviewing existing academic programmes	Setting tuition levels
8	Eliminating existing undergraduate programmes	Accepting non state revenue
9	Adding or discontinuing existing academic departments	Building campus facilities
10	Offering full fee paying courses or programmes	Deciding whether to enter specialised collaborations

Source: Wang (2010:481)

The indicators in Table 3.3 show characteristics of academic autonomy and administrative flexibility in Higher Education. In countries where universities are tightly controlled by the Government, the scope of academic autonomy and administrative flexibility is limited. In addition, within institutions, tensions exist between administrators and academics. Therefore, as part of good governance, it is important for institutions of Higher Education to clearly delineate the delegations of authority given to the academic and administrative functions.

3.3.3 International trends in the governance of Higher Education

In the era of globalisation and national integration, the role of the national state has undergone major changes with a consequent call for rule-based global governance systems. Newly emerging powers such as China and Singapore, with a determination to enhance their global standings, are placing emphasis on education in governmental strategies. Universities compete within and across borders for high fee-paying students prepared to get international education (King, 2009:37-33). Despite the impact of globalisation in Higher Education policy, there still remains a discernible, distinct and localised process.

Kretovics (2011:26) points out that in a radical departure from practices in the developed world, Higher Education in the USA has many systems that are managed at the State and not at the Federal (national) level. The German system of Higher Education places emphasis on integrating research and teaching with academic freedom being derived from the state and a strong professoriate. This is in contrast to the French system that is characterised by strong bureaucracy emanating from the legal-rational authority of the State. The British system emphasises close working relationships between tutors and students in an atmosphere of collegiality and autonomy (King, 2009:19). In Malaysia, the role of universities has evolved from being State-controlled to being viewed as instruments for implementing the objectives of the State (Bin Sirat, 2010:463).

Goedegebuure and Heyden (2007:6-7) note the following changes in the Higher Education landscape in some countries:

- A declining confidence on the part of the State in the self-governance models of universities in Australia;
- An increase in accountability and system-wide coordination across states in Canada;
- An increase in accountability legislation and a shift in influence from faculty to managers in the United States of America;
- Increased decentralisation and a shift towards self-regulation with accountability to the State being managed through compliance with certain codes of conduct in the Netherlands; and
- A shift towards shared governance with stakeholders and other interest groups outside of universities in Great Britain.

The state of governance in Higher Education in China is described as a fine balance between State control and university autonomy - 'decentralised centralisation'. The effects of globalised practices have given impetus to reforms in Chinese Higher Education. Heretofore, the Chinese and Soviet models of Higher Education confined universities to produce a workforce as planned by the State. In the case of China, the ruling Communist Party of China (CPC) embarked on granting autonomy to universities in 1985, albeit with strict State control (Wang, 2010:477-482). In a triangular relationship between state, society and Higher Education, Maasen and Cloete (2002:23) foresee an emerging trend worldwide in which the State is slowly minimising its role and hence giving more prominence to the society-Higher Education dimension. In this scenario, the distinction between State and society continues to diminish as the state represents societal interests.

On the African continent, Tetter and Ofori (2010:234-235) call for governance as a mechanism to ameliorate risks of poor quality and management in Higher Education. Tetter and Ofori cite the case of Ghana, the first African country to gain independence, currently witnessing an upsurge in demand for and enrolment in Higher Education and a consequent proliferation of private institutions. Having inherited the British system of education, Ghana provides a case of how governance has evolved in African Higher Education. The features of Ghana's universities that distinguish them from private sector organisations include the fact that universities:

- Are legal entities established by an Act of Parliament;
- Are fragmented organisational structures with some autonomous units;
- Have diffused decision making through a system of boards and committees;
- Have substantial authority and initiative vested on individual academics; and
- Have a high degree of brain power within its institutions.

The above discussion indicates that governance is gaining importance in the Higher Education sector globally. Institutions combine self-regulation and State oversight to ensure that all stakeholders contribute to the continued existence of the institution. The autonomy of Higher Education comes with the responsibility to advance institutional goals.

3.3.4 Governance in South African Higher Education

The Higher Education Act of 1997, as amended, constitutes the current system of governance in Higher Education. This Act is buttressed by the policies contained in the 1996 report of the National Commission for Higher Education (NCHE) and the 1997 White paper on Higher Education (Hall *et al.* 2002). The NCHE proposed a model of governance in which the State supervises the system to ensure quality and accountability. The White paper proposes a corporate governance model grounded on the context of autonomous institutions working cooperatively with a pro-active government in a range of partnerships.

Higher Education Institutions are, in terms of the Higher Education Act 101 of 1997, autonomous. However, this autonomy is not unfettered for it goes with accountability (Education, 2001). In line with international practice, the South African Higher Education system has adopted a bicameral approach whereby University Councils take care of the public interest while professional academics in Senate are responsible for the curriculum, assessment, research and other key activities (CHET, 2002).

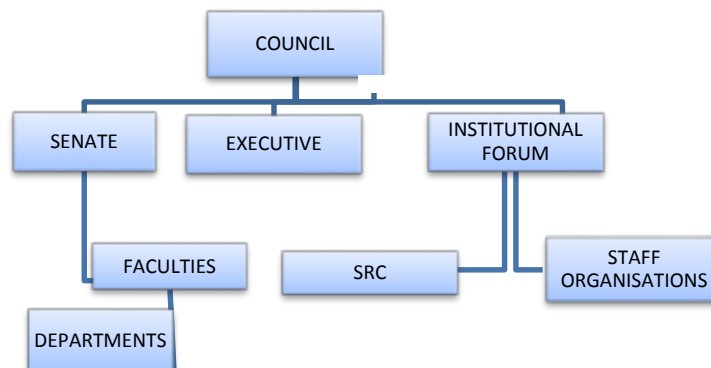
It is essentially a bicameral system in which primary governance responsibilities are shared between Council (and/or institution forum) and professional academic sectors (Senate and Faculty boards). The State has often retained control of key variables such as student fees and staff salaries without necessarily micro-managing institutions. However, there are cases where the State micro-manages as indicated in proposed amendments to the Higher Education Act of 1997 (RSA, 2012b).

3.3.4.1 Governance Structures

In countries such as South Africa that are members of the Commonwealth, University Councils sit at the apex of governance structures in Higher Education. Governance structures in the Commonwealth governments are to a great extent influenced by the Hoare Report of 1995 (Edwards, 2003:2-3). In South Africa the four major governance structures in governance include the Council, Senate, the Executive and the Institutional Forum. Hall *et al.* (2002:31) describe the South African Higher Education governance model as “cooperative governance” in a bicameral system. It is characterised by the troika of bodies (Council, Senate and Institutional Forum) being bound by the dual principles of institutional autonomy and academic freedom.

Figure 3.2 shows that the University Council is the supreme decision making and governance structure in Higher Education. The University Council is supported by the Senate, Executive Management and the Institutional Forum. The University Senate deals with academic matters from faculties and departments. Staff and students contribute through the Institutional Forum. The Executive, often led by a Vice-Chancellor, ensures that the university runs optimally from all aspects.

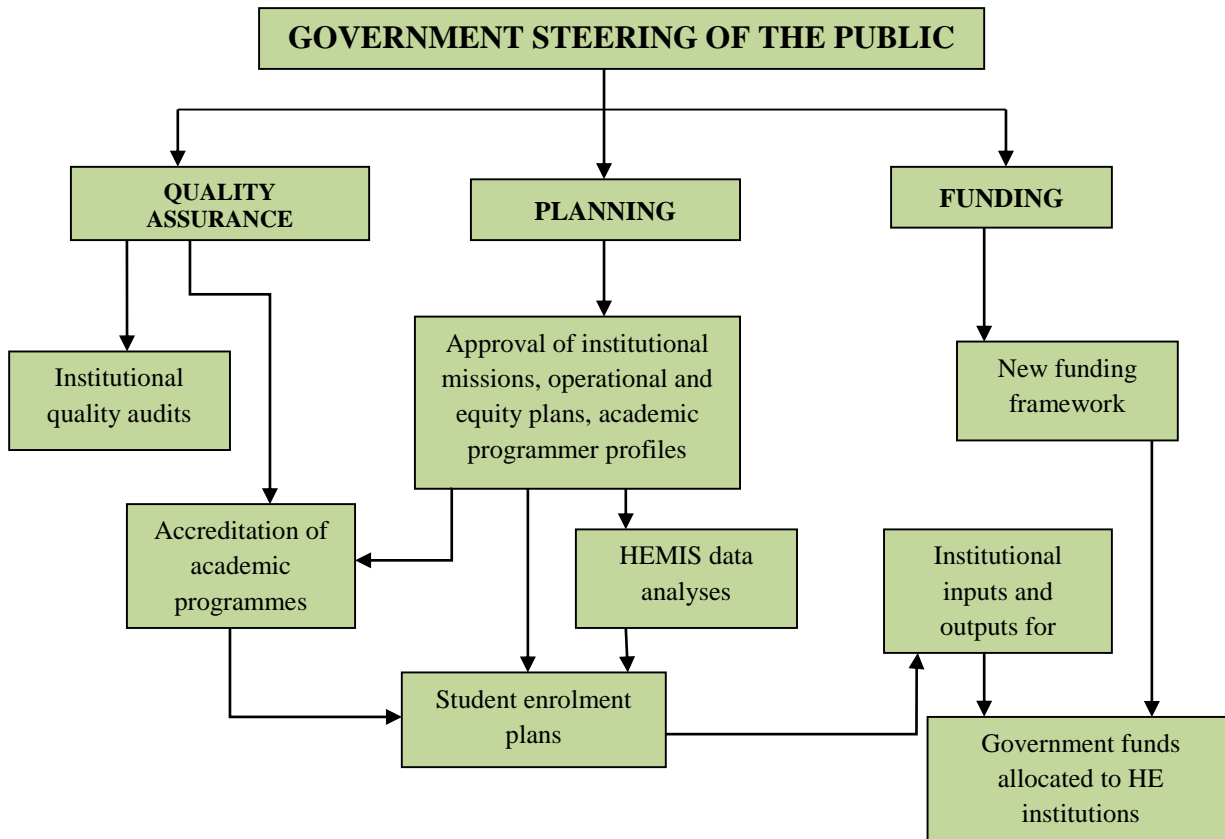
Figure 3.2: South African Higher Education governance



Source: File (2000:31)

The steering of the public higher education system is anchored on three key pillars – quality assurance, planning and funding. Direction of the South African Higher Education system has various facets as shown in Figure 3.3.

Figure 3.3: The system of government steering of the Public Higher Education System



Source: Steyn and De Villiers (2005:32).

It is evident that different stakeholders each play an important role in the governance of South African Higher Education Institutions. While analysing Higher Education Institutions in South Africa, Hall *et al.* (2002:58) group institutions into the following four categories described in Table 3.4.

Table 3.4: The four organisational types of South African Universities

	Organisational type	Characteristics
1	Contested institutions	Limited representativity and poor system of delegation. Institutions prone to crisis.
2	Management focused institutions	Inwardly focused governance systems with bias towards private sector type of managerial approaches.
3	Democratic institutions	Broad representativity but shallow systems of delegation.
4	Democratic and well managed institutions	Participatory governance with formal systems of delegation of authority.

Source: Summarised from Hall, *et al.* (2002:58)

Table 3.4 reflects the Higher Education landscape in South Africa. The twenty three public universities fall in the four organisational types. The landscape can mainly be attributed to historical legacies and subsequent failures to institute good governance practices in institutions.

Vice Chancellors are accountable to their Councils. Ramphele (2008:206), a former Vice Chancellor of the University of Cape Town, paints a grim picture of governance in South African Higher Education by stating that “good governance and fiduciary responsibilities are seriously inadequate in many institutions”. Ramphele also decries the lack of experience in institutional governance and institutional performance in the ranks of many University Councils and points out that the gap in the Higher Education Act of 1997 leaves the Minister for Higher Education with no mechanism to demand and enforce performance against plans which do not help the situation (Ramphele, 2008:206). The problem is not unique to South Africa. Hoare (1995:45) states that university governing bodies’ roles and responsibilities are not always clear, consequently leading to the neglect of corporate and strategic issues. University Councils are not always pro-active in directing institutions.

Nadler, Miller and Modica (2010:77) contend that since the number of professional administrative positions and corresponding budgets has increased, consideration should be made to include this category of staff in institutional governance processes. The structures involved in South African Higher Education are representative of all identified stakeholders.

3.3.4.2 Overview of South African Higher Education

Higher Education has a clearly defined role to play in the South African society. The vision of the Higher Education system in South Africa is articulated in Education White Paper 3 as geared to “meet,

through well-planned and coordinated teaching and learning programs the needs of high-skilled employment presented by a growing economy aspiring for global competitiveness” (RSA, 1997:3). The White Paper further states that the purpose of Higher Education is, the provision of manpower with high-level competencies and expertise, required for the growth and prosperity of a modern economy. The National Plan for Higher Education (RSA, 2001) articulates this vision by elaborating on performance areas. Key to the vision and plan for Higher Education is an attempt to undo or modify certain features of the education system that resulted from South Africa’s apartheid history.

Pre-1994 Higher Education

Higher Education in SA underwent radical restructuring necessitated by historical ideologies. This resulted in the merging of institutions. Bunting (2002:59-63) states that “at the beginning of 1994, South Africa’s HE system was fragmented and uncoordinated”. He adds that the genesis of the then 36 Higher Education Institutions was in the 1984 legislation that designated different institutions to different racial groups. The ruling National Party held the view that Higher Education Institutions were creatures of the state and that universities had to concentrate on the development of knowledge while technikons were to concentrate on the application of knowledge. This bifurcation was problematic as it had a potential of bias of resource mobilisation. A tabular representation of the pre-1994 Higher Education landscape is shown in Table 3.5.

Table 3.5: Classification of public universities and technikons by racial origin and by historical advantage/disadvantage

Categories	Institutions included	Key characteristics up to 1994	Historically advantaged/disadvantaged
1 Historically black universities: RSA	University of Durban Westville, Medunsa University, University of the North, Vista University, University of the Western Cape	<ul style="list-style-type: none"> • Top management originally supportive of apartheid government • Originally authoritarian institutions, which became sites of anti-apartheid struggle during the course of the 1980’s • Intellectual agenda determined by instrumentalist notion of knowledge and function being that of training ‘useful black graduates’ 	Historically disadvantaged

Table 3.5: Classification of public universities and technikons by racial origin and by historical advantage/disadvantage (Continued)

Categories	Institutions included	Key characteristics up to 1994	Historically advantaged/disadvantaged
2 Historically black universities: Transkei Bophutswana, Venda and Ciskei (TBVC)	University of Fort Hare, North West University, University of Transkei, Venda University	<ul style="list-style-type: none"> • Perceived in 1980s as extensions of civil service of ‘independent republics’ • Authoritarian institutions which became sites of anti-apartheid struggle at the beginning of the 1990s • Intellectual agenda determined by instrumentalist notion of knowledge and function being that of training ‘useful black graduates’ for ‘independent republics’ 	Historically disadvantaged
3 Historically black technikons: RSA	ML Sultan Technikon Mangosuthu Technikon. Technikon Northern Transvaal, Peninsula Technikon.	<ul style="list-style-type: none"> • Top management originally supportive of apartheid government • Authoritarian institutions, which became sites of anti-apartheid struggle in the early 1990’s • Intellectual agenda determined by instrumentalist commitments to vocational training 	Historically disadvantaged
4 Historically black technikons: TBVC	Border Technikon, Eastern Cape Technikon, North West Technikon	<ul style="list-style-type: none"> • Perceived in 1980s as extensions of civil service of ‘independent republics’ • Small institutions with primary focus on vocational training 	Historically disadvantaged
5 Historically white (Afrikaans) universities: RSA	University of the Orange Free State University of Port Elizabeth University of Pretoria, Potchefstroom University Rand Afrikaans University University of Stellenbosch	<ul style="list-style-type: none"> • Authoritarian institutions supported the apartheid government • Good management and administrative systems in place • Intellectual agenda affected by instrumentalist commitments and by the severing of contacts with international academics during the academic boycott in the 1980’s 	Historically advantaged

Table 3.5: Classification of public universities and technikons by racial origin and by historical advantage/disadvantage (Continued)

Categories	Institutions included	Key characteristics up to 1994	Historically advantaged/disadvantaged
6 Historically white (English) universities: RSA	University of Cape Town, University of Natal, Rhodes University, University of the Witwatersrand	<ul style="list-style-type: none"> • Did not support apartheid government • Collegial institutions at top levels of senate and heads of academic departments, but authoritarian at lower levels • Good management and administrative systems in place • Intellectual agendas set by commitments to knowledge as a good in itself, and strong international disciplinary teaching and research links 	Historically advantaged
7 Historically white technikons: RSA		<ul style="list-style-type: none"> • Authoritarian institutions, which supported the apartheid government • Intellectual agendas determined by instrumentalist commitments to vocational training 	Historically advantaged
8 Distance education universities and technikons	University of South Africa (Unisa) Technikon South Africa (TSA)	<ul style="list-style-type: none"> • Authoritarian institutions, which supported the apartheid government • Unisa: instrumentalist intellectual agendas with outward or international focus on teaching and research • TSA: primary focus on vocational education. 	Historically advantaged

Source: Bunting (2002:81-84)

Post-1994 South African Higher Education

The post-1994 era of South African Higher Education has been dominated by issues of transformation. Following the 1994 democratic elections, a National Commission of Higher Education was formed to identify what needed to be retained and what had to be transformed (Cloete and Bunting, 2000:94). The 1997 White Paper emphasised the need for a single coordinated system of Higher Education. The main regulator in the public Higher Education system still remains the Higher Education Management Information System (HEMIS) funding model though a new model that has been effective since 2004.

A major post-1994 milestone in Higher Education was the development and subsequent release of the National Plan for Higher Education (RSA, 2001). The goals and objectives are:

- To promote equity of access and to redress past inequalities through ensuring that the staff and student profiles in Higher Education progressively reflect the demographic reality of SA society;
- To provide increased access to Higher Education to all, irrespective of race, gender, age, creed, class or disability and to produce graduates with the skills and competencies necessary to meet the need for human resource skills in the country;
- To ensure diversity in the organisation and institutional landscape of the Higher Education system through mission and programme differentiation, thus enabling the addressing of regional and national needs in social and economic development;
- To build high level research capacity to address the need for research and knowledge in South Africa; and
- To build new institutional and organisational forms and new identities of institutions through regional collaboration between institutions.

The intended outcomes of South African Higher Education are outlined in the National Plan for Higher Education (RSA, 2001). The foci are broadening enrolment and participation rates while concomitantly increasing the throughput rate. A corollary to this is the need to increase and augment the capacity of the existing infrastructure in order to cope with the increase in demand. Other important aspects include the description of the desired attributes of graduates and also curriculum changes. Table 3.6 contains a summary of these outcomes.

Table 3.6: Summary of Higher Education outcomes

Outcome	Description
1	Increased participation rate
2	Increased graduate outputs
3	Broadened social base of students
4	Increased recruitment of SADC students
5	Changed enrolments by field of study
6	Enhanced cognitive skills of graduates
7	Increased equity in access and success rate
8	Improved staff equity
9	Diversity through mission and programme differentiation.
10	Regulation of Distance Education programmes
11	Establishment of a single dedicated distance education institution
12	Regulation of private Higher Education
13	Research concentrate and funding linked to outputs
14	Increased graduate enrolments and outputs at Masters and Doctoral levels
15	Programme and Infrastructure collaboration
16	New institution and organisation forms

Source: RSA (2001). National Plan for Higher Education.

3.3.4.3 The National Qualifications Framework

The South African Qualifications Authority (SAQA) Act was promulgated in 1995. One of its key objectives was the establishment of a National Qualification Framework (RSA, 1995: 1154). SAQA was instituted to address the deficiency or lack of a common qualification structure which had in turn posed problems such as credit transfers and hampered inter-institutional mobility. In a review of the National Qualifications Framework (NQF), Lugg (2008:266) described it as a fractured system that is symptomatic of “struggles over the nature of the state, the economy, institutions and the relationships between them”.

The NQF, a product of political negotiations, was aimed at integrating education and training inherited from the apartheid regime (Lugg, 2008: 260). As part of the negotiation, the African National Congress and the Congress of South African Trade Unions (COSATU) advocated for a single system of education and training with similar exit points regardless of the delivery mechanism (ANC, 1994). Metcalfe, Vadi and Nkomo (1992:111) lament that the apartheid government was determined not to change the education landscape until the constitution was changed. Many young African people were

out of school before the democratic dispensation. Hartshorne (1992:53) characterised this group of “out-of-school youth” as unemployed and unemployable.

According to the SAQA Act (RSA, 1995), the objectives of the NQF are listed as follows:

- To create an integrated national framework for learning achievements;
- Facilitate access to, and mobility and progression within education, training and career paths;
- Enhance the quality of education and training;
- Accelerate the redress of past unfair discrimination in education, training and employment opportunities; and
- Contribute to the full personal development of each learner and the social and economic development of the nation at large.

The NQF is a credit- and level-based framework that influences progression by defining levels at which programmes are taught and assessed. The NQF also regulates the awarding of credits. In 2008 the National Qualifications Framework (NQF) Act No. 67 replaced the South African Qualifications Authority Act No 58 of 1995. The updated NQF now has ten levels, each with an accompanying level descriptor (www.nqf.org.za). The level descriptors are based on degree of competency in the categories listed below:

- Scope and knowledge;
- Knowledge literacy;
- Method and procedure;
- Problem solving;
- Ethics and professional practice;
- Accessing, processing and managing information;
- Producing and communicating information;
- Context and systems;
- Management of learning; and
- Accountability.

The new NQF is aligned with the outcome-based education philosophy that has been introduced in South Africa (RSA, 2012a). South African universities aspire to produce graduates at the desired NQF level and also ensure that staffs, especially academic staff, attain the relevant NQF level. Both the

proposed NQF Framework and accompanying sub-frameworks are currently under review and the Minister for Higher Education and Training has published draft amendments for public comment in Government Notice No. 1040 of 2012.

The above discussion introduces the regulatory environment governing quality in South African Higher Education. The important role of the South African Qualifications Authority (SAQA) as the custodian of quality with regard to responsibility over the NQF was highlighted. The objectives of integrating hitherto disparate systems of Higher Education in South Africa as well as the imperative to ensure that South Africa produces graduates with the requisite attributes, skills and competencies remain relevant today. Higher Education Institutions should ensure that their activities and programmes align with these national imperatives.

3.3.4.4 Funding in South African Higher Education

Public universities in South Africa fall under the Ministry of Higher Education and Training. Although a significant portion of their revenue comes from State funding, universities in SA, as is the case with most of the rest of the world, are semi-autonomous entities. Funding of Higher Education comes mainly from the Government. During the pre-1994 period, Higher Education Institutions received funding from Government either as negotiated budgets or from formula funding.

Unlike the pre-1994 era, in the post-1994 era, there has been predictability and stability in the funding mechanism for Higher Education. This apparent stability in the funding in Higher Education is credited to the existence of the South African Post-Secondary Education (SAPSE) formula (Steyn, 2002). The formula was developed in 1980 and underwent various revisions. Steyn states that the SAPSE formula focused on measures for student enrolment such as:

- Full Time Equivalent (FTE) enrolled students – The product of the weight of students with aggregate credits; and
- Effective Subsidy Students (ESS) – A more complex formula that takes factors such as student support infrastructure into account.

A funding framework for Higher Education in South Africa was published in terms of the Higher Education Act No. 101 of 1997. This framework, previously referred to as the New Funding Formula (NFF), took effect during the 2004/05 financial year and applies currently. Steyn and De Villiers (2005) state that the NFF is underpinned by the philosophy that:

- There is a need to plan, govern and fund Higher Education as a single coordinated system;
- Higher Education should respond to the National Development Agenda in terms of access, redress and Human Resource development; and
- There should be a planning model for Higher Education.

In light of the above, the following steps were identified as necessary responses to the call for a planning model for Higher Education:

- The National Government through the Ministry of Education determines policy, goals and objectives;
- Every Higher Education Institution would develop three-year rolling plans indicating their alignment to National goals and objectives; and
- The release of funds to institutions is subject to the approval of plans from institutions by the Ministry of Education.

Alluding to the formula that is used to fund Higher Education Institutions in South Africa, Steyn and De Villiers (2005) list its advantages as follows:

- Ensures objectivity in allocation;
- It acts as a means through which the State and institutions contract for the provision of services;
- It enables predictability in budgeting and planning;
- It gives autonomy to institutions the allocation of funds without the State's prescription; and
- Enables flexibility in accommodating unpredictable and unforeseen factors.

Steyn and De Villiers (2005) further state that according to the New Funding Formula (NFF), funds allocated to Higher Education Institutions are specifically targeted at addressing the delivery of teaching, learning and research as well as other outputs described in three-year institutional plans. With regard to reporting, the South African Post-Secondary Education (SAPSE) student statistical manual defines the statistical and magisterial districts for student reporting. Post-secondary education institutions are those that offer at least one formal degree, diploma or certificate on a level higher than the secondary level.

The Department of Higher Education and Training requires all institutions to report in a predetermined format for purposes of fund allocation. Steyn and De Villiers (2005) further state that according to the

New Funding Formula (NFF), funds allocated to Higher Education Institutions are specifically targeted at addressing the delivery of teaching, learning and research as well as other outputs described in three-year institutional plans. With regard to reporting, the South African Post-Secondary Education (SAPSE) student statistical manual reflects the statistical and magisterial districts for student reporting. Post-secondary education institutions are those that offer at least one formal degree, diploma or certificate on a level higher than the Secondary level. The most comprehensive reporting requirements for a university are through the Higher Education Management Information System (HEMIS).

The above discussion identified the main stakeholders in the Higher Education governance system. In keeping with decision making that is based on complete, accurate, reliable, transparent and accessible information, the information requirements for each stakeholder group were identified. Quality assurance, planning and funding were identified as the three pillars upon which Higher Education is steered in South Africa. The intended outcomes from Higher Education as outlined in the National Plan for Higher Education are partly reflected in the National Qualification Framework (NQF).

3.4 Conclusion

Chapter 3 discussed the literature on governance in Higher Education. The reviewed literature underscores the need for Higher Education Institutions to embrace tested corporate governance best practices in order to remain sustainable. In instituting governance in Higher Education, attention should be paid to the various stakeholders and their interests. The stakeholder groups and governance structures require certain information to enable them to exercise their governance roles. In addition, funding requirements impose certain reporting requirements that universities must comply with before they receive funds from the Government.

Legislation is a necessity, although on its own, it is insufficient by itself to guarantee compliance and enforcement of good governance practices in universities. The concept of corporate citizenship recognises that public Higher Education Institutions are juristic persons that should operate responsibly. There should be a conscious effort to ensure that governance bodies consist of individuals with sound understanding of the governance role. Governance will remain hollow if the information systems and reporting systems do not provide complete, accurate, reliable and timely information to relevant stakeholders. This information needs to be easily accessible and digestible to be utilised fruitfully by the stakeholders.

Governance practices in international higher education were discussed and approaches to the application of governance were identified. Various institutions, depending on the extent of Government control, approach governance in different ways. Notwithstanding the autonomous nature of higher education institutions, good governance is imperative for their sustainability.

The chapter also provided a broad overview of the South African Higher Education landscape. Higher Education Institutions were categorised based on indicators for good governance. The National Plan for Higher Education's objectives, the National Qualifications Framework and the funding regime for public universities were discussed. The aspects that characterise the governance system of South African Higher Education include the following:

- The intended outcomes of the National Plan for Higher Education are expected to find expression in the activities and outcomes of Higher Education Institutions;
- There is a number of key stakeholders representing various interest groups that constitute the governance system of Higher Education. The various stakeholders are represented at various governance structures which include the University Senate, the Institutional Forum, the Student Representative Council, organised labour and the University Council;
- Each stakeholder group has information requirements that are peculiar and important in enhancing governance;
- Higher Education Institutions operate within certain regulatory parameters. A combination of self-regulation and compliance-based regulation contribute in promoting the ideals espoused in promulgated legislation aimed at steering and ensuring quality in the sector;
- The key Government regulatory bodies include the Department of Higher Education and Training (DHET) and Department of Science and Technology (DST), Department of Labour, the National Treasury, and the South African Qualifications Authority (SAQA);
- This regulatory environment introduces certain reporting requirements to Higher Education Institutions;
- A systematic and transparent model exists for allocating funds to Higher Education Institutions. The stringent reporting requirements through HEMIS submissions ensure that fairness and transparency are introduced in the system of fund allocation;
- Higher Education Institutions are operating in increasingly fast-changing environments wrought with risks as well as opportunities. International trends in Higher Education are pointing towards

stronger governance systems. Therefore, universities that ignore the recommendations from good governance best practices such as the King III Report do so at their own peril; and

- The approaches to institutional decision making differ slightly depending on the historical background of the Higher Education Institution in question.

There is an urgent need to pay attention to strengthening governance in South African Higher Education, especially in light of the increasing number of universities that are under administration mainly due to failures in governance. Sustainability Reporting in Higher Education is discussed in Chapter 4.

CHAPTER 4: SUSTAINABILITY REPORTING IN HIGHER EDUCATION

4.1 Introduction

The King III Report on corporate governance based on the principles of good governance, sustainability and corporate citizenship was discussed in Chapter Three. Chapter Three also discussed governance with regard to the South African Higher Education Sector. Organisations, including Higher Education Institutions, should find practical ways to demonstrate that they are applying the principle of sustainability.

Sustainability has gained importance internationally, as is indicated in United Nations publications, such as the Global Compact and Principles of Responsible Investment (IoD, 2009:11). According to the Brundtland Report, published by the United Nations World Commission on Environmental Development (WCED), sustainable development is defined as “development that meets the needs of the present without compromising the abilities of future generations to meet their own needs” (WCED, 1987:8). Organisations are increasingly being challenged by sustainable development issues and are required to account for the consequences of their activities on the environment to society (Dimitrov and Davey, 2011:86). Reporting is of help to communicate the activities of organisations.

Organisational activities and achievements should be reported from a holistic perspective and the Global Reporting Initiative (GRI)’s guidelines are cited as an example of a best practice reporting framework (Smith and Scharicz, 2011:78; Fonseca *et al.*, 2011:22). The GRI presents performance indicators from the economic, environmental, financial and social responsibility perspective (Microsoft Dynamics, 2010: 3-4).

In keeping with tenets of responsible citizenship, Higher Education Institutions should accept responsibility for what happens in their operating landscape politically, socially, economically and environmentally (Ciegis and Gineitiene, 2006:56; Dimitrov and Davey, 2011:87). In this regard, Higher Education Institutions should monitor their activities and report accordingly.

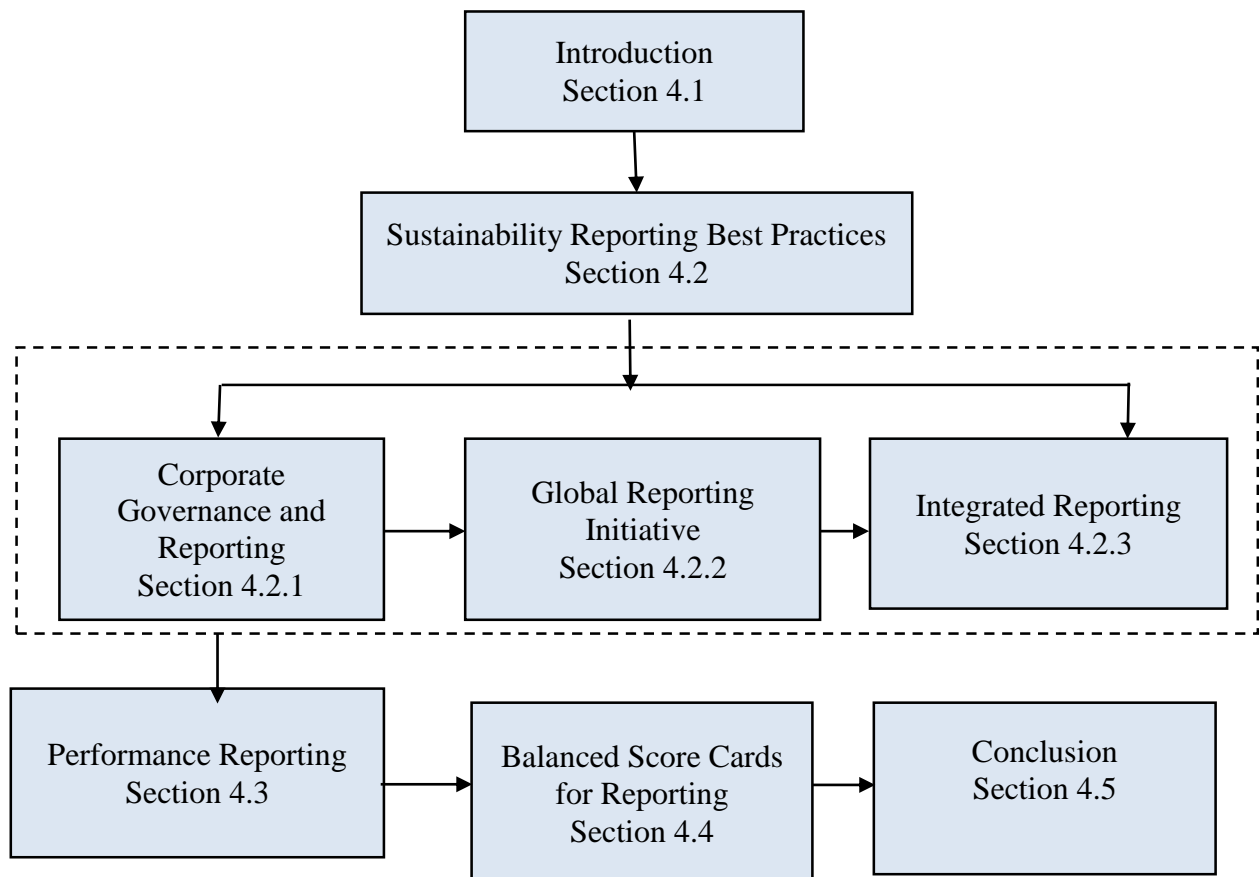
This chapter discusses Sustainability Reporting and addresses the following research objective and research questions:

RO3: To identify factors which influence Sustainability Reporting in SA Higher Education.

RQ3: Which factors influence Sustainability Reporting in SA Higher Education?

Section 4.2 discusses Sustainability Reporting best practices. This entails a discussion on reporting requirements of corporate governance, the Global Reporting Initiative (GRI) and integrated reporting. Section 4.3 discusses performance reporting while Section 4.4 introduces Balanced Score Cards for reporting. The Chapter is concluded in Section 4.5. Figure 4.1 presents the layout of the chapter.

Figure 4.1: Chapter Four outline



RO3: To identify factors which influence Sustainability Reporting in SA Higher Education.
RQ3: Which factors influence Sustainability Reporting in SA Higher Education?

4.2 Sustainability Reporting Best Practices

Organisations produce different types of reports for various purposes. From an initial focus on environmental stewardship, steered by special interest groups, Sustainability Reporting is now prominent on the global agenda. Milne and Gray (2008:60) observe that fewer than 100 companies worldwide reported on sustainability before 1993. However, there has been a significant increase, subsequently, in the number of companies issuing sustainability reports although the preponderance seems to be in big industries. In addition, less than 0.5% of multinationals issue reliable reports based on internationally recognised sustainability standards (Hubbard, 2009:178; Lozano, 2011:100).

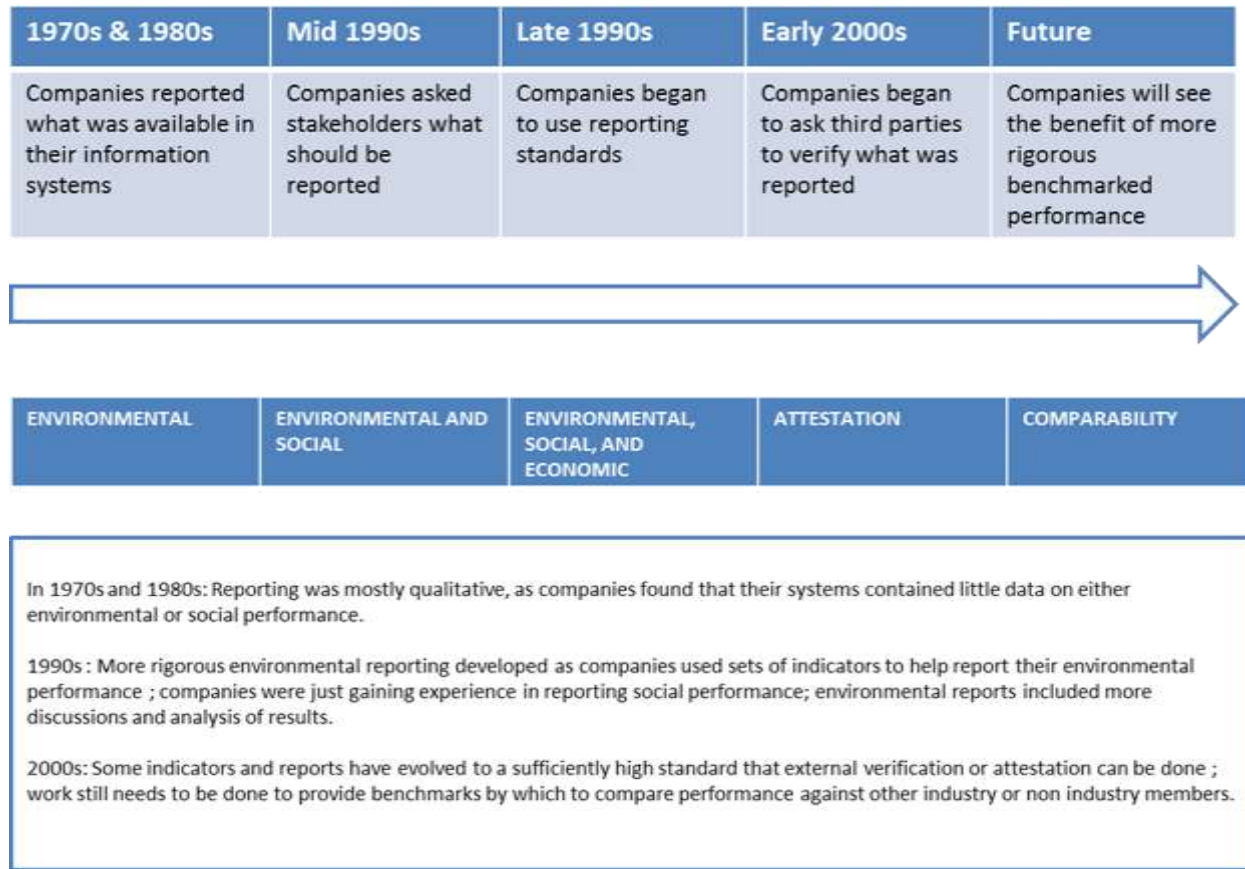
A survey on sustainability indicates growth in Sustainability Reporting adoption (KPMG, 2011:6). The survey's findings indicated the following:

- 95% of the 250 largest global companies report on sustainability;
- The highest reporting rates are associated with European organisations although North America and emerging markets continue to register phenomenal growth;
- The rate of adoption of reporting varies across economic sectors; and
- Publicly traded companies outperform family-type organisations in embracing Sustainability Reporting.

The large number of corporate failures in the last decade have prompted questions about the adequacy and relevance of traditional financial reports (Chen, 2011:86; Hazelton and Haigh, 2010:160; IoD, 2009:9). Organisations have traditionally relied on financial reports to assess performance. However, today, stakeholders are increasingly demanding information regarding the performance of organisations - from various dimensions - in order to make informed assessments (Herzig and Godemann, 2010:1065; IoD, 2009:11). For example, the United Nations Environmental Programme (UNEP) encourages organisations to demonstrate environmental awareness through their reporting and as a result Corporate Environmental Reports (CERs) are being upgraded to Corporate Sustainability Reports (CSRs) by some organisations (Hedberg and Malmborg, 2003:154). Organisational reporting has matured in response to changing reporting requirements of stakeholders.

The scope of organisational reporting continues to expand with increasing numbers of stakeholders requiring reports. A number of factors have contributed to the evolution of reporting by organisations. Figure 4.2 outlines the salient characteristics of each era of reporting.

Figure 4.2: Progress towards Sustainability Reporting



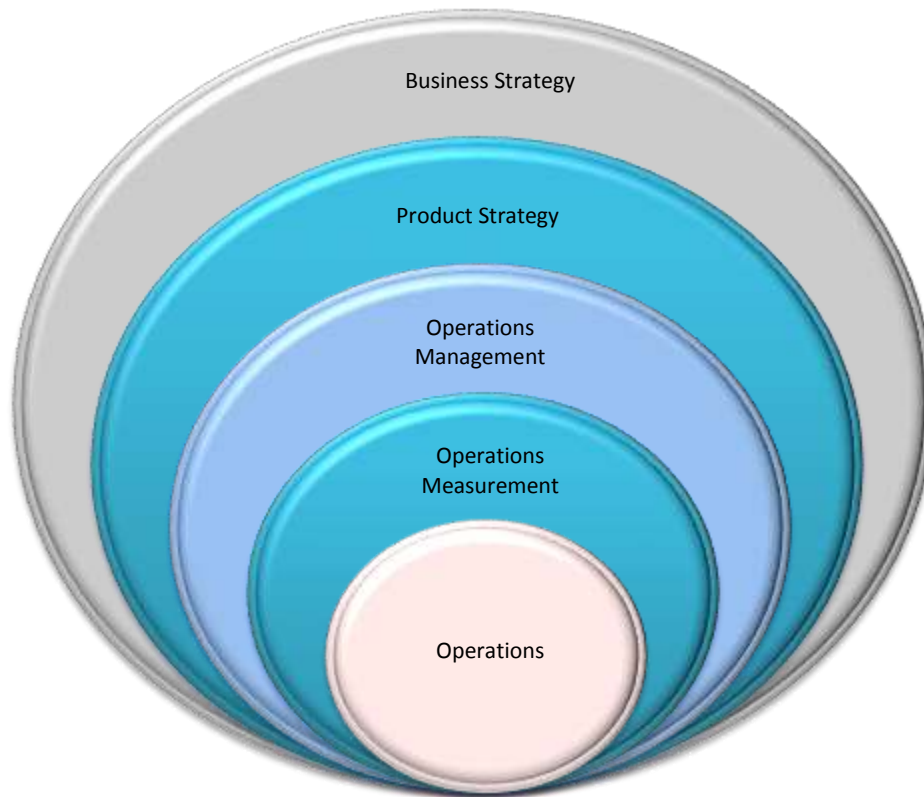
Source: Herremans and Herschovis (2006:21).

Figure 4.2 shows the stages in the evolution of organisational reporting and the increase in scope and complexity of reporting. Herremans and Herschovis (2006: 21) state that the era of the 1970s and 1980s could be described as voluntary reporting. As stakeholders became more curious and involved in organisational operations, the 1990s witnessed growth in demand for information and performance indicators. The period 2000 to date has been characterised with a focus on auditing sustainability reports and improvements in global and national reporting standards. It should, however, be noted that reporting maturity varies across organisations.

Factors such as the level of sophistication of an organisation’s information systems, increasing demand for information by stakeholders and availability of reporting standards play a role in promoting organisational reporting. In addition, the role of professional bodies such as auditors in attesting to the reliability of reported information as well as the growing recognition of the importance of holistic reporting by organisations also contributes to emphasising Sustainability Reporting.

The level of maturity in reporting can also vary from one organisation to the next. Figure 4.3 shows the maturation model of corporate sustainability.

Figure 4.3: Maturation model for Corporate Sustainability



Source: Microsoft Dynamics (2010:9)

Figure 4.3 shows the phases in the maturity of Sustainability Reporting in organisations. At the base level, organisations report merely to comply with requirements. This is the phase of ‘ticking the boxes’. The second phase (operations measurement) is characterised by organisations linking metrics to aspects that are measured. This phase strengthens reporting as deviations from expected benchmarks become apparent. The third phase (operations management) is distinguishable in that operations are managed with reliance on that which is reported and measured. The fourth phase is characterised by the alignment of a product’s strategy with reporting requirements and practices. Ultimately, when the final phase in reporting becomes institutionalised and is holistic, reporting is aligned to organisational strategy.

The importance of monitoring progress made in implementing an organisation’s strategy was underscored in Chapter 2. The adoption of corporate governance best practice has given impetus to

Sustainability Reporting practices. Internationally, the Global Reporting Initiative (GRI) has emerged as a generic global benchmark for reporting on sustainability (Dumay, Guthrie and Farneti, 2010:536). In South Africa, the King III Report on corporate governance has given impetus to the adoption of Sustainability Reporting (IoD, 2009:10).

According to Microsoft's Environmental Sustainability White Paper (Microsoft Dynamics, 2010:5-6), pressure from regulatory bodies and the media, coupled with more rigorous investment criteria that include sustainability, have contributed to accelerating the need for Sustainability Reporting solutions. The Microsoft White Paper (Microsoft Dynamics, 2010) also alludes to the urge by organisations to enhance their reputation and public standing by adopting Sustainability Reporting practices.

Petrini and Pozzebon (2009:180) state that principles, norms and certifications aimed at directing corporate actions have emerged as a consequence of the evolution of Corporate Social Responsibility (CSR). At the global level, the pressure to adopt Sustainability Reporting has been given a boost by a number of generally accepted indicators that are championed by certain organisations and special interest groups (Tenuta, 2010:163-171).

Table 4.1 provides evidence that sustainability has been placed on the global agenda as exemplified by the global indicators used to measure aspects of sustainability. The combined efforts from special interest groups and recognised world bodies promise to create more awareness of sustainability issues. However, the risk of a fragmented approach to Sustainability Reporting looms large in the absence of global standards. Harmonising the international reporting standards across geo-political regions will go a long way to support Sustainability Reporting (Chen, 2011:95; Smith and Scharicz, 2011:79).

Table 4.1: Examples of Sustainability Reporting indicators

Indicator	Description
The Human Development Index (HDI)	<ul style="list-style-type: none"> The HDI is a United Nations benchmark that rates countries on developmental metrics such as longevity, living standards and education levels.
Millennium Development Goals (MDGs)	<ul style="list-style-type: none"> The MDGs are a set of eight developmental objectives that United Nations member States committed to attain by 2015. Reporting on progress on the attainment of MDGs contributes to Sustainability Reporting at the global level. The World Bank uses the world development indicator which is a database for measuring the attainment of millennium development goals.
The Dashboard	<ul style="list-style-type: none"> The United Nations Commission for sustainable development. The Sustainable Development indicator (SDI) serves as a benchmark.
Driving Forces Pressures, States, Impacts and Responses (DPSIR)	<ul style="list-style-type: none"> This oversight mechanism was developed by the OECD with a focus on repercussions to the environment.
The Monet project	<ul style="list-style-type: none"> Monet is a project by Switzerland to monitor sustainable development.
United Nations Conference on Sustainable Development (UNCSD)	<ul style="list-style-type: none"> This is a model based on themes and sub-themes focusing on social, environmental, economic and institutional pillars.

Source: Summarised from Tenuta (2010:163-171)

4.2.1 Corporate Governance and Reporting

Corporate governance is anchored on the principle that there is a positive relationship between good governance and compliance with the Law. In South Africa, for example, under the Promotion of Access to Information Act (PAIA), stakeholders have certain rights to company information (RSA, 2000). In addition, without the intention to stifle innovation, the King III Report has adopted an ‘apply or explain’ and not ‘comply or else’ approach with regard to disclosure of information (IoD, 2009:6-8). It stands to reason that the level of reporting detail may vary from one organisation to the next and that sensitive and privileged information should be safeguarded to minimise risks. The disclosed information should be accessible to its intended audience.

Coope (2004:20-21) states that corporate reporting material is not easily accessible in some organisations. In fact, some of the organisations that provide reports do so mainly for compliance purposes and the material is not accessible online. The perennial challenge of limited resources has been cited as a major contributing factor for the lack of dynamic online corporate reports. However, the Sustainability Reporting landscape is fast changing in some countries. For example, in the UK and the USA, the publishing of information on social, ethical and environmental risk management is now mandatory (IoD, 2009:11). In South Africa, companies listed on the Johannesburg Stock Exchange (JSE) are finding disclosure of non-financial information a key to retaining healthy share values (Coope, 2004). In addition to the JSE's Social Reporting Index (SRI), launched in 2004, the Government, through the Ministry of Environmental Affairs and Tourism, has been exploring a legislative, regulatory and financial package aimed at having a positive impact on Sustainability Reporting (IoD, 2009:12).

The traditional report that focused mainly on financial data is proving to be inadequate as information on all aspects of an organisation's life needs to be disclosed comprehensively (Herzig and Godemann, 2010:1065; Lozano, 2011:99). However, Eccles (2004:10-12) cautions that merely 'ticking governance boxes' will not improve corporate governance. The reporting needs of all stakeholders should be kept in mind in designing organisational reports. A narrow focus on financial aspects for reporting has proven to be inadequate for governance purposes. Increased accountability and transparency demand more than financial reports from organisations. The reporting gaps account for the upsurge in global demand for comprehensive reports on sustainability. The following examples are cited in the King III Report (IoD, 2009:11):

- The Swedish Government demands that companies owned by the Government follow the GRI guidelines;
- The UK Company's Act and subsequent reforms require a long-term view of corporate social responsibility to be taken by Directors;
- In Germany, the German Commercial Code requires management reports to include non-financial performance;
- In Norway, in 2009, a White Paper on Corporate Social Responsibility and how GRI G3 guidelines can be used was launched; and
- Since 2008, companies are mandated to disclose CSR activities in Denmark.

Insenmann, Bey and Welter (2007:487-496) state that the origins of corporate Sustainability Reporting can be traced to environmental and non-financial reporting. The 'honeymoon' period of voluntary disclosure is over as is evident with the growing trend of companies practising Sustainability Reporting. Insenmann, Bey and Welter (2007), however, warn that Sustainability Reporting has to deal with limitations such as its voluntary status, definition languages, complexity and the emergence of competing frameworks, guidelines and indices. A need exists for organisations across all sectors, including Higher Education, to produce sustainability reports that cover all aspects that are key to their continued existence. This goes a long way in supporting risk identification and management.

The management of risk has also contributed to the growing importance of Sustainability Reporting. Merkel and Litten (2007:21) state that since sustainability is about balance and risk reduction, Higher Education Institutions are encouraged to report using financial data (income and expenditure), educational data (degrees granted and research) social data (enrolments) and economic data (impacts). Unfortunately, the focus on environmental data, is lacking and this scenario explains why there could be a growing agitation to include environmental disclosures in sustainability reports. According to Chen and Wongsurawat (2011:49), holistic organisational reporting can be aided by best practices in Sustainability Reporting such as the GRI G4 template espoused by the Global Reporting Initiative (GRI).

4.2.2 Global Reporting Initiative (GRI)

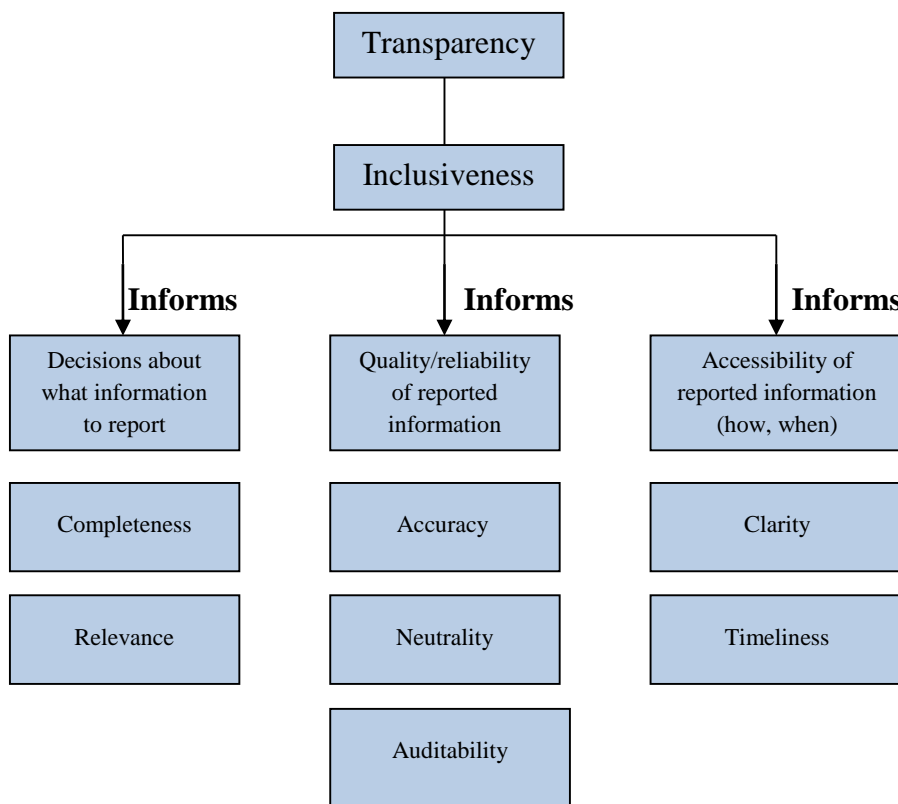
Despite the growing importance of Sustainability Reporting, there remains the challenge of developing and adopting a standard that is generally accepted and embraced across country and sector. The Global Reporting Initiative (GRI), an independent entity, seeks to address this challenge by providing a comprehensive guideline on reporting on most key aspects of an organisation's life (GRI, 2005:7-8). The GRI guidelines have operated since 2000 and they are designed to meet information requirements of a diverse range of stakeholder groups (Fassin, 2009:114-115).

Herremans and Herschovis (2006:20-22) attest to the sophistication of Sustainability Reporting guidelines developed by the GRI. The GRI guidelines are founded on principles such as transparency; inclusiveness and stakeholder engagement; auditability; completeness; relevance; accuracy; comparability; clarity and timeliness. In addition, the GRI report comprises the following key sections: vision and strategy, organisational profile, governance structure and management systems, GRI context and performance indicators. Herremans and Herschovis (2006) also cite Dowling and Pfeffer's

Legitimacy Theory that implicitly confers the role of stewardship over societal resources to corporations. Therefore, a high degree of social responsibility is expected of corporations.

The principles that underpin the GRI include transparency and inclusiveness. Aspects of information such as what information to report, the quality and reliability of the reports and accessibility to the reported information contribute to the adoption of a culture of increased awareness and reporting. Figure 4.4 illustrates the point.

Figure 4.4: GRI Sustainability Guideline’s Reporting Principles



Source: GRI (2005:9)

Vormedal and Ruud (2009:208-209) observe that Company Boards are increasingly accepting the notion that organisations are accountable to other stakeholders beyond shareholders. This argument supports the principles of legitimacy theory (Dowling and Pfeffer, 1975:122) and stakeholder theory (Donaldson and Preston, 1995). Dumay, Guthrie and Farneti (2010:534) tabulate the three main approaches to social and environmental accounting summarised in the Table 4.2.

Table 4.2: Approaches to social and environmental accounting

Approach	Comment
1 Managerialist	Assumes that there are no conflicts between environmental and economic information.
2 Triple bottom line (TBL)	Calls for reform in social and economic terms.
3 Ecological and Eco-Justice	Should be established whether the organisation acts as socially sustainable or not.

Source: Dumay Guthrie and Farneti (2010:534)

Table 4.2 describes three approaches to social and environmental accounting. The managerialist approach tends to obscure important environmental and economic information and therefore should be avoided. The Triple Bottom Line (TBL) approach places emphasis on economic, environmental and social dimensions on reporting as originally envisaged by Elkington (1998:ix). The ecological and eco-justice approach introduces the regulatory perspective to sustainability. There is need to expand the scope of reporting to include economic, environmental and social aspects of an organisation's life. A balanced view of the organisation is made possible with the inclusion of these three perspectives (Lozano and Huisingh, 2011:100).

The GRI sector supplement for Public Agencies (GRI, 2005:7-8) states: "Public agencies have a civic responsibility to properly manage public goods, resources and facilities, in a way that supports sustainable development objectives and promotes the public interest". Dumay, Guthrie and Farneti (2010:533-536) add that in addition to this supplement for public sector organisations, the GRI, under the auspices of the European Union, is busy developing a guideline for third sector organisations. Research on social and environmental reporting mainly focused on the private sector for profit organisations and therefore resulted in a reporting gap for public sector organisations such as most of the Higher Education Institutions.

As was discussed in Chapter 3, public Higher Education is established to serve the common good of society and therefore Higher Education Institutions should not only educate society about the importance of sustainability but also demonstrate sustainability practices in their operations. To this end, universities should lead by example by putting into practice the sound principles of Sustainability Reporting. The stakeholders in Higher Education have a legitimate claim on information about the operations of universities – especially those funded from public coffers.

Van den Brink and Van der Woerd (2004:190-191) observe that sustainability is shifting to sectors considered to have significant environmental impacts and that the existing standards for social and environmental management closely relate to principles that underpin quality management. Examples include the European Eco-Management and Audit Scheme (EMAS), the International Standard for Environmental Management (ISO14001), the Social Accountability Standard (SA8000) and Investors in People (IP). The GRI and AA100 are examples of standards for measuring, managing and communicating overall sustainability performance from the three perspectives – social, environmental and economic. The AA100 standard is process oriented and serves to complement the GRI.

The G4 is the most recent GRI Sustainability Reporting guideline and it offers reporting principles, standard disclosures and an implementation manual for the preparation of sustainability reports by organisations (GRI, 2013). G4 introduces materiality and narrows the reporting focus to what is important to an organisation and its stakeholders. G4 reports focus on sustainability impacts that really matter and are aligned to other widely used reporting frameworks such as the OECD guidelines for multinational enterprises, the United Nations Global Compact's Ten Principles and the United Nations Guidelines on Business and Human Rights. Subscribing organisations have until December 2015 for the transition from G3 reporting guidelines to the new G4 guidelines. Sector specific guidelines are continuously being prepared.

Sustainability Reporting should be embraced by sectors with seemingly less environmental impact. The determination of the extent of environmental impact can only be objectively ascertained once organisations, across all sectors, embark on Sustainability Reporting. To that end, the customisation of existing standards to accommodate sectoral nuances will provide a good start. Sustainability Reporting will have a profound impact on how businesses operate and interact with stakeholders.

Higher Education Institutions should assume leadership in sustainability and at the same time act as drivers of change towards a sustainable world as envisaged through declarations, charters and partnerships for sustainable development (Lozano, Lukman, Huisinigh and Lambrechts, 2011:2). In light of the mandate of Higher Education, Stephens and Graham (2010:611) call on Higher Education Institutions to take a lead in the transition to a more sustainable society by adopting sustainability practices – including reporting. Lozano (2006:70) states that GRI guidelines need to be adapted to suit Higher Education as shown in the customised GRI guidelines in Table 4.3.

Table 4.3: The modified GRI for Higher Education

Category	Aspect
Economic Direct Economic impacts	Customers, suppliers, employees, providers of capital, public sector
Environmental Environmental	Materials, energy, water, biodiversity, emissions, effluents and waste, suppliers, products and services, compliance, transport, overall
Social Labour practices and decent work	Employment, labour/management relations, health and safety, training and education, diversity and opportunity, strategy and management
Human Rights	Non-discrimination, freedom of association and collective bargaining, child labour, forced and compulsory labour, disciplinary practices, security practices, Indigenous rights
Society	Community, bribery and corruption, political contributions, competition and pricing
Product responsibility	Customer health and safety, products and services, advertising, respect for privacy
Educational Curriculum	SD incorporation into curriculum, SD capacity building, SD monitoring in curricula, administrative support
Research	Research in general, grants, publications and products, programmes and centres
Service	Service learning

Source: Lozano (2006:70)

Table 4.3 presents aspects of reporting in Higher Education that are aligned to the GRI Sustainability Reporting guidelines. Higher Education Institutions that adopt Sustainability Reporting guidelines will invariably report on the economic, environmental, social and educational aspects of their operations. The modified GRI provides a good template for institutions to adapt, depending on the availability of information. Lozano *et al.* (2011:3) identify the following sustainability development themes as affecting Higher Education the most:

- Focus on environmental degradation;
- Ethical or moral obligation for universities to work towards sustainable societies, including an inter-generational perspective;
- Inclusion of sustainable development in the curricula;
- Encouraging research on sustainability;
- Shift towards more sustainability orientated university operations;

- Collaboration on sustainability with other universities;
- Collaboration and outreach with other stakeholders; and
- Trans-disciplinarily across the previous points.

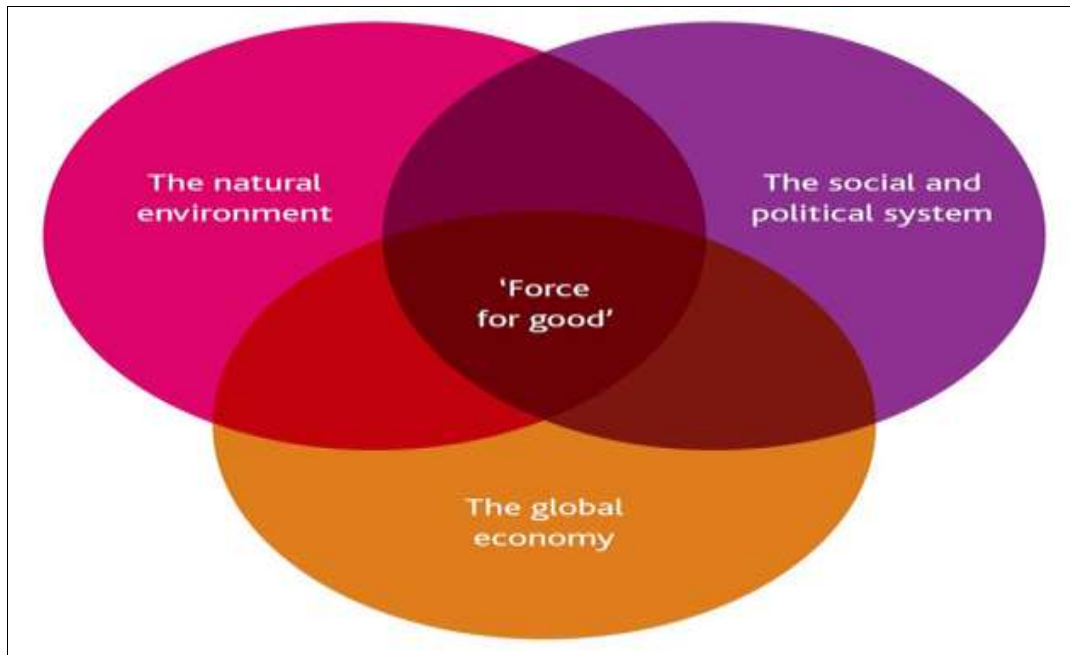
The customisation of the GRI to suit Higher Education by Lozano (2006:70) is testimony that with some effort, institutions can adopt available reporting best practices and report in an integrated way.

4.2.3 Integrated Reporting

In keeping with international best practice on sustainability, the King III Report places a premium on Sustainability Reporting. The King III Report observes that sustainability should transcend reporting on sustainability and focus on integrated performance. This requires the Board to ensure that the organisation achieves short- and long-term integrated performance goals (IoD, 2009:12-13).

Integrated reporting, a subset of Sustainability Reporting, encompasses a company's finances and its sustainability and may take the form of one or more reports – all presented at the same time. The integrated report should contextualise the financial report and touch on the achievements and failures in meeting strategic objectives. The report places the responsibility of overseeing integrated reporting on the Audit Committee which should assist the Board with disclosure on sustainability and at times provide assurance on the integrity of the information required (IoD, 2009:108-109). Overall, integrated reporting could be viewed from three perspectives – the global economy, social and political systems and the environment. Sadler and Smart (2010:4) refer to the confluence of these three major forces as the triple context. They argue that sustainability straddles the three areas as depicted in Figure 4.5.

Figure 4.5: The Triple Context



Source: Sadler and Smart (2010:4)

A balanced report is only possible if reporting intersects in the 'force for good'. The idea of 'one report' serves to integrate financial and non-financial information. Sadler and Smart (2010:4) add that the use of the one report highlights the relationship between financial and non-financial performance which results in improved information. The 'one report', they argue, coupled by corporate sincerity and commitment to sustainability is pivotal in improving reporting.

Eccles and Armbruster (2011:13-14) define integrated reporting as a "holistic and integrated representation of an organisation's performance from a financial and sustainability perspective". Integrated reporting, they add, seeks to give answers to questions such as energy consumption, cost of production, corporate governance and reputational risk, stakeholder satisfaction, service and link to shared values. Eccles and Armbruster further advise that the International Integrated Reporting Committee (IIRC) was formed in August 2010 with a mandate to develop a globally acceptable framework for accounting for sustainability and that in the same year, 160 companies produced integrated reports using the GRI's G3 guidelines. The fact that these companies had diverse backgrounds, is testimony to the comprehensiveness of the GRI guidelines. Organisations are expected to make the transition to the recently released G4 reporting guidelines.

In a survey of South African organisations, Hamann and Sonnenberg (2006:311-316) show that a limited number of South African companies report according to GRI guidelines although a majority of those surveyed stated their commitment to complying with expectations of the King III Report on corporate governance. In addition, Hamann and Sonnenberg (2006) further state that South African companies tend to report on sustainability in an aspirational, anecdotal and episodic manner as a result of the lack of regulatory enforcement. This trend implies that many organisations have not fully embraced integrated reporting as a result of various factors such as lack of awareness of the benefits associated with integrated reporting, lack of capacity to report or gaps in the financial systems that generate reporting data.

In an attempt to understand the reasons for limited integrated reporting by organisations, Aras and Crowther (2008:5) attribute fear of losing competitive advantage to the often cited resistance to full disclosure by companies. On his part, Coope (2004:21) blames limited resources for the lack of dynamic corporate responsibility reporting. Smaller companies are mainly affected. Pennington and Moore (2010:28-31) take a broader view and attribute a slow start to factors such as the voluntary nature of Sustainability Reporting, lack of comparability of data across sectors, generalisation of skewed reports, lack of prioritisation of integrated reporting and absence of generally accepted accounting and auditing standards.

These factors are similar to the issues associated with the ranking of universities across the globe as described in detail in Section 2.5 of Chapter 2. Performance management in Higher Education can be an intriguing phenomenon. Sarrico *et al.* (2010:48-51) cite the challenges experienced in Europe in this regard - data for performance measurement is sometimes non-existent, unavailable or too onerous to collect and collate – a problem compounded by the erroneous and common practice of using micro performance indicators to measure institutional (macro) goals and objectives.

Integrated reporting is associated with certain benefits. Studies focusing on the private sector indicate that sustainability is becoming an important criterion for making investment decisions (Lackmann, Ernstberger and Stich, 2011:111). Eccles and Armbrester (2011:15) point out that companies adopt integrated reporting due to perceived internal benefits, external market benefits and as a way of managing regulatory risk. However, they caution organisations to beware of the impact of changes on the technology profile and the trend towards integration of financial and non-financial information. The

emergence of cloud computing, for example, is seen as presenting opportunities for the rapid and broad adoption of integrated reporting.

Hedberg and Malmberg (2003:154) state that companies produce Corporate Environmental Reports (CERs) and Corporate Social Responsibility Reports (CSRs) to report to the financiers, legitimise their operations and look after the corporate brand. Some organisations adopt the GRI guidelines in a bid to lend credibility to their report. This view is shared by Suchman (1995:574-576) by stating that disclosure of sustainability information influences how organisations relate to their stakeholders. Suchman further cites Legitimacy Theory as a basis upon which organisations voluntarily disclose social and environmental information.

Notwithstanding the above, integrated reporting presents a variety of benefits to organisations. Stakeholders are informed, Management and other governance structures are empowered to perform their respective roles and transparency and accountability are boosted. It should be borne in mind that corporate failures largely served to catalyse the increased focus on integrated reporting. With its wide array of stakeholders, Higher Education should seize the opportunities presented by Sustainability Reporting in meeting the requirements of reporting to stakeholders. Sustainability Reporting and especially integrated reporting is at its nascent stage and benefits associated with early adoption remain to accrue to organisations that seize the opportunity. Organisations, however, should address, and where possible overcome, the challenges associated with Sustainability Reporting before reaping its full benefits.

Tenuta (2010:163) avers that the sustainability report is the most operative tool for organisations to communicate with stakeholders. A lack of standards and generally accepted reporting metrics undermine communication. This point is supported by Van den Brink and Van der Woerd (2004:188) who state that in order to benchmark sustainability performance, there is need for industry-specific benchmarks and formats. The use of prescribed standards and formats will lend more credibility to Sustainability Reporting and allay fears expressed by Lackmann, Ernestberger and Stich (2012:113) that most of the sustainability reports are often in qualitative format and therefore of limited use for purposes of financial decision making.

The benefits associated with Sustainability Reporting include better information for stakeholders, improved organisational image and better risk management. In light of its newness, the multiplicity of

standards and supporting information systems may slow the rate of adoption of sustainability reports. The self-reinforcing benefits of Sustainability Reporting demonstrate the linkages between social, economic and environmental aspects of reporting. The linkages are well articulated by Petrini and Pozzebon (2009:180) who state that whereas environmental and social sustainability contribute to economic sustainability, environmental and social sustainability contributes to environmental quality. In addition, social justice and equity are a result of linkages to environmental and economic sustainability.

Certain elements are essential in reinforcing the linkages between the three aspects of sustainability – economic, social and environment. According to Smith and Sharicz (2011:75-80), some of the elements identified include:

- Governance;
- Supportive leadership;
- Development of a business plan;
- Measuring and reporting;
- Promoting organisational learning;
- Organisational culture; and
- Information systems.

The discussion above has provided a background to the importance of Sustainability Reporting to organisations. Best practice in Sustainability Reporting places emphasis on comprehensive reporting. All sectors – including Higher Education - will do well to embed Sustainability Reporting in their processes. Sustainability reports will ensure that institutional reports are integrated and that a balanced view is provided to readers. Established reporting models can be tested for their application in the Higher Education Sector. The introduction of a culture of regular, balanced and integrated reporting is a good starting point.

Table 4.4 provides a summary of factors that have a bearing on the ease with which organisations, including Higher Education Institutions, can introduce Sustainability Reporting.

Table 4.4: Summary of factors that influence Sustainability Reporting in organisations

No.	Factors influencing Sustainability Reporting in organisations
1	Global Sustainability Reporting best practices, guidelines, norms and certifications
2	Changes in the regulatory environment
3	Recommendations from oversight bodies such as auditors and verification of reported information by third parties
4	Increased awareness of reporting requirements for responsible corporate citizenship
5	Advocacy role of special interest groups such as the media and pressure from regulatory bodies
6	Increase in the scope of reporting in line with information requirements from various stakeholders
7	Expectations of positive spin offs such as risk management, improved image, effective communication with stakeholders, keeping up with reporting trends and ability to attract staff and students
8	Improvement in quality of reporting as a result of increased scope and complexity of reporting
9	Use of sector-specific standards and reporting metrics
10	The combined voluntary and compliance aspects of Sustainability Reporting
11	Awareness of and training on Sustainability Reporting best practice
12	Level of sophistication of an organisation’s information systems to integrate information for ease of reporting
13	Level of maturity in an organisation’s reporting capability
14	Integrated approach to planning, monitoring and evaluation
15	Strengthened corporate governance with emphasis on risk management
16	Ease of customisation of global recognised reporting templates such as the GRI

4.3 Performance Reporting

Performance reporting in organisations is a precursor to Sustainability Reporting. The focus on performance reporting has also evolved over time. From an initial focus on shareholder value and the bottom line, reporting focus shifted to address tenets espoused in stakeholder theory. Stakeholder theory states that organisations exist to create maximum value for their stakeholders (Hubbard, 2009:178). The Balanced Score Card (BSC) that was discussed in Figure 2.5 introduced new perspectives in reporting. The BSC has been succeeded and supplemented by a focus on the triple bottom line and now on Sustainability Reporting. Table 4.5 provides a summary of the evolution of performance reporting.

Table 4.5: Evolution of performance reporting

Performance reporting focus	Description
Shareholder value to stakeholder theory	This is characterised by a shift from focusing on one category of stakeholders (shareholders) to all who are affected and impacted by the operations of the organisation
Stakeholder theory – The balanced score card	The Balanced Score Card is based on the need to report to stakeholders. Four perspectives are adopted to identify what to include in the report
Stakeholder theory – The triple bottom line	Premised on the principle that stakeholders go beyond those direct transactional relationships that an organisation has. The organisations responsibilities address Economic, Social and Environmental dimensions of performance management
Stakeholder theory – Towards sustainability	The emergence of a focus on sustainable development as a global theme

Source: Hubbard (2009: 178-181)

The history of performance reporting that has led to Sustainability Reporting shown in Table 4.5 is based on efforts to improve reporting in organisations. Sustainability Reporting is the focus in the present milieu. Notable strides have been made towards introducing Sustainability Reporting globally as is evident in the emerging standards and benchmarks. Pojasek (2009:85-86) points out that sustainability is all about making continuous improvement and points out that defects in corporate Sustainability Reporting and lack of generally accepted Sustainability Reporting standards has resulted in major risks not being addressed. In order to ameliorate such risks, reporting with a Business Excellence Framework is proposed. The three step reporting framework covers the organisational sustainability profile, sustainability performance and sustainability results.

Pennington and Moore (2010:25-28) observe the emergence of a number of reporting standards, indices and ratings, in response to pressure for Sustainability Reporting. Examples of these include Dow Jones sustainability index, FTSE4 good, KLD400 and the Fortune Corporate Reputation Index. They decry the lack of completeness, transparency, veracity and usefulness of the data that organisations report on. However, they note that companies listed on the South Africa's Johannesburg Stock Exchange (JSE) are required to adhere to strict guidelines on reporting. Hamann and Sonnenberg

(2006:317-319) note that the JSE Social Responsibility Index (SRI) that complements the King III Report on corporate governance was launched in 2004 and point out that the JSE SRI is the first in Sub-Saharan Africa and with its implementation, greater awareness will be created.

Sustainability reporting standards should be based on widely accepted principles. For example, in pursuit of openness, a key virtue of sustainability, organisations ought to communicate their actions or commitments using generally accepted standards as such GRI's Sustainability Reporting guidelines and ISO series (Chen, 2011:87; Gobbels and Jonker, 2003). In this way, organisations practically demonstrate that they live the values that they espouse. Van den Brink and Van der Woerd (2004:188) call for a sustainability benchmarking approach that is within the confines of the European Corporate Sustainability Framework (ECSF) principles. Yongvanich and Guthrie (2006:312) describe the various available Sustainability Reporting templates as shown in Table 4.6.

Table 4.6: Examples of sustainability reporting templates

Reporting template	Description/focus
Balanced scorecard	<ul style="list-style-type: none"> • Four perspectives (internal, financial, learning and growth, and customer)
Bookings Institute	<ul style="list-style-type: none"> • Value of intangibles, e.g. Lev's value chain scoreboard • Quantitative standardised and relevant measures
GRI	<ul style="list-style-type: none"> • Vision and strategy, Profile, Governance structure' Performance indicators
Hermes principles	<ul style="list-style-type: none"> • General requirement about disclosure of WACC and ability to deliver returns ahead of WACC and cash-based reporting
Inside Out	<ul style="list-style-type: none"> • Company ambitions, Strategic direction, Description of strategic decision-making process, Preferred measures, Key drivers of value, Measures of performance appropriate to the business
Jenkins report	<ul style="list-style-type: none"> • Forward-looking information including non-financial measures, e.g. patents, trademarks
Tomorrow's company	<ul style="list-style-type: none"> • Financial report • Value chain report (information on customer satisfaction, etc.) • A people document (information on skill level and knowledge bank) • Sustainability document (community and environmental impacts)
Value dynamics	<ul style="list-style-type: none"> • Better disclosure of intangible assets • 54 boxes showing different kinds of asset-related information
Value reporting	<ul style="list-style-type: none"> • Moving beyond the earnings game
21 st century annual report	<ul style="list-style-type: none"> • Framework based • Forward-looking and better financial information and on risks

Source: Yongvanich and Guthrie (2006:312).

Table 4.6 contains examples of templates that organisations could use in efforts to entrench a culture of Sustainability Reporting. The common theme is that a narrow focus on traditional financial management reporting is not sufficient to satisfy the information reporting requirements of stakeholders. It is for that reason that there has been a push towards holistic reporting that covers all aspects in an organisation’s performance. Organisations, however, should carefully choose reporting templates that are easily customisable to accommodate sector-specific reporting nuances.

In the Higher Education Sector, Sustainability Reporting practices should be preceded by an evaluation of available reporting tools. In this regard, Lozano (2006:965) evaluated a number of Sustainability Reporting tools for their suitability for Higher Education. Table 4.7 provides a summary of the evaluated tools and comments thereto.

Table 4.7: A comparison of sustainability tools for Higher Education

Sustainability Reporting Tool	Comments
The Global Reporting Initiative	Some of the elements of the reporting system are useful, but most are not applicable to a campus. One campus has used this method with much difficulty, but there is potential to adapt it to meet the needs of the Higher Education Sector
The ISO 14 000 Series	Misses social elements. It is more relevant for industry and business which want to be compliant with standards. Quite cost-prohibitive and labour-intensive. Some campuses are using it
The OECD Guidelines for Multinationals	Not really useful. Some elements dealing with labour standards, human rights, health and safety could be drawn into a different tool, but it is oriented to a corporate audience
The Triple Bottom Line	Could be useful for campus management, as they are increasingly forced to make decisions based on bottom-lines. It is likely to be human and financially resource intensive for a campus
The Natural Step	Could be useful for a campus, although in it does not offer very much to work from
The Ecological Footprint	Somewhat useful for campuses (and some campuses have used this tool). Does not address all issues of sustainability (lacking in social economic dimensions.) Quite complex

Table 4.7: A comparison of sustainability tools for Higher Education (continued)

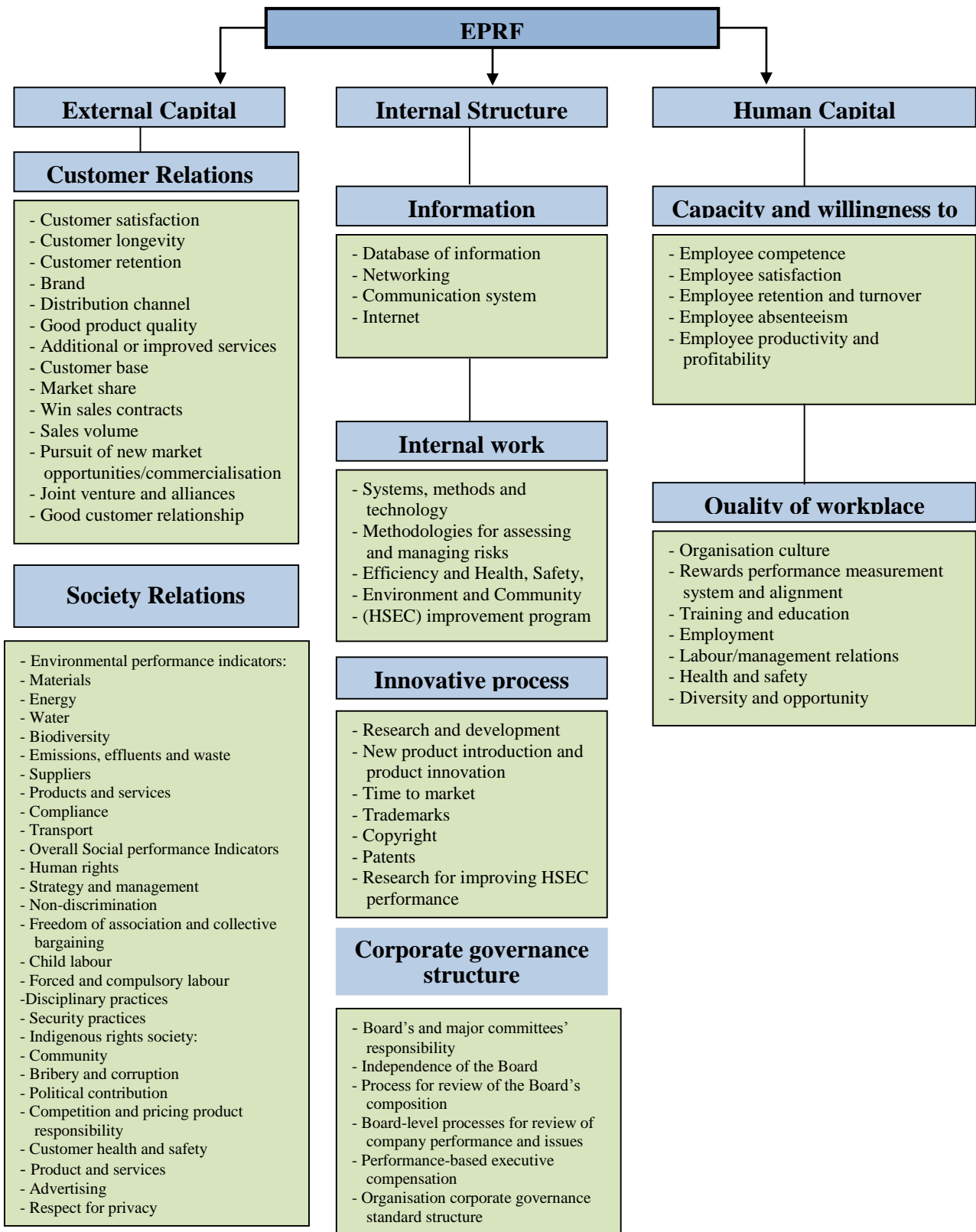
The Compass of Sustainability	Useful for specific campuses wanting to build community, and work from the bottom-up. Not really useful for a standardised national campus sustainability framework – the scale is too large for participatory design and use of the tool
Local Agenda 21	Offers some interesting ideas to sustainable campus work. Many of the indicators are not relevant to a campus, but methods and participatory approaches are useful
National Round Table on Environment and Economy	Useful for campuses in that it speaks in an economic language. Does not reflect values of sustainability well
UN Commission on Sustainable Development, Dashboard of Sustainability	Not really appropriate for use at other scales or organisational types. Dashboard is based on the UN Commission on Sustainable Development indicators, but is a more user friendly and accessible tool. It can be manipulated to include different data sets on different indicators, and thus may be appropriate for campus application
Other UN Reports, including GEO, HDI	Too high level for the campus context. Issues of concern in these reports are quite different than for a campus – especially the human development measures
Genuine Progress Index	Not very useful for a campus as it is focused quite specifically on a system for national accounts. New accounting techniques would be quite complex for a campus to undertake

Source: Lozano (2006:965).

Table 4.7 presents available Sustainability Reporting tools available to Higher Education Institutions. Identified shortcomings of each tool are highlighted. There is not one that is specifically tailor-made for universities and therefore a best of breed could be developed. Gandey (2012:369) also concludes that in order to promote sustainability, careful selection of a reporting tool should be done to suit each organisation.

Due to the existing gap between organisational reporting requirements and the reporting capability of the available tools, more work aimed at bridging the gap needs to be done. Understanding of the full reporting requirements of an organisation is critical in bridging the gap. For example, Yongvanich and Guthrie (2006: 313-314) developed an Extended Performance Reporting Framework (EPRF) which consists of external capital, internal structure and human capital. This is shown in Figure 4.6.

Figure 4.6: The Extended Performance Reporting Framework



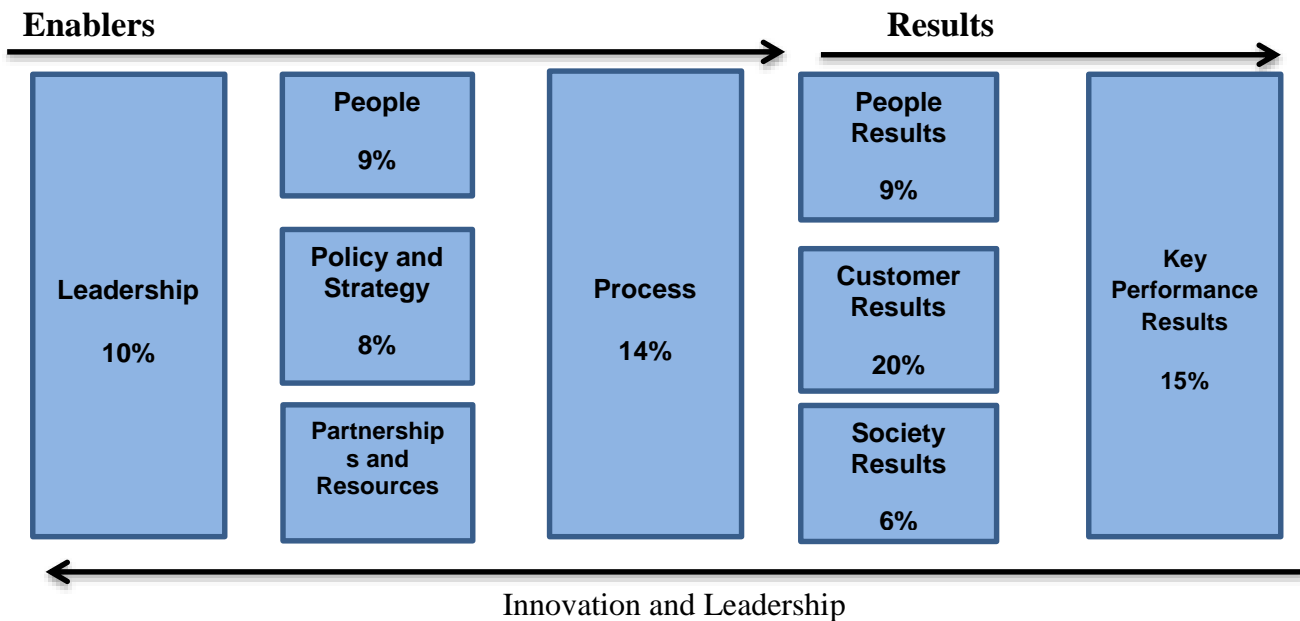
Source: Yongyanich and Guthrie (2006:315)

Figure 4.6 shows the Extended Performance Management Framework (EPMF) that is anchored on three pillars:

- External capital focusing on relations with stakeholders;
- Internal structures focusing on processes that breed efficiency, innovation and effectiveness in an organisation’s operations. This include governance structures guidance; and
- Human capital focusing on the human resources and supporting organisational culture.

There are other approaches to understanding reporting requirements. The European Foundation for Quality Management Model (EFQM) for performance reporting was founded by the European Commission with a view to replicate the successes of the Balridge and Deming prizes in the USA and Japan respectively (Mashhadi, Mohajeri and Nayeri, 2008:339-340). The EFQM Model is non-prescriptive and is based on five enablers and four results. This model is premised on attaining excellence in performance to customers, people and society. Leadership plays a vital role in galvanising the organisation to performance reporting through people, partnerships and processes. Figure 4.7 demonstrates the EFQM model.

Figure 4.7: The EFQM Model



Source: Mashhadi, Mohajeri and Nayeri (2008:340)

The EFQM model provides a basis for commencing with Sustainability Reporting efforts. Reporting on the enabler and results goes a long way to provide Sustainability Reporting. Higher Education Institutions are not strangers to quality assurance. Quality is embedded in many activities of the academy. Success to adopt the EFQM models hinges on clearly articulating expected results and key measures. The reports should be packaged in ways that are intelligible to the various stakeholders. Hamann and Sonnenberg (2006:317-319) concur and state that research must be directed at exploring better ways to ensure that contents of sustainability reports are disseminated and communicated to all stakeholders in an intelligible way. Hamann and Sonnenberg (2006) challenge civil society activists to include Sustainability Reporting issues. The list of areas to be reported on is long and institutions have to select key areas that contribute to the attainment of organisational results.

Karpagam and Suganthi (2010:17) identify other performance reporting approaches such as the Dynamic Multi-dimension, the Dashboard, performance efficiency method, service profit chain, BCG Matrix and Tableau de Board (TBD). Mashhadi, Mohajeri and Nayeri (2008: 339) caution that every approach has its peculiarities and that perception of the area of application is required to identify the suitability of an approach. The choice of a reporting approach depends on a number of factors such as availability of data, reporting capacity of an organisation, existing reporting traditions, regulatory requirements and the information needs of the various stakeholders.

From the discussion above, it is evident that reporting on organisational performance contributes to entrenching a culture of Sustainability Reporting in organisations. A better understanding of reporting requirements can be achieved with the aid of existing templates. Table 4.8 below provides a summary.

Table 4.8: Available templates for performance reporting

Template	Description
1	International Sustainability Reporting standards such as the GRI and Dashboard
2	Use of the Balanced Score Card (BSC) for Sustainability Reporting
3	Adherence to quality assurance standards such as the EFQM model
4	Use of the Extended Performance Reporting Framework (EPRF)

Source: Author's own construct

4.4 Balanced Score Cards for Reporting

The use of the Balanced Score Card (BSC) and key performance indicators (KPIs) are now standard fare in many organisations (Wilkes, Yip and Simmons, 2011:22). In a bid to promote quality improvement, Karpagam and Suganthi (2010:15) advocate the use of the BSC, originally designed by Kaplan and Norton. The BSC, used widely by most Fortune 1000 companies for quality improvement, was designed, with the emergence of a new knowledge economy as a means to measure intangible assets. The BSC seeks to give a holistic view of the business to managers through four perspectives – financial, customer, internal business process, and learning and growth. Karpagam and Suganthi (2010:15) observe that although it is a powerful strategic tool to improve performance, a sector-specific template for Higher Education does not exist. The application of the BSC in Higher Education traverses a variety of areas as depicted in the Table 4.9.

Table 4.9: Balanced Score Card for Higher Education Institutions

Perspectives	Goals	Measures
Learning and Growth Perspective	Pedagogy enhancement	Innovation in teaching learning methodology Distance learning facilities
	Technology leadership	Innovations in programmes and curricula Enhancing facilities
	Quality driven	Awards Value added learning Certification Accreditation
Internal Business Perspective	Upgrading curriculum	Introduction of new programmes Availability and implementation of latest technology
	Teaching and learning skills	Faculty credentials Production efficiency
	Enhancing facilities	Development and motivation of faculty and students Scholarships provided
Customer Perspective	Quality of faculty	Skills of faculty Facilities available for teaching/ learning process Counselling and mentoring of students
	Good citizenship	Number of students and faculty in public service Philanthropic and legally clean record of alumni, students and faculty

Table 4.9: Balanced Score Card for Higher Education Institutions (Continued)

Perspectives	Goals	Measures
Financial Perspective	Increased grants and contracts	Endowments Fund raising Alumni relations
	Resource accountability	Maximise asset utilisation
	Increase revenue streams	Executive education Academic capitalism Encouraging chairs and professorships
	Budgeting	Fee structure Salary structure Fund allotments for various issues

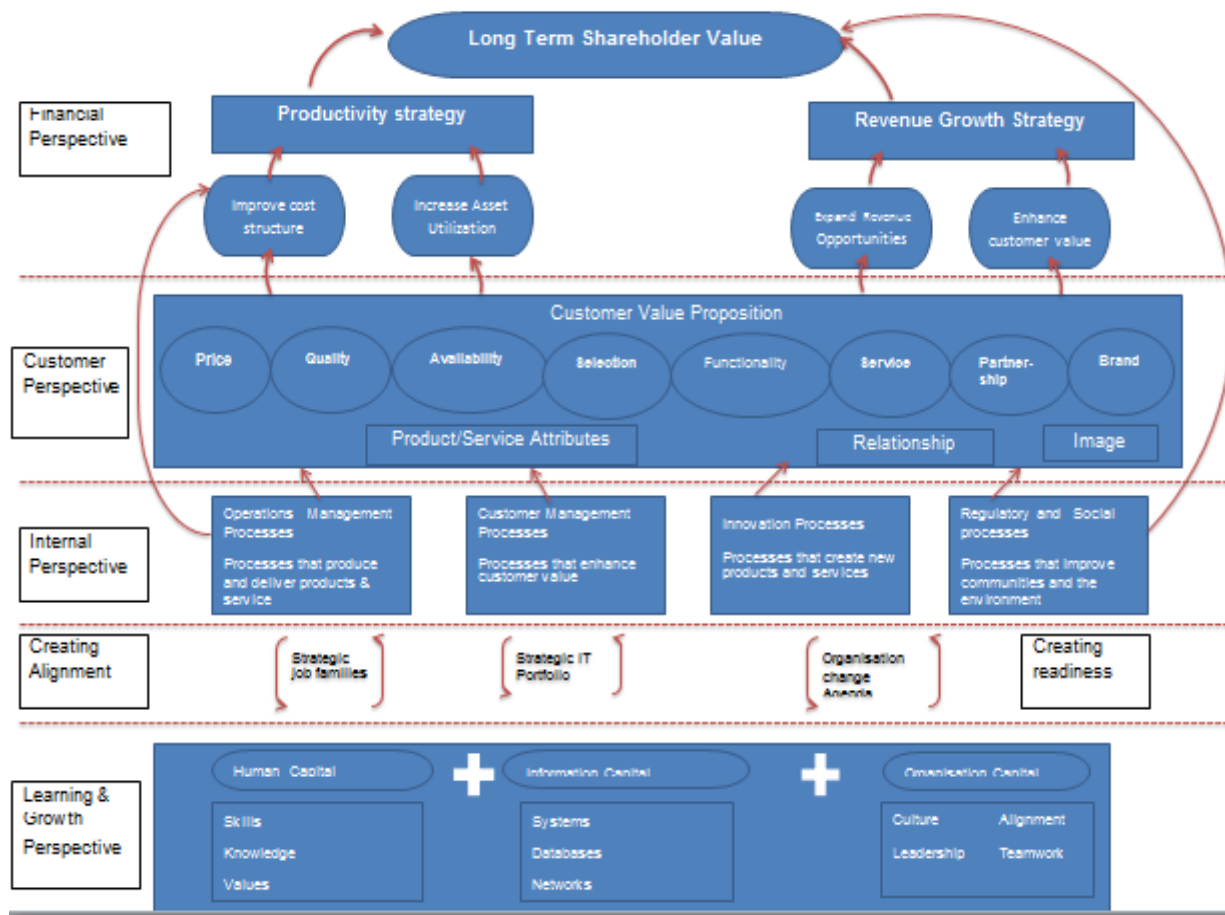
Source: Karpagam and Suganthi (2010:18)

Table 4.9 shows a Balanced Score Card (BSC) customised for Higher Education.

The use of sustainability reports and the Balanced Score Card (BSC) can be mutually beneficial. Figge, Hahn, Schaltegger and Wagner (2002:269-270) state that the integration of sustainability management with the BSC can help organisations to overcome the failings of conventional approaches to environmental and social management systems and ensure that the three pillars of sustainability are combined into a single and overarching management tool. The three key pillars that underpin sustainability reports include economic, environmental and social sustainability aspects which can seamlessly be mapped onto the BSC perspectives. The BSC approach makes it possible to take into account financial and non-financial issues that impact the economic success of an organisation (BSCI, 2011). This makes the BSC a very suitable approach in which to integrate the economic, environmental and social issues of Sustainability Reporting.

A Balanced Score Card (BSC) is used to report on the performance of an organisation against its strategy as depicted in Figure 4.8.

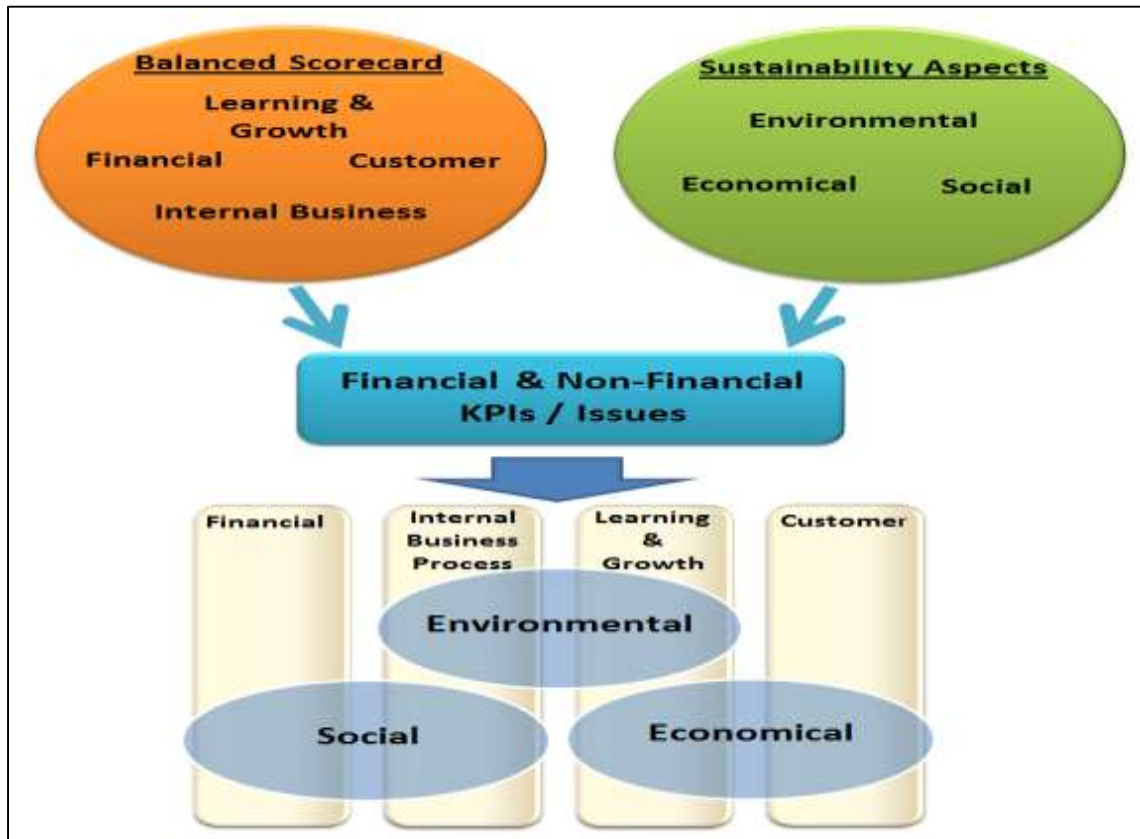
Figure 4.8: Balanced Score Card



Source: Ward and Peppard (2002)

The integration of the BSC and Sustainability Reporting frameworks are illustrated in Figure 4.9.

Figure 4.9: Integrating sustainability reporting issues and traditional BSC



Source: Eastes (2011:30)

How the BSC with associated perspectives and the sustainability with associated aspects has a common grounding is illustrated in Figure 4.9. For example, both have financial and non-financial key performance indicators/issues (KPIs). One of the ways of integrating sustainability aspects into the BSC approach is to incorporate the various aspects under the BSC perspectives, as would be the case for traditional strategic aspects (Figge *et al.* 2002).

In order for an organisation or business unit to gain the most from the formulation of a BSC for Sustainability Reporting, the process must lead to the integration of the strategically relevant aspects chosen for introduction into the management stream of the entity (BSCI, 2011). The formulation of a BSC for Sustainability Reporting is entity-specific and should map exactly to the characteristics and requirements of that entity's strategy.

Based on the foregoing discussion, Higher Education Institutions that are intent on introducing Sustainability Reporting have a solid basis to start from. The Balanced Score Card has been in place

for a number of years and presents a seamless introduction of Sustainability Reporting if adopted. The integration process needs to be customised to suit the unique nuances of each institution. The institutional strategy should not be silent on all the perspectives of BSC reporting, lest it becomes impossible to identify elements to report on. The process of choosing the reporting elements for the different perspectives should be as consultative as possible in order to ensure that stakeholder information requirements covering the following dimensions are met:

- Financial information;
- Performance against goals in the strategic plan;
- Compliance with the regulatory requirements;
- Contribution towards Corporate Social Responsibility and community engagement; and
- Environmental stewardship.

4.5 Conclusion

Literature on Sustainability Reporting was reviewed in Chapter 4. Various Sustainability Reporting approaches and practices were considered. The reviewed literature underscored the need for organisations to move towards balanced and integrated reporting which will go a long way to promote fair representations of organisational development. A comprehensive review of the available Sustainability Reporting models and approaches was provided. Higher Education Institutions can choose the best of breed from available frameworks.

Best practices in corporate governance require organisations to give balanced reports to stakeholders. For example, the King III Report on governance best practices promotes balanced and integrated reporting that covers economic, environmental and social aspects. Adherence to these guidelines advances governance and sustainability.

In designing sustainability reports, the interests of stakeholders should be borne in mind. Higher Education Institutions should thus be encouraged to embrace reporting standards as part of their business practices. Aspects of the various best reporting practices can be integrated and customised for each higher education institution's purposes.

The benefits associated with adopting Sustainability Reporting remain compelling regardless of organisation and sector. The increasing number of organisations and countries advocating the adoption of global best practices such as the Global Reporting Initiative (GRI), the Balanced Score Card (BSC)

and other standards are catalysts encouraging the development of generally accepted reporting standards. Quality assurance models such as the EFQM as well as environmental management frameworks such as EMAS provide elements that can be adopted by Higher Education. South Africa need not re-invent the wheel as some of the best practice reporting standards can be customised. Sustainability Reporting is a journey rather than a destination. The pace of adopting Sustainability Reporting is a result of the state of maturity of the organisation, existing reporting traditions and governance systems.

The literature reviewed in this chapter has demonstrated that Sustainability Reporting is at nascent stages across all sectors. However, the drivers for the adoption of Sustainability Reporting are applicable across all sectors. Integrated reporting which focuses on environmental, economic and social and political dimensions is a recommended way of introducing a system of Sustainability Reporting into an organisation.

The various approaches to performance reporting could be integrated and customised to suit reporting requirements for Higher Education Institutions. The factors which influence the introduction of Sustainability Reporting are summarised in Table 4.10.

Table 4.10: Factors which contribute to the introduction of Sustainability Reporting

No.	Section 4.2 Sustainability Reporting Best Practices	Organisation	Higher Education
1	Global Sustainability Reporting best practices, guidelines, norms and certifications	√	√
2	Changes in the regulatory environment	√	√
3	Recommendations from oversight bodies such as auditors and verification of reported information by third parties	√	√
4	Increased awareness on reporting requirements for responsible corporate citizenship	√	√
5	Advocacy role of special interest groups such as the media and pressure from regulatory bodies	√	√
6	Increase in the scope of reporting in line with information requirements from various stakeholders	√	√
7	Expectations of positive spin-offs such as risk management, improved image, effective communication with stakeholders, keeping up with reporting trends and ability to attract staff and students	√	√
8	Improvement in the quality of reporting as a result of increased scope and complexity of reporting	√	√
9	Use of sector-specific standards and reporting metrics	√	√

Table 4.10: Factors which contribute to the introduction of Sustainability Reporting (Continued)

No.	Section 4.2 Sustainability Reporting Best Practices	Organisation	Higher Education
10	The combined voluntary and compliance aspects of Sustainability Reporting	√	√
11	Awareness and training on Sustainability Reporting best practice	√	
12	Level of sophistication of an organisation’s information systems to integrate information for ease of reporting	√	√
13	Level of maturity in an organisation’s reporting capability.	√	√
14	Integrated approach to planning, monitoring and evaluation.	√	√
15	Strengthened corporate governance with emphasis on risk management.	√	√
No.	Section 4.3 Performance reporting		
1	Use of international Sustainability Reporting standards such as the GRI, Dashboard and the Balanced Score Card (BSC)		√
2	Use of the Balanced Score Card (BSC) for Sustainability Reporting		
3	Adherence to Quality assurance standards such as the EFQM.	√	√
4	Use of the Extended Performance Reporting Framework (EPRF)		√
No.	Section 4.4 Balanced Score Card for reporting		
1	Financial information	√	√
2	Performance against goals in the strategic plan	√	
3	Compliance with the regulatory requirements		√
4	Contribution towards Corporate Social Responsibility and community engagement	√	√
5	Environmental stewardship	√	√

Source: Author’s own construct

Available Business Intelligence technologies that could enable Sustainability Reporting in Higher Education Institutions are discussed in Chapter 5.

CHAPTER 5: BUSINESS INTELLIGENCE

5.1 Introduction

The importance of Sustainability Reporting to an organisation and its stakeholders was discussed in Chapter Four. A Sustainability Report of a Higher Education Institution should, at the very least, cover the economic, social, environmental and educational aspects (Lozano, 2006:70). In order to achieve an integrated sustainability report, organisational data from multiple sources should be collected, processed, analysed and presented in line with the information requirements of stakeholders. Business Intelligence (BI) tools and technologies provide organisations with the capability to produce sustainability reports.

BI refers to the tools an organisation uses to gain a better understanding of operations, markets and competition (Bhatnagar, 2009:34). BI can be viewed as "...a broad category of applications, technologies and processes for gathering, storing, accessing and analysing data to help business users make better decisions" (Watson, 2009:491). BI provides a basis upon which informed decisions can be made in organisations.

Business planning and decision making processes are enhanced by the availability of accurate and complete information. The decisions taken in organisations are greatly undermined by the absence of relevant information. On the other hand, BI tools and business solutions contribute immensely to decision support in organisations, faced with challenges of data which is unavailable and unstructured. It is estimated that 80% of business information is found in an unstructured form (Herschel and Jones, 2005:7). A study by Preston (2007:11) concludes that unstructured content constitutes 90% of an average organisation's information. Howson (2007:11) indicates that managers spend an average of two hours in a day searching for data, half of which is later found not usable.

Information and knowledge represent the fundamental wealth of an organisation (Ghazanfari, Jafari and Rouhani, 2011:1579). There is evidence to suggest that benefits accrue to organisations that implement and use BI correctly (Isik, Jones and Sidorova, 2013:13; Popovic, Hackney, Coelho and Jaklic, 2012:729).

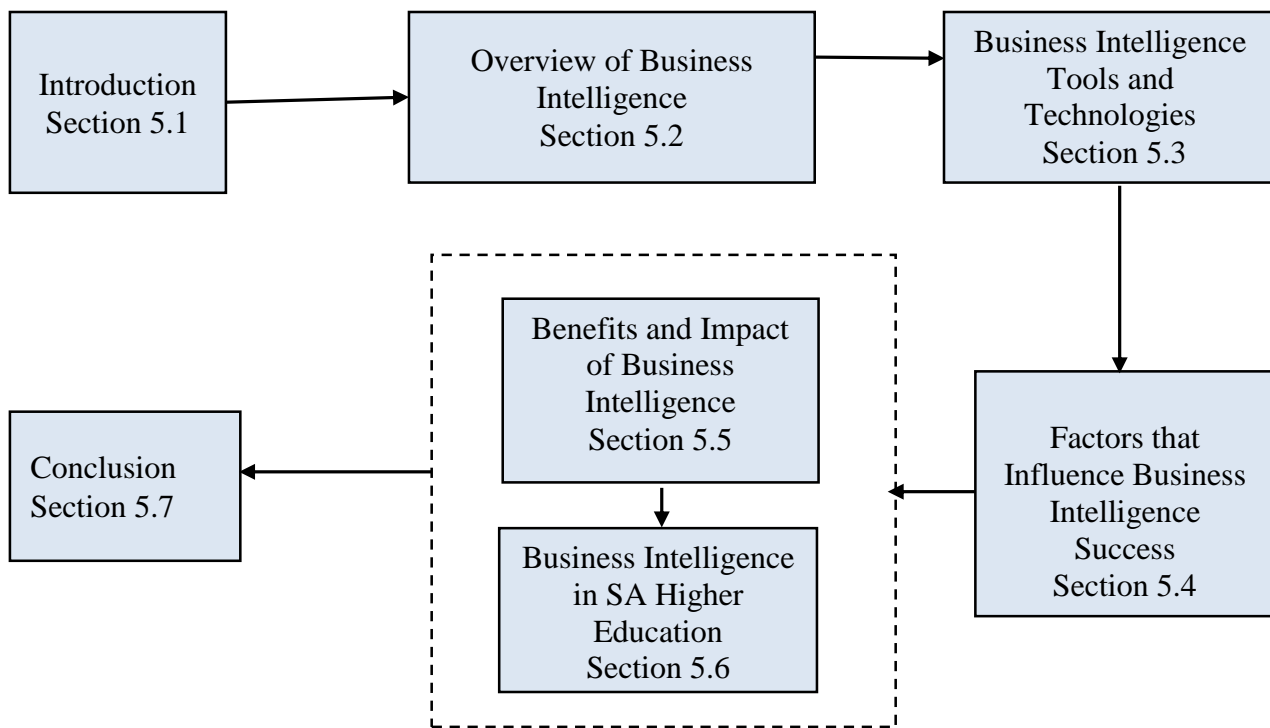
This chapter addresses the research objective and research question stated below:

RO4: To identify the key factors that influence BI in SA Higher Education.

RQ4: What are the key factors that influence BI in SA Higher Education?

The layout of Chapter Five is shown in Figure 5.1 below. Section 5.2 gives an overview of BI followed by Section 5.3 that contains a discussion BI tools and technologies. Factors that influence the success of BI are discussed in Section 5.4. The benefits and impact of BI are discussed in Section 5.5. while the application of BI in South African Higher Education is discussed in Sections 5.6. The chapter ends with a conclusion in Section 5.7.

Figure 5.1: Chapter 5 outline



RO4: To identify the key factors that influence BI in SA Higher Education.
RQ4: What are the key factors that influence BI in SA Higher Education?

Source: Author's own construct

5.2 Overview of Business Intelligence (BI)

BI tools and technologies have evolved over the years in response to the increased complexity of business requirements and decision making. Structured data can be easily analysed by using basic BI tools. The lack of data mining tools to handle unstructured data has made BI essential to organisations (Bonney, 2013:258). As organisations face increased volumes of data, generated both internally and externally, and the rate and variety of delivery, a capability to handle the data needs to be created (Isik, Jones and Sidorova, 2013:13).

Organisations could use a number of available BI tools and technologies for purposes of enhancing their decision making processes. In some organisations, including Higher Education, BI tools and technologies have become an indispensable enabler in the strategic planning processes (Kaplan and Norton, 2011:168-169).

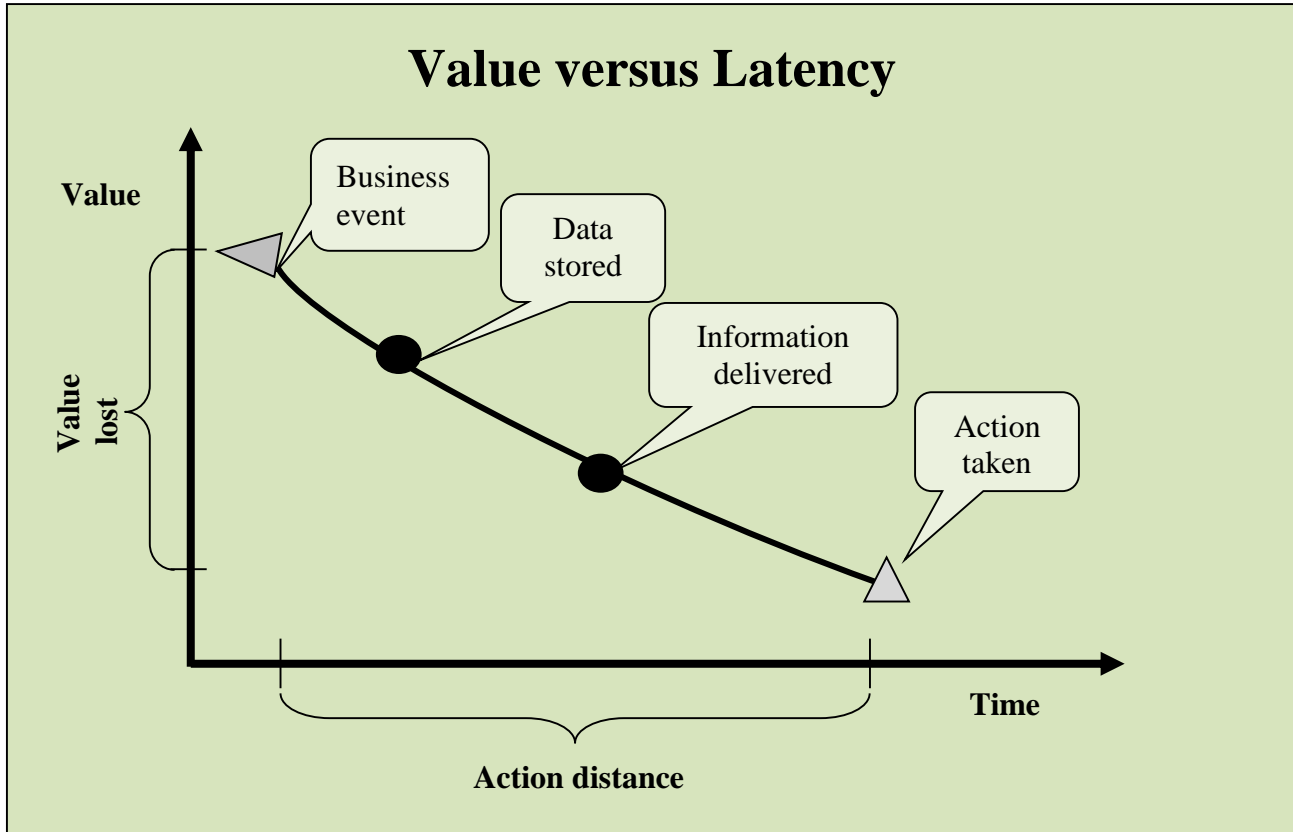
According to Sabherwal and Becerra-Fernandez (2011:6), Business Intelligence (BI) can be viewed either as the product of the process of information or knowledge creation or of the process of obtaining, analysing and distributing information. Sabherwal and Becerra-Fernandez (2011:6-10), however, categorise BI as either real-time or operational. The former provides inputs to decision makers when needed while the latter places emphasis on supporting an organisation's operations. Real-time BI ensures that no time is lost between information availability and decision making.

Decision making is simplified with access to real-time data. Watson (2009:500) states that decision making is best supported whenever real-time and not, historical data is used as decision support data. Real-time data has minimal latency. Hackathorn (2004:3) describes three types of latency:

- *Data latency* - the time between data availability and its storage in the central repository (the data warehouse);
- *Analysis latency* - the period between data being in the data warehouse and the data being analysed; and
- *Decision latency* - the time it takes before a decision is taken based on the available, analysed data.

Organisations should strive to minimise data latency, analysis latency and decision latency. The relationship between value and time for real time data is shown in Figure 5.2.

Figure 5.2: The value of real -time data



Source: Hackathorn (2004:3)

Figure 5.2 points to a need for real-time information for better decision making. BI capability should be designed so that there are minimal time lapses between an event's occurrence and action taken. It is acknowledged that there are instances where information will not be available beforehand for decision making (Davenport, 2011:36).

Organisations made use of Decision Support Systems (DSS) that were independent and not interlinked with other business systems. Enterprise Resource Planning (ERP) systems form the foundation of organisational information systems today. BI emerged to provide a comprehensive decision-making capability based on an integrated ERP system to organisations (Ghazanfari, Jafari and Rouhani, 2011:1579).

BI can be viewed from either technical or managerial viewpoints. The managerial viewpoint views BI as a process of integrating data from multiple internal and external sources into information relevant to

decision making (Ghanzafari, Jafari and Rouhani, 2011:1579). However, according to Tutunea and Rus (2012:866), from a technical point of view, BI capability comprises:

- Data Warehousing – architecture, modelling, storage, managing and data processing;
- ETL – Extracting, Transforming, Loading and data integration;
- Implementation of reports, data visualisation and dashboards;
- Online Analytical Processing (OLAP) and multidimensional analysis; and
- Data mining, statistical analysis and forecasting.

The key themes which emerge from both the managerial and technical perspectives on BI include the fact that data needs to be gathered, analysed and distributed for purposes of supporting decision making and reporting in an organisation. BI tools and technologies can enable holistic reporting efforts since some organisations have systems that do not enable reporting from multiple dimensions as is required by sustainability reports.

Therefore, BI entails reconnaissance, data gathering, analysis, predictions and decision making. It requires effective agents located strategically, so that meaningful data can be supplied timeously. Operational databases are used for local data gathering within the context of Line-of-Business (LOB). This data is then aggregated in a multi-dimensional fashion in a centralised, enterprise-context data warehouse where the data can be cross-referenced and analysed for patterns in enterprise culture.

5.3 Business Intelligence Tools and Technologies

Building of a data warehouse is essential to introducing BI capability into an organisation. Eighty percent of time in data analysis is spent on data transformation processes. Therefore using the correct data warehouse architecture and Extracting, Transforming and Loading (ETL) tools substantially saves time spent in data transformation (Khan, Ehsan, Mirza and Sarwar, 2012:244). Data warehousing also eliminates duplicating efforts during data retrieval (Shin, 2002:582). Data modeling can be used for scenario planning that requires the factoring in of external influences. Nyalungu (2011:54) admonishes organisations to pay attention to data management in order to avoid confusion stemming from having multiple databases holding large amounts of data resources. The features of a data warehouse are important in managing multiple databases.

Originally developed in the IBM research factory as *Sequel*, Sequential Query Language (SQL) is now used as a standard language for relational database manipulation (Adamski and Pratt, 2012:71). The

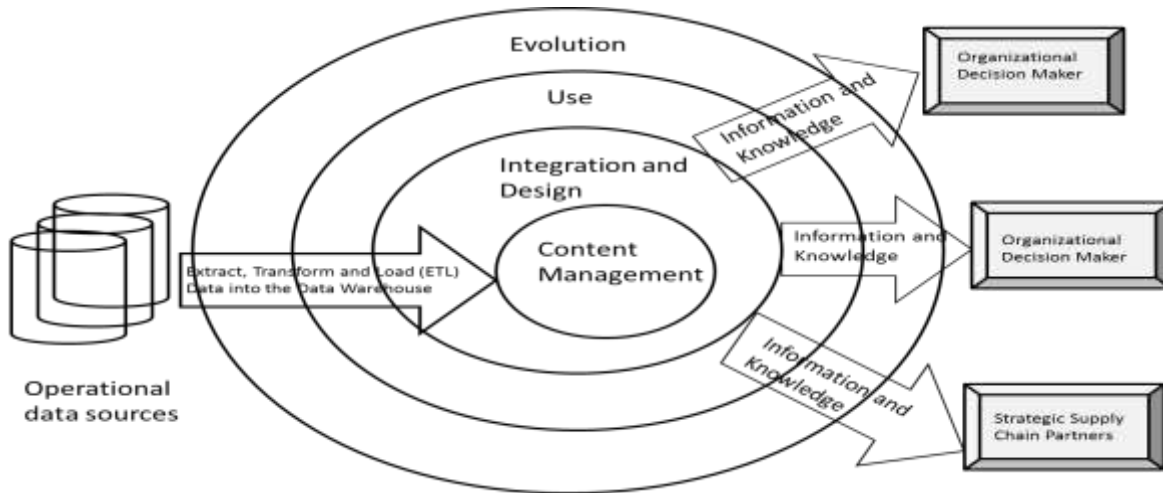
main reason why organisations invest in Relational Database Management Systems (RDBMS) is to enhance data integrity, improve the performance of their systems to retrieve data and increase the availability of information. Data from Online Transaction Processing (OLTP) and RDBMS is used for day-to-day activities while the data is stored in data warehouses, distinguished by certain characteristics.

Adamski and Pratt (2012:296) have identified the following characteristics of data warehouses:

- *Subject orientation* – This means data is organised by entity and not by the function unit or department that uses the data;
- *Integrated* – This means that data is consolidated despite the fact that it originates from different sources;
- *Time variant* – This means that data in the DW is a snapshot view taken at a point in time and is not necessarily current; and
- *Non-volatile* – This means that data in the DW cannot be updated and is in read-only mode. This facilitates uniform analysis throughout the organisation.

The characteristics of a data warehouse described above are the result of good planning and design. Organisations that wish to draw from the benefits of BI, invest time and effort in designing good data warehouse architectures. Figure 5.3 demonstrates the key elements in a data warehouse architecture. Data undergoes the extraction, transformation and loading process into the data warehouse. Through integration and use, the data is converted to content that decision makers use in an organisation. This iterative process is evolutionary as it results in new and refined data making its way into the content management system.

Figure 5.3: Data Warehouse layered architecture

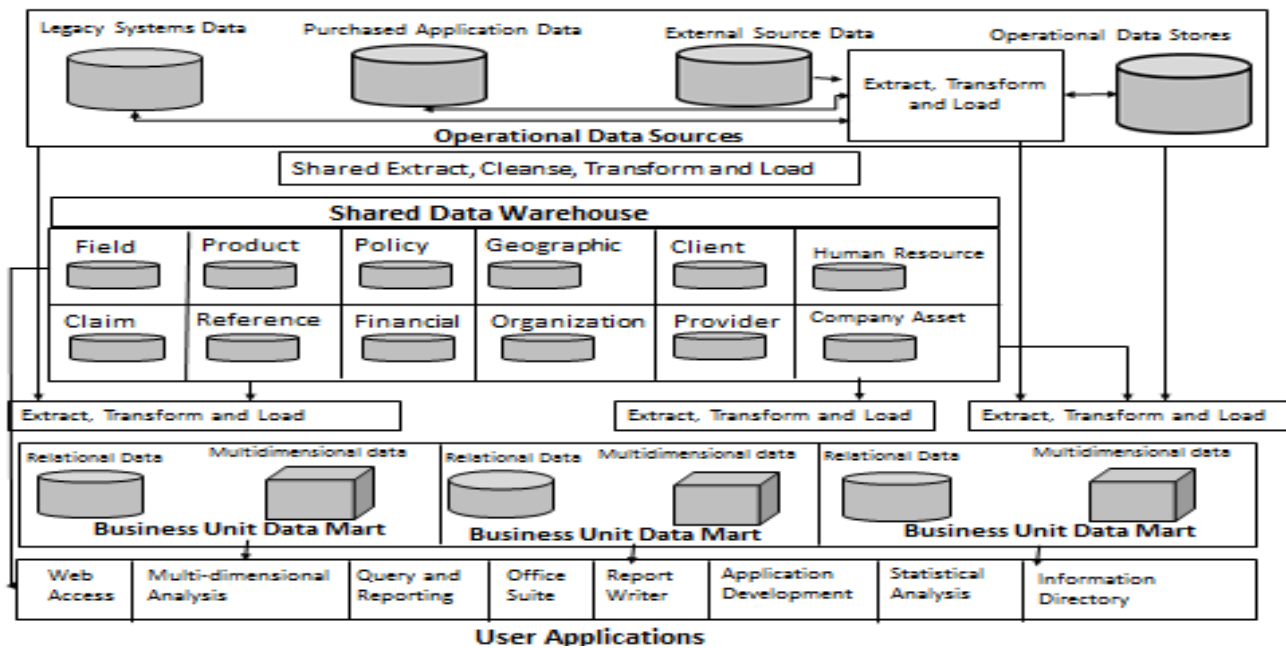


Source: March and Hevner (2007:1036)

Shin (2002:586) developed a comprehensive data warehousing architecture shown in Figure 5.4. Content management is at the heart of data warehouse architecture. The creation of Enterprise Content Management (ECM) solutions is an attempt to assist organisations to harness the power of available information. Nyalungu (2011:53) advises organisations to have a coherent system that enables knowledge workers always to have a single version of the truth about organisational performance. This view is shared by Durso (2009:26) who posits that BI is a way of creating a snapshot view of the institutional progress by visualising data that exists in various systems and therefore minimises the use of intuition and guesswork in decision making while helping management and faculty to keep track of important activities.

Figure 5.4 shows a generic architecture for a data warehouse. This is based on five key functional entities in organisations - operational data sources containing the transactional day-to-day data, data staging areas, a shared data warehouse, data marts and the end user applications for accessing the data. Data from operational data sources (internal and external) is extracted, cleaned and transformed for sharing in a common repository (the shared data warehouse). The shared data warehouse contains available organisational data that is classified according to functional and operational requirements. Data in the shared warehouse is further refined through the ETL process and stored in data marts which contain views peculiar to a business or functional line. Data warehouses use Relational Database Management System (RDBMS) concepts such as use of query languages to enable data access and analysis.

Figure 5.4: Data Warehousing Architecture



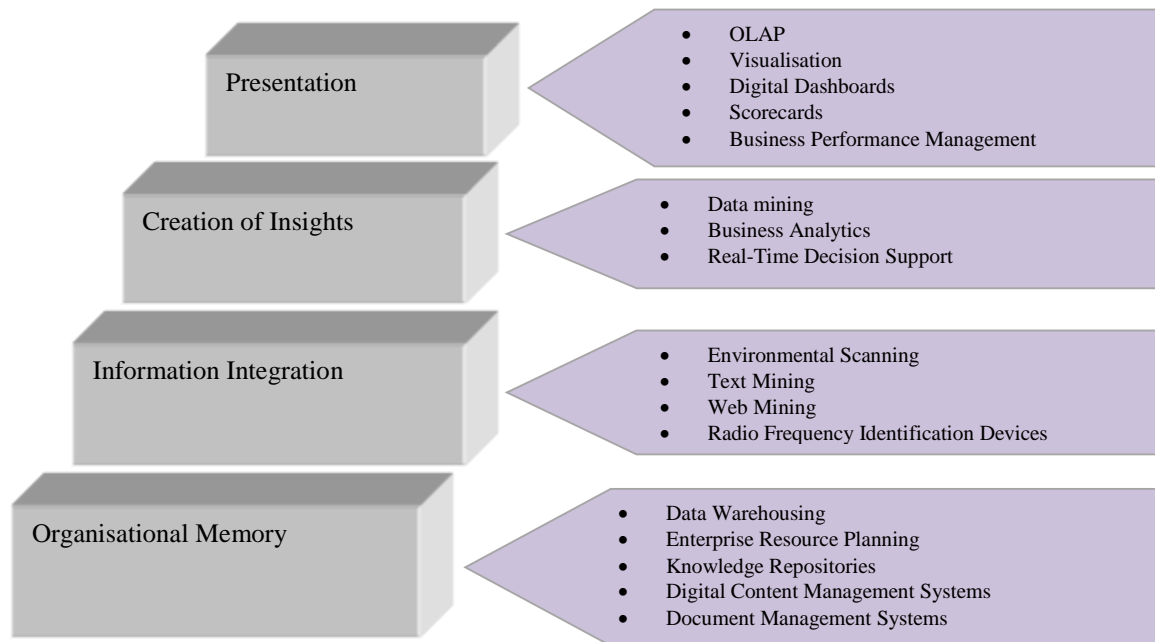
Source: Shin (2002:586).

It is necessary to extract data from source systems, transform the data and store it in a data warehouse before loading it into an accessible and usable data mart. A data mart is a subset of data that is of value to a specific group of users (Adelman, Moss and Abai, 2005:264). A long-term view of commencing with data warehouse architecture and known best practices for data management sets a good foundation for BI in an organisation.

Sabherwal and Becerra-Fernandez (2011:57) state that a data warehouse is a prerequisite for strong BI. Having a data warehouse, they add, is more of a journey than a destination – even mature data warehouses are continuously changing. In addition to having a reliable data warehouse, there is a wide array of tools and techniques for building BI capability that are available to organisations to choose from. Certain tools are more important in the early phases of building BI capability.

In addition to data warehousing, examples of other useful tools include ERP systems, document management systems, knowledge repositories, Radio Frequency Identification Devices (RFID), web mining and text mining, visualisation, score cards and dashboards (Sabherwal and Becerra-Fernandez, 2011:43). These tools are matched with an organisation’s BI capability in Figure 5.5.

Figure 5.5: BI tool and technologies



Source: Sabherwal and Becerra-Fernandez (2011:43)

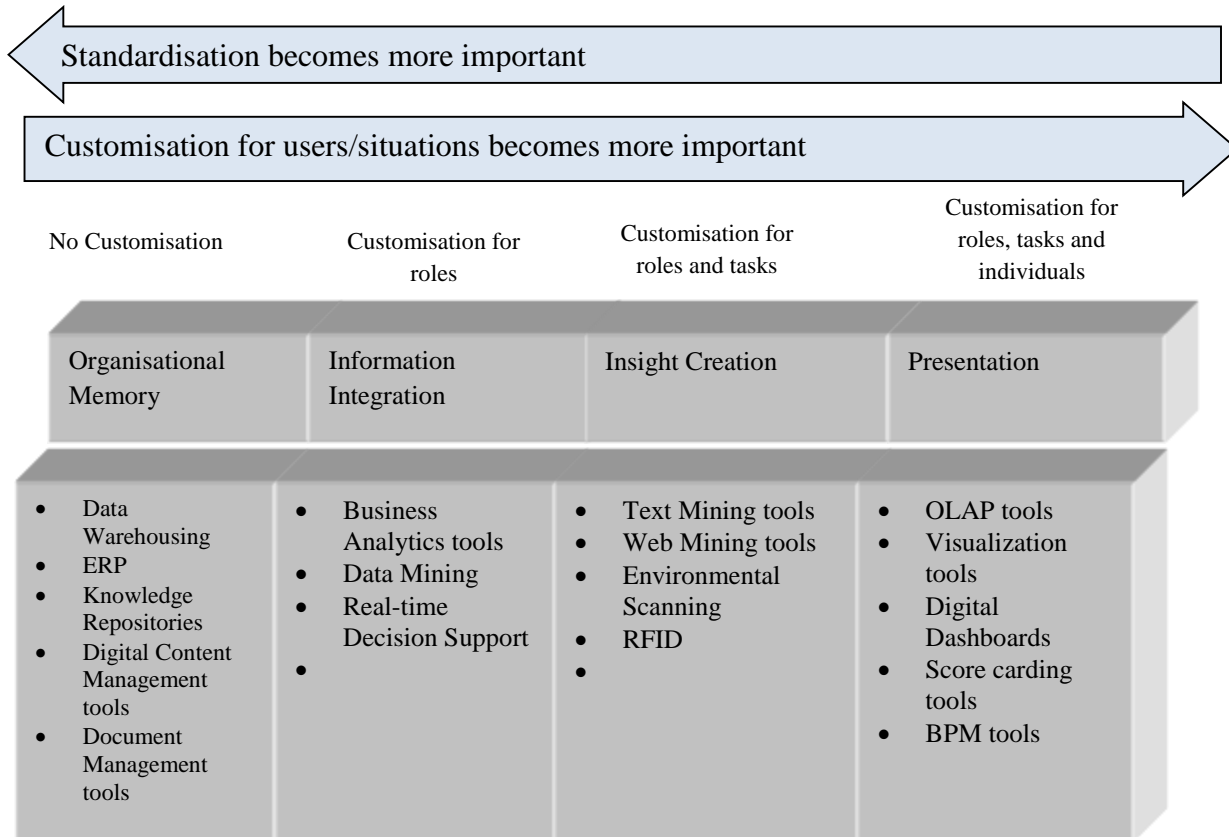
Figure 5.5 sketches the progression in the sophistication of BI technologies that corresponds with the organisation's BI capability. Organisational memory involves basic data storage and archiving while information integration begins to integrate data from multiple sources. Creation of insights relates to data analytics and real-time decision making. Visualisation tools such as dashboards are typical to environments with advanced BI capability whereby results are automated and snapshot views are made available to users according to information requirements.

The stage in an organisation's BI capability determines the level of standardisation or customisation of available tools and technologies. Ultimately, however, organisations invariably have to find a fine fit between standardisation and customisation of BI.

Figure 5.6 shows the BI tools and techniques available to support organisational reporting. These are matched with the BI capability level of the organisation. The plethora of tools and techniques for BI require institutions to invest in ICT capacity to select appropriate tools and adopt techniques for BI suitable for the organisation. Standard tools could be used for information storage and information integration. However, as organisations become more sophisticated in analytics, tools for predictive scenario planning and executive level presentation become necessary. Organisations must standardise

for organisation memory and information integration but they can customise for insight creation and presentation.

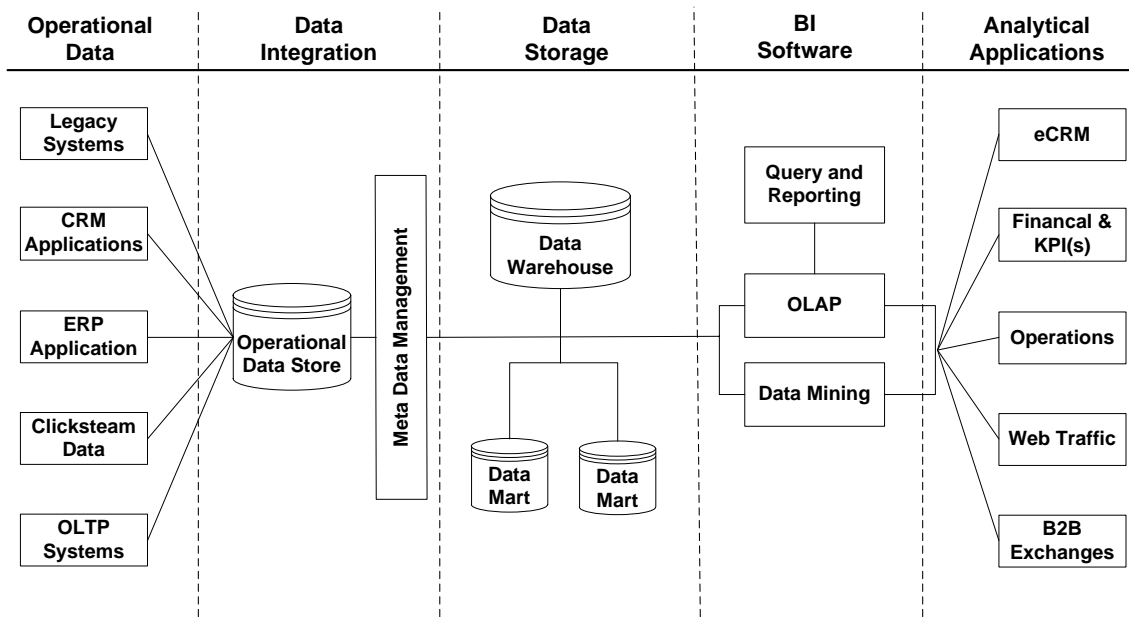
Figure 5.6: Customisation and standardisation of BI tools and techniques



Source: Sabherwal and Becerra-Fernandez (2011:191)

Standard BI tools suffice for the early stages of an organisation’s BI while more customisation is required to accommodate the unique, reporting nuances in organisations. Depending on their unique circumstances, organisations can build their BI capability by using different approaches. However, certain elements are key in developing BI capability. Chou, Tripuramallu and Chou (2005:346) have developed a generic BI framework that shows the key elements required for an efficient BI system. The elements of a BI framework are illustrated in Figure 5.7.

Figure 5.7: Business Intelligence Framework



Source: Chou, Tripuramallu and Chou (2005:346)

Figure 5.7 shows that operational data in many organisations comes from various sources with the main sources primarily being legacy systems, Customer Relationship Management (CRM) applications, ERP applications, clickstream data or Online Transactional Processing (OLTP) systems. Data from the various sources is consolidated and integrated as organisational metadata before being transferred to the data warehouse. A data warehouse consists of one or many data marts. Data marts contain related data.

BI software interfaces with this data to provide the capability for querying and reporting. This is made possible through data mining and OLAP techniques. Analytical applications interface with BI software to provide the required views. Watson (2009:49-493) concludes that BI initiatives should focus on three targets – development of a single organisational view, creation of requisite BI infrastructure and organisational transformation.

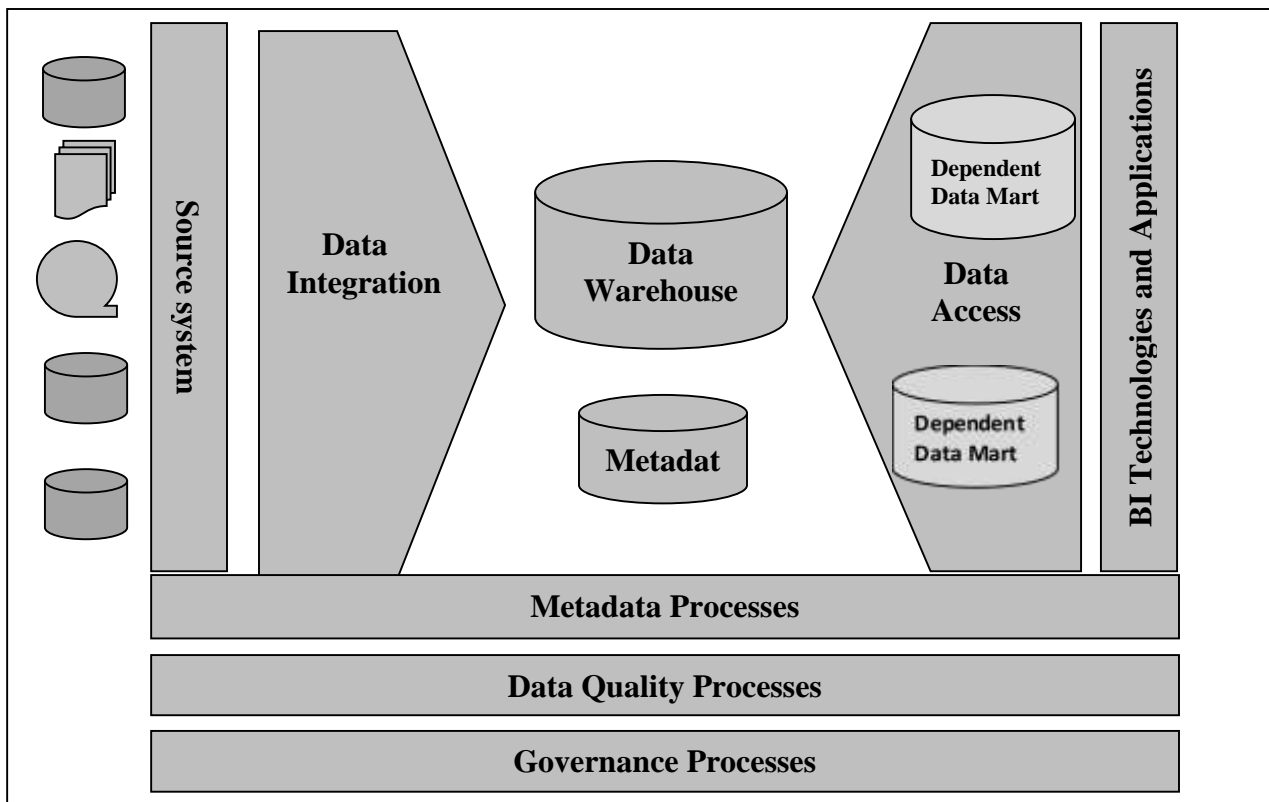
New technologies and tools that contribute to BI capability in organisations have emerged. For example, since many organisations are using the Internet to transact and web browsers are used to deploy software and access data across organisations, it has become important to store such data. Web warehousing merges data warehousing and BI systems with new web technologies (Tan, Yen and Fang, 2003:132). In the context of Sustainability Reporting, the Internet provides opportunities to

satisfy the information requirements of many stakeholders by providing access to information and fostering dialogue (Herzig and Godemann, 2010:1067-1069).

Online interactive communication is proposed as an effective way for organisations to engage their stakeholders on matters of corporate reporting. Effective communication lies in understanding the audience and their needs (Coope, 2004: 21-22). Insenmann, Bey and Welter (2007:488-492) point out that BI capabilities present an array of possibilities for Sustainability Reporting in organisations grappling with questions such as, how to communicate in general and report in particular, which media to use, and how to design the reports.

In summary, a BI environment comprises data from source systems, data integration techniques to clean and transfer the data to a central repository (data warehouse) and creation of customised views to access categorised data in data marts via available applications. Watson (2009:493) proposes a generic BI environment as shown in Figure 5.8.

Figure 5.8: A Generic BI Environment

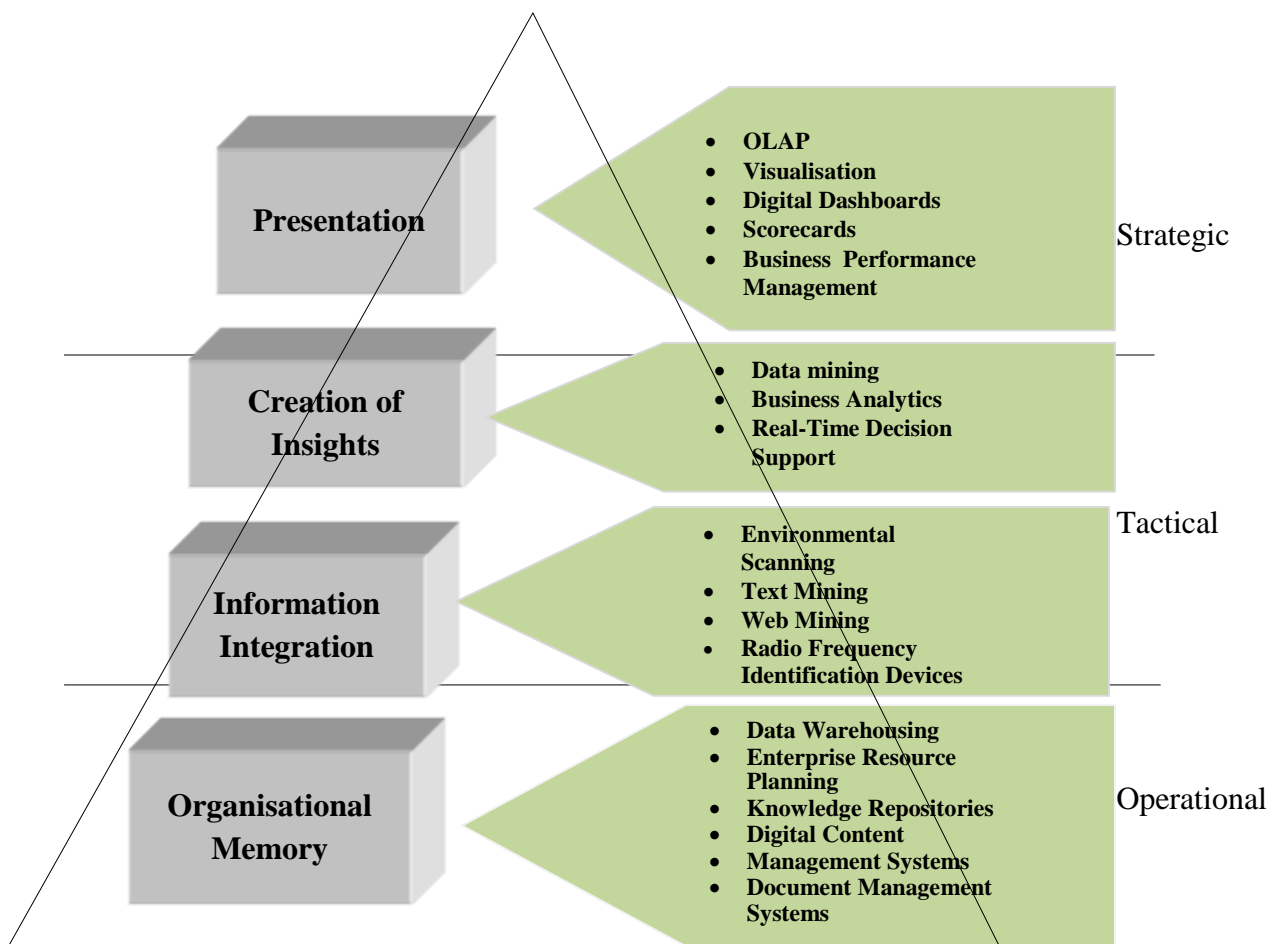


Source: Watson (2009:493)

A generic BI environment is shown in Figure 5.8. Similar to the scenario explained in a generic BI framework, data from independent disparate sources is first integrated before being transferred to a data warehouse. Data that is useful for specific business units or groups of users is grouped in data marts from which information is accessed. BI environment is anchored on processes related to governance of data quality and data classification and definition processes.

Based on the discussion above, it has emerged that despite the proliferation of information technologies and systems, a number of organisations use ERP solutions with limitations. The main limitations relate to integration capability, reporting capability and budget control. Organisations can harness the power of their existing BI tools and techniques to fill the reporting gaps. Different tools and techniques are more appropriate for individuals at different levels of the organisation. Figure 5.9 links the tools and technologies with their appropriate levels of management reporting.

Figure 5.9: BI tools and technologies matched with level of operation



Source: Adapted from Sabherwal and Becerra-Fernandez (2011) and modified by author

Figure 5.9 shows that operational level managers access transactional data within the parameters of organisational memory. Tactical level managers tend to be more selective in terms of level of detail and therefore integrate and analyse data from different sources. Tactical level users use tools to integrate and analyse data while users at the strategic level focus on data that gives a snapshot view of the organisation from a consolidated point of view.

5.4 Factors that influence Business Intelligence Success

BI remains important in enabling informed decision making. The growth in importance of BI has been mainly triggered by factors such as complicated decision making processes occasioned by the exploding volume of data, complexity of decisions made and need for agility in decision making and technological progress (Isik, Jones and Sidorova, 2013:13). Technological progress that has led to an increase in processing power and in the search capabilities of computing devices have combined with the power of connectivity via the internet to give impetus to BI. Efforts in BI are aimed at harnessing the power of information. Stakeholders' information needs have also emphasised to the need for BI.

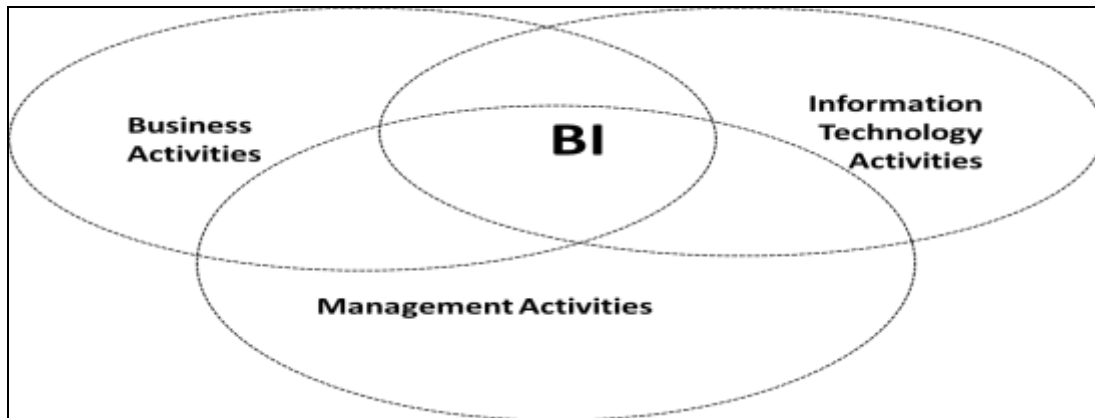
The increased use of information by various stakeholder groups means that information should be made available to meet specific reporting requirements. Stakeholders do not merely play the role of data recipients – they also generate, gather, analyse and present the data. Boddy, Boonstra and Kennedy (2009:16) state that stakeholders in information systems are motivated by a combination of human needs and by their perception of the organisation and its wider context. Therefore, stakeholders use different ways to harness the power of available information systems.

Planning for BI is important in organisations. Adelman, Abai and Moss (2005:3-6) warn of results that await organisations that work without a data strategy - redundant, inconsistent and dirty data, inability to integrate, and frustrated users. Conversely, organisations that have a data strategy ensure that the following elements are addressed in the strategy:

- Data integration and quality;
- Metadata definition;
- Data modelling;
- Defining organisational roles and responsibilities;
- Database performance management; and
- Dealing with unstructured data and deriving business value out of data.

BI happens at the point where the activities of business, management and IT intersect as shown in Figure 5.10. BI provides the information required by business in its operations and management in decision making. For BI to be realised in an organisation, skills in the business, management and IT domains interact leading to the need for a mechanism to monitor the activities. BI provides the required mechanism.

Figure 5.10: Forming areas in BI



Source: Bahrami, Arabzad and Ghorbani (2012:163)

The success of any BI initiative depends on a number of factors inside and outside the organisation. Popovic *et al.* (2012:730) cite the following factors:

- Data and information quality;
- Information access quality;
- Organisational decision making culture; and
- The extent of use of information in business processes.

The factors above are linked to the capability of the Enterprise Resource Planning (ERP) system that is in use. ERP systems are an important part of the information environment in an organisation. ERP systems are intended to integrate organisation-wide data from various sources. However, ERP systems have their limitations. Chou, Tripuramallu and Chou (2005:342) cite the following as challenges facing ERP systems:

- Lack of versatile reporting capability;
- Limited budget control capability;

- Limited integration capability with other systems used in an organisation; and
- Practical problems such as inadequate training of users and limited BI capability.

Typical ERP systems contain modules that cater for information processing requirements of different functional lines. It is possible to create interfaces that facilitate data transfer and exchange with other systems in the organisation but the comprehensiveness of ERP functionality and reporting depends on the user requirements of the organization. For purposes of reporting capability, it is important for organisations to document and fully understand the reporting requirements of different user bases.

Some organisations – especially in the public sector – are faced with challenges relating to business data (Heeks, 2006:84). The common challenges relate to data quality which leads to incomplete and outdated information as well as poor formats for information presented. These challenges point to the absence of an organisational information management strategy aimed at turning data into a valuable asset for the organisation. Building a BI capability is an integral part of a sound information management strategy.

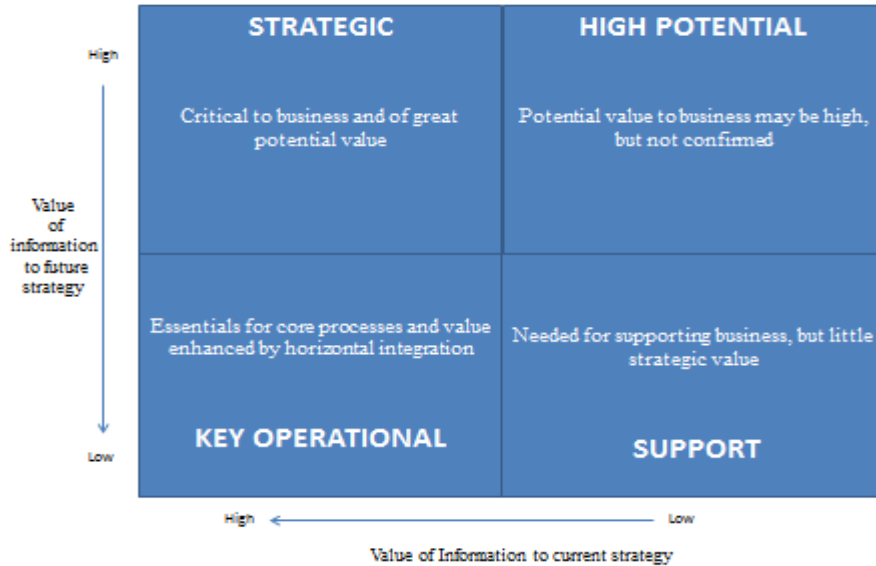
According to Isik, Jones and Sidorova (2013:14-16), the success of any BI initiative can be measured by assessing the following criteria:

- Data quality - The quality of data emanates from poor maintenance procedure or from errors in data migration processes;
- User access – Different BI tools have different applicability and capabilities;
- Flexibility – The flexibility of BI is affected by the business rules and regulations embedded in information systems of an organisation;
- Integration with other systems – The quality of communication between systems from which BI data is derived affect the success with which BI is implemented;
- The right decision environment – This relates to a culture of organisations relying on information for decision making; and
- Alignment of BI goals and organisational objectives - BI success is a function of the alignment between BI objectives and organisational objectives.

The measuring criteria discussed above are included and utilised at different levels of the organisation. Information requirements differ depending on the level of reporting in the organisation. Ward and

Peppard (2002: 476-480) developed a matrix to identify the information value to different levels of management as depicted in Figure 5.11.

Figure 5.11: Value of information to the business



Source: Ward and Peppard (2002: 477)

As discussed in Section 5.3 (see Figure 5.9), information and reporting requirements differ depending on the levels at which the user operates in the organisation. The perceived information value determines who uses what information. The four quadrants in Figure 5.11 are explained in Table 5.1.

Table 5.1: Description of information needs quadrants

Information value	Description
Strategic	Information associated with business drivers and indicators for success.
High Potential	New information whose value is yet to be proven by the organisation.
Key Operational	This usually accounts for the largest volume of information available in an organisation. The information is mainly transactional.
Support	Does not contain latent value and is often perceived as burdensome by information users. Examples of this include legislation.

Source: Author's own construct

All quadrants in Table 5.1 and Figure 5.11 contribute to decision making, albeit at different levels. Executive management derives more benefit from strategic and high potential quadrants. Middle

management (tactical level) would benefit more from key operational information. Operational staff that focuses more on transactions would use more of the support quadrant. The information culture of the organisation is an important consideration when examining BI capability.

The culture of an organisation influences its information requirements as was discussed in Chapter 4. Davenport (2011:35) avers that an organisation-wide embrace of BI is led from the top. Executive management should ensure that the culture of using BI permeates to all levels of the organisation and that decisions are based on hard facts. Ward and Peppard (2002:470) identify the following information cultures associated with information management in organisations:

- Functional culture: Information is used as a basis for exerting power and influence. Information is not freely available and shared;
- Sharing culture: Characterised by trust in information systems;
- Enquiry culture: Characterised by search for better and more information by both Managers and staff; and
- Discovery culture: Characterised by innovation based on superior information in an organisation.

The discussion above has highlighted the importance of building a BI capability in organisations, especially in light of the exploding volume of data. Structured and unstructured data – often from disparate sources – can be turned into valuable information and knowledge that can aid organisations in making even the most complex of decisions timeously. The factors and challenges often associated with information management in organisations highlighted in this section include the following:

- Nonexistence and unavailability of data;
- Incomplete data;
- Absence of an information management strategy;
- Lack of integration between an organisation's information systems;
- Lack of real-time data appropriate for decision making; and
- Poor formats of information as presented to users.

Organisations should, therefore, strive for coherent information systems that guarantee that everyone has a single version of the truth. Through the use of technological processing power, large volumes of unstructured data from multiple data sources can be modelled, integrated and made accessible as

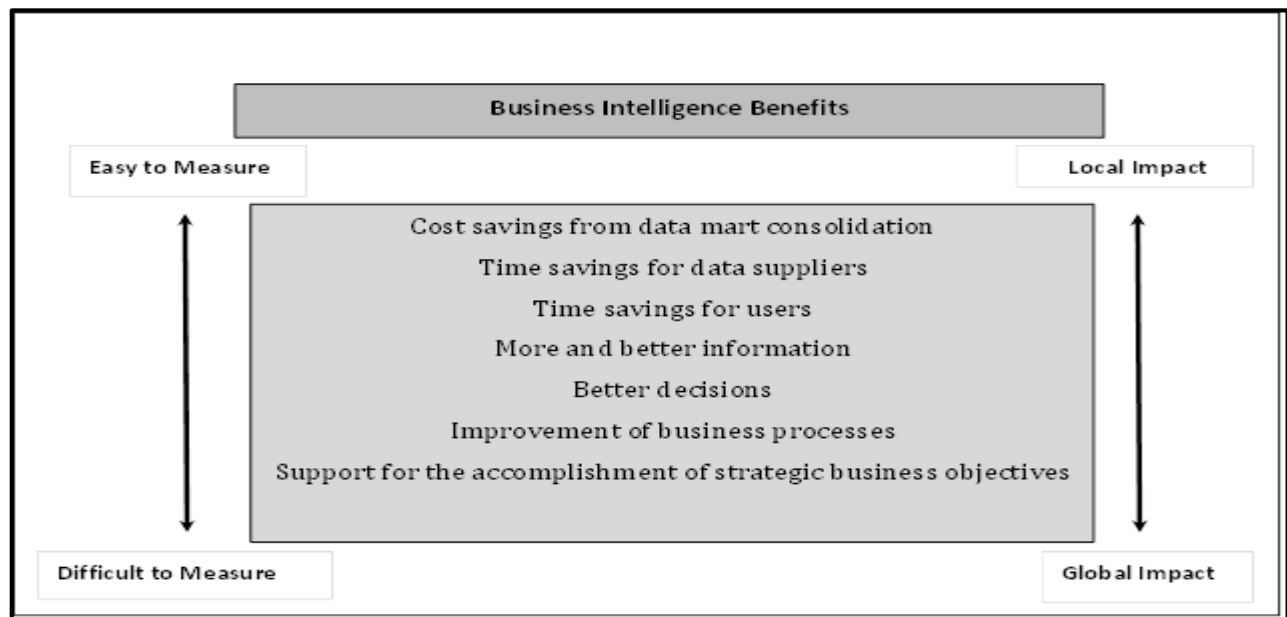
quality information for decision makers and stakeholders in an organisation. To this end, an information management strategy based on generic BI frameworks can help organisations that wish to tap into the power of BI. At the basic level, BI capability entails having the following:

- Defining processes relating to data governance, data quality and metadata;
- Identifying data source systems in an organisation;
- Integrating data from the various systems and storing these in a data warehouse; and
- Creating function specific views of data (data marts) and enabling seamless access to these via other available BI technologies.

5.5 Benefits and Impact of Business Intelligence

A number of benefits are associated with the use of Business Intelligence (BI) applications, technologies and processes in an organisation. By harnessing the power of information technology, BI facilitates reporting of information about the past, the present, as well as planning for the future (Sabherwal and Becerra-Fernandez, 2011:14-17). Nyalungu (2011:54) avers that BI is important for strategic decision making and that it is imperative for managers to have continuous access to vital information in order to make correct decisions. Watson (2009:498) cautions that not all benefits of BI are easy to measure and therefore proposes a model in Figure 5.12 for gauging the potential benefit of BI.

Figure 5.12: The potential benefits from BI



Source: Watson (2009:498)

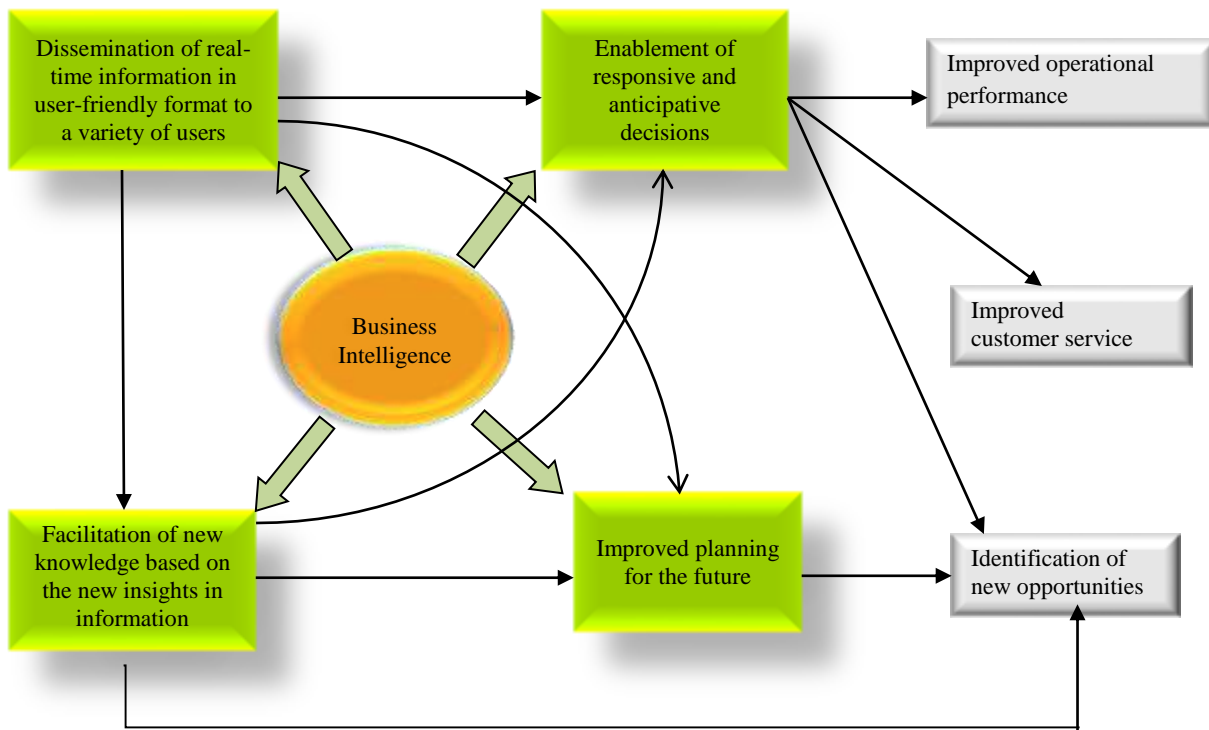
Figure 5.12 shows that the more BI matures in an organisation, and the wider the scope of its impact, the more difficult it is to determine the associated benefits. Some of the notable benefits associated with BI include cost and time savings, improved business processes and better quality of information and overall support to the organisation in attaining its strategic goals.

BI introduces increased autonomy and gives flexibility to users when it comes to reporting and data analysis. In addition, improved decision making and time saving have been identified as benefits (Hocevar and Jaklic, 2010:116). BI enables organisations to be more responsive to their customers' needs (Azma and Mostafapour, 2012:104). In addition, the BI capabilities enable an organisation to adapt to change and improve its performance. The extent to which an organisation can leverage BI is related to the capabilities of its systems (Isik, Jones and Sidorova, 2013:14).

BI has enabled organisations to solve strategic decision problems and continues to offer opportunities for collaborative decision making beyond the boundaries of a single organisation (Golfarelli, Mandreoli, Penzo, Rizzi and Turricchia, 2012:393). The advantages associated with BI can also be seen by its impact on the organisation. The impact manifests itself in the form of improvement of operational performance and customer service and identification of new opportunities for organisations. BI also impacts the organisation from a number of dimensions. These include improved operational performance, improved customer service and the capacity to identify new opportunities (Sabherwal and Becerra-Fernandez, 2011:21).

Figure 5.13 demonstrates the iterative nature of the impact of BI in an organisation. The dissemination of real-time information enables users to be proactive and responsive in decision making – often associated with good decisions. The disseminated information allows organisations to generate new knowledge that forms the basis for improved planning. Boddy, Boonstra and Kennedy (2009:7) define the terms; data, information and knowledge. Data refers to recorded descriptions of things, events, activities or transactions. Information is a product of processed data that is judged to be useful. Knowledge builds on information that is analysed and give new meaning.

Figure 5.13: Impact of Business Intelligence



Source: Sabherwal and Becerra-Fernandez (2011:21)

In summary, the benefits that can accrue to an organisation through the use of its information systems depend largely on the BI capability of the organisation. In the main, the benefits relate to organisational efficiency, capacity to timeously identify and seize new opportunities, respond to regulatory reporting requirements and improved service. The BI capability is a function of the maturity of the organisation in information management. BI capabilities, in the order of maturity level, include: organisational memory, information integration, insight and presentation.

5.6 Business Intelligence in Higher Education

In the context of the Higher Education system in South Africa, which is largely under the control of the Government, national strategies underpin the Higher Education system strategies were discussed in Chapter 2. Restitution measures to address deficits in a society fractured by the legacy of Apartheid legislation and historical (attitudinal/psychological) predispositions are a major component of education strategy.

The Minister of Higher Education and Training, has outlined the objective for Outcome 5 of the National Government’s 12 performance outcomes as producing “a workforce, skilled and capable of supporting an inclusive growth path” (DHET, 2012:2). Table 5.2 contains a summary of the outputs.

Table 5.2: National Higher Education outputs

Outputs	Description
1	Establish a credible institutional mechanism for skills planning, which includes the provision of information with regard to the demand and supply of skills, as well as a career guidance system for the country.
2	Increase access to programmes leading to intermediate and high level learning, including the raising of skill levels of both youth and adults and to access training.
3	Increase access to occupationally-directed programmes in needed areas and thereby expand the availability of intermediate level skills, with a special focus on artisan skills and other mid-level skills.
4	Increase access to high level occupationally-directed programmes in needed areas such as engineering, health sciences, natural and physical sciences, as well as increasing the output of graduate teachers.
5	Increase research, development and innovation in human capital for a growing knowledge economy, with a particular focus on post-graduate degrees, deepening industry and university partnerships, as well as increased investment into research development and innovation, especially in the areas of science, engineering and technology.

Source: DHET strategic plan (2012)

The outputs outlined in Table 5.2 can only be achieved with the aid of aggregated institutional information that responds to national outputs and outcomes. The successful delivery of outputs depends on data, information and knowledge of the status quo, established baselines and benchmarks, targets and decision-support mechanisms. Therefore, there is need for systems that support monitoring and evaluation of progress made with respect to the outputs.

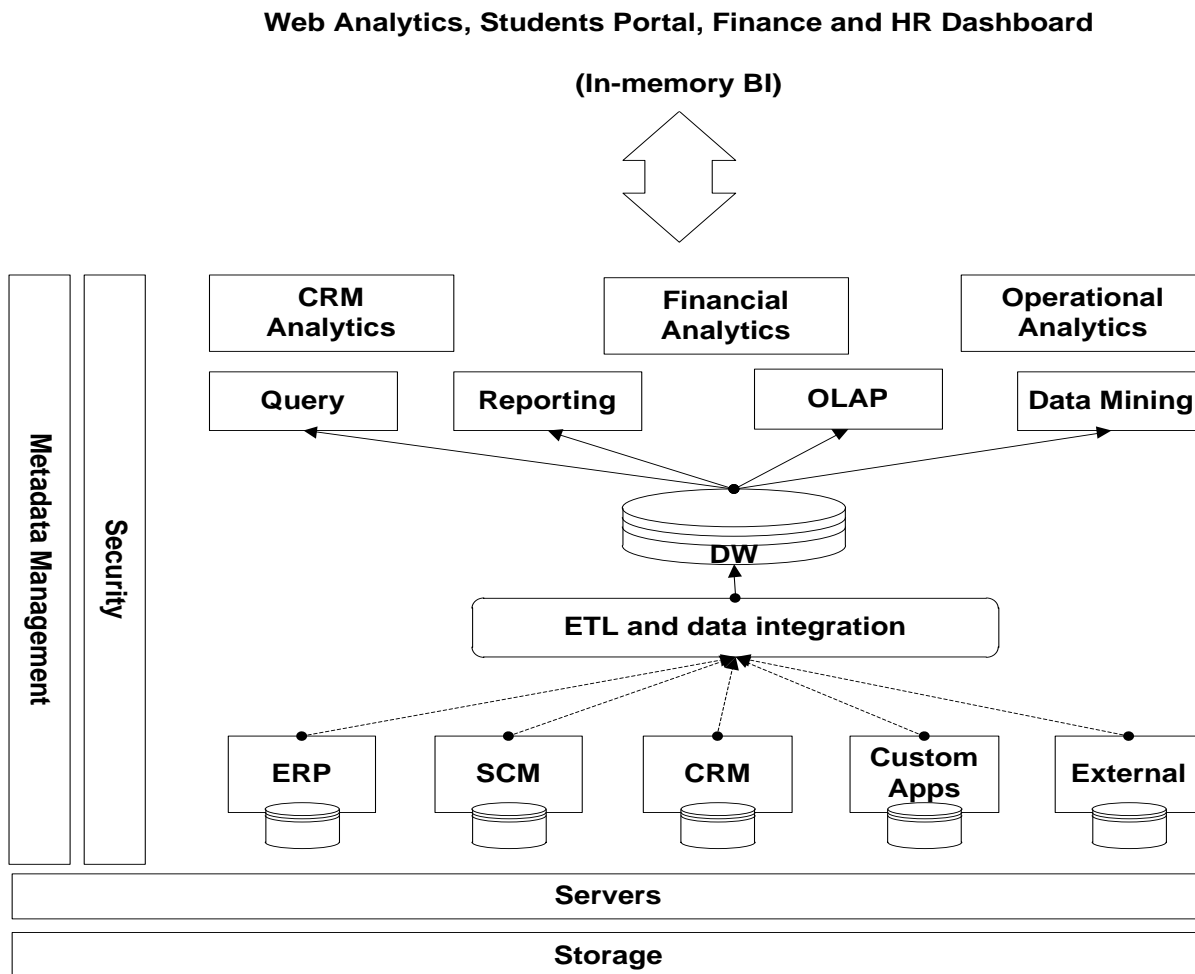
The Centre for Higher Education and Training (CHET) in South Africa is an independent statutory body providing professional advice to the Department of Higher Education and Training (DHET). The Higher Education Quality Committee (HEQC) of the CHET undertakes institutional reviews of the sector while the monitoring directorate of the CHET is responsible for monitoring the Higher Education system in South Africa. Data for this function is sourced from the Department of Higher

Education and Training's Higher Education Management Information System (HEMIS), the National Research Foundation (NRF), Statistics South Africa, the Human Sciences Research Council (HSRC) and other relevant statutory and non-statutory bodies. HEMIS data is submitted by HEIs on an annual basis for collation by the DHET. This data depicts the institutional profiles in specific areas, e.g. enrolments, income and expenditure, success rates, student-staff FTE ratios and academic staff profiles. The Department of Higher Education and Training recognises the need for a structured interface between Universities, Colleges, the Sectoral Education and Training Authorities (SETAs), quality councils and other training institutions, to facilitate meaningful interaction between these organisations. One of the integration mechanisms must, of necessity, be the integration of education data (and information systems).

The HEQC undertook the first round of Quality Assurance reviews from 2007-2011, focusing on: reviews of existing and new programmes, the three core functions (teaching and learning, research and community engagement), quality promotion and capacity development. In the second round of institutional reviews scheduled to commence in 2012, the emphasis will be on quality promotion and capacity development. HEIs are required to have systems in place for monitoring institutional profile data in compliance with DHET and HEQC requirements, regulations and recommendations.

The Centre for Higher Education Transformation (CHET) published '*Performance Indicators in South African Higher Education 2000-2008*' as a report and a set of guidelines for HEIs on the type of data required for performance /compliance monitoring (Cloete and Bunting, 2000). Ideally, all HEIs in South Africa should use the same system for collecting the same type of data which would be aggregated in a HEMIS data warehouse hosted by the DHET. Data marts could be hosted by the various related organisations, including the CHE – with smaller data marts hosted within directorates – and SETAs. Ranjan (2008:466) provides a framework for BI that is applicable for Higher Education. This is shown in Figure 5.14.

Figure 5.14: A BI framework for Higher Education



Source: Ranjan (2008:466)

Figure 5.14 provides an overarching framework for the development of a data warehouse as part of developing the BI capability of an organisation. The feeder systems and subsystems, enabling infrastructure and the analytical layer are included in the framework. The model is designed for Higher Education and therefore can serve as a guide to individual institutions. Higher Education Institutions should also utilise data analytics and Competitive Intelligence (CI) in order to derive the full value of BI infrastructure.

Organisations that use analytics as a strategic tool are identified by certain characteristics. Davenport (2011:24) identifies the following characteristics of organisations that use data analytics:

- Directing their analytics focus in the right area;
- Promoting an organisational culture that supports and makes use of analytics;

- Employing the right staff; and
- Employing the correct technology in response to changing demands.

As part of analytics, CI techniques are useful in the strategic planning process. Barret (2010:28-30) cites benchmarking, conducting background checks on individuals and organisations that interact with an institution, competitive assessment, war gaming, win-loss analysis and network analysis, as examples of CI methodologies. Barret (2010) further observes that the use of CI techniques and methodologies has not gained widespread acceptance in Higher Education. CI methodologies use external information to influence internal strategies. He concludes that the CI process in Higher Education is important in ensuring market relevance, competitiveness and survival. In essence, CI demands that institutional systems and processes gather and analyse internal and external information that is pertinent to strategy planning.

The discussion above shows the importance of BI in the Higher Education Sector in South Africa. A case was made for aggregated institutional information to enable monitoring and evaluation of national targets. HEMIS data is key in providing the analytics required for decision making and assuring quality. Specific tools that are available affordably to South African Higher Education include identity management and front office applications. Voorhees (2008:77) states that offices responsible for Management Information Systems (MIS) are best placed to support the strategic planning processes in Higher Education Institutions.

The discussion above also pointed out the need for BI capability that can support strategic planning in Higher Education Institutions. CI techniques coupled with BI capability will go a long way to ensure that the institution maximises returns from its information resources. Appropriate performance metrics should be put in place to ensure that targets and outputs set by management are achieved. Leadership plays a key role in ensuring that decisions are made based on factual and accurate information and that the culture of reporting is institutionalised.

5.7 Conclusion

The rationale for and benefits of BI were discussed in this chapter. As is the case in the private sector where decision making is aimed at increasing profits through informed decision making, BI tools and technologies can also be used in organisations in the public sector such as Higher Education Institutions to identify opportunities and also to provide early warning signs.

This chapter also discussed Business Intelligence (BI) tools and techniques available for decision support and planning purposes. The increase in volume of fast changing information and the need to make business sense of data sets require organisations to deploy technologies that will enable them to seize the opportunities presented by the digitisation of data. While the architecture of the DMs and DW is crucial to the success of BI, however, the overall corporate strategy for BI should transcend the collection and processing of data.

Business intelligence capability is built over a time period and organisations do well to plan their BI roadmap. The benefits and impact of BI should be felt in organisations when data becomes available and is used as a basis for making decisions. In addition, performance management at individual and organisational level is greatly enhanced by the use of BI technologies. It is therefore important for organisations to equip their workers, who have specific knowledge, with tools that will facilitate reporting of key performance parameters truthfully. There are several BI reports which organisations can choose to measure their key performance indicators and to report on sustainability. In the South African Higher Education system, coordination at the national level on HEMIS data can be expanded to include other aspects of Sustainability Reporting.

Based on the benefits of BI and considering the critical role data analytics will play into the future, universities should identify technologies and embark on institutional processes that promote institutional cultures that value information. The discussion in this chapter has indicated that institutions have the opportunity of choosing from a wide array of BI tools and techniques. Table 5.3 below provides a summary of key factors that influence BI capability.

Table 5.3: Summary of factors influencing BI in Higher Education

Factors Driving BI	Organisational
Exploding volume of data	√
Increased complexity in decision making	√
Need for real-time data	√
Technological progress	√
Government regulations	√
Reporting gaps in the existing ERP systems	√
Internal drive for better reporting	√
Urge to remain competitive	√
Sustainability Reporting requirements	√
Stakeholders' information requirements	√

Table 5.3: Summary of factors influencing BI in Higher Education (Continued)

Factors that influence BI in organisations	
Information culture of the organisation (Functional, sharing, enquiry and discovery cultures)	√
Data quality	√
Extent of use of information in business processes	√
Flexibility of the BI system	√
Alignment of BI goals with organisational objectives	√
Challenges associated with BI	
Data latency, analysis latency and decision latency	√
Unavailability of data	√
Non-existence of data	√
Unstructured data	√
Incompleteness of information	√
Lack of a data and information management strategy	√
Lack of integration amongst information systems	√
Staleness of information and unsuitability for decision making	√
Poor information presentation	√
Lack of skills to utilise BI technologies	√
Level of organisational/institutional BI capability	
Organisational memory (information storage)	√
Information integration (synthesised data about past, present and future from different source systems)	√
Insight (Analyses and scenario planning)	√
Presentation (information presented in easily understandable and accessible ways).	√
BI Tools and technologies	
Strategic (OLAP, visualisation, digital dashboards, scorecards.	√
Tactical (Analytics, RFID, Data, text and web mining)	√
Operational (Data warehousing, ERP, Document management)	√
Medium of reporting	
Websites and the Internet	√
Brochures and newsletters	
Published annual reports	√

Table 5.3: Summary of factors influencing BI in Higher Education (Continued)

Benefits and impact of BI	
Increased autonomy and flexibility for information users	√
Getting more information from the same data	√
Improved decision making	√
Time saving	√
Solving strategic organisational problems	√
Improved business processes	√
Improved operational performance	√
Ability to identify new opportunities	√
Ability to comply with regulatory reporting requirements	√

Source: Author's own construct.

Chapter 6 consolidates the contributions from the literature review (Chapters 1 to 5), presents a preliminary Framework for Higher Education Sustainability Reporting and links the key concepts discussed with the empirical studies.

CHAPTER 6: SUMMARY OF LITERATURE REVIEW IN RELATION TO THE EMPIRICAL STUDIES

6.1 Introduction

The importance of Business Intelligence (BI) tools and technologies in organisations was discussed in Chapter 5. Sustainability Reporting at operational, tactical and strategic levels is enabled by BI tools and technologies. Organisations are better placed to make decisions on the basis of information made available through BI technologies. In addition, processes such as strategic planning as well as governance are given an advantage by the information availed through the use of BI technologies.

This chapter provides a link between the reviewed literature and the empirical study. The research objectives and research questions addressed in the literature review chapters form the basis for the empirical study. Table 6.1 contains the research objectives and research questions.

Table 6.1: Summary of research objectives and research questions addressed in the literature review chapters

Research Objectives	Research Questions	Chapter
ROp. To develop a Sustainability Reporting Framework for Higher Education Institutions in South Africa.	RQm. What are the components of a Sustainability Reporting Framework for South African Higher Education Institutions?	Chapter 1: Introduction. Chapter 9: Conclusions and future research.
RO1. To define the factors that influence strategic planning in South African Higher Education.	RQ1. What factors contribute to effective strategic planning in Higher Education Institutions?	Chapter 2: Strategic Planning in Higher Education.
RO2. To determine the characteristics of the South African Higher Education governance system.	RQ2. What are the characteristics of the South African Higher Education governance system?	Chapter 3: Governance in Higher Education.
RO3. To identify factors which influence Sustainability Reporting in SA Higher Education.	RQ3. Which factors influence Sustainability Reporting in SA Higher Education?	Chapter 4: Sustainability Reporting in Higher Education.
RO4. To identify the key factors that influence BI in SA Higher Education.	RQ4. What are the key factors that influence BI in South African Higher Education?	Chapter 5: Business Intelligence in Higher Education.

Table 6.1: Summary of research objectives and research questions addressed in the literature review chapters (Continued)

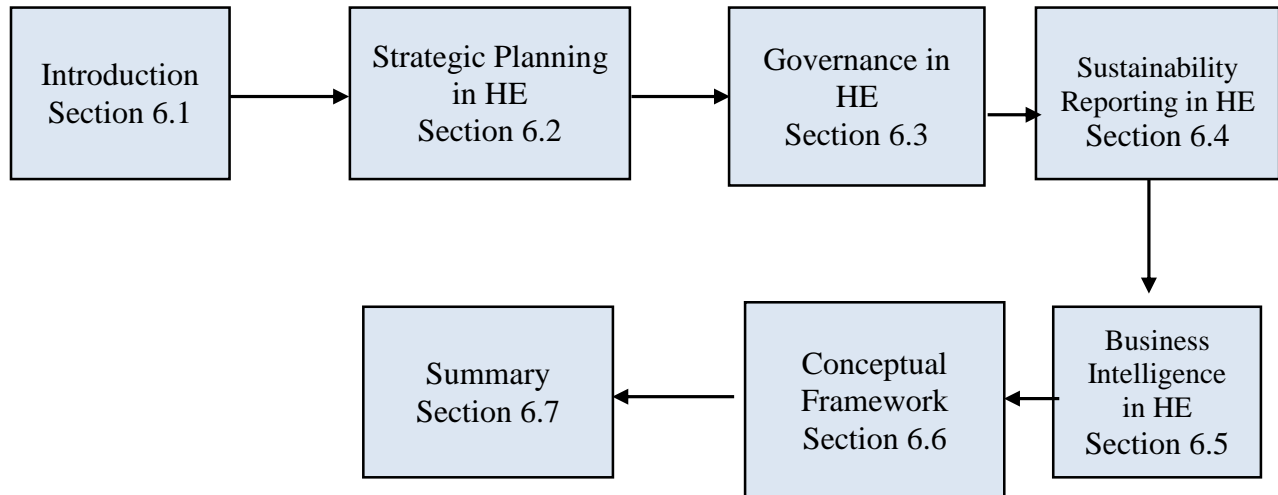
Research Objectives	Research Questions	Chapter
RO5. To identify appropriate research design and methodology for a study on Sustainability Reporting in SA Higher Education.	RQ5. Which research design and methodology is appropriate for a study on Sustainability Reporting in SA Higher Education?	Chapter 7: Research design and methodology.
RO6. To develop a Framework for Sustainability Reporting for SA Higher Education.	RQ6. How are the components of a Sustainability Reporting Framework in SA Higher Education interlinked?	Chapter 6: Summary of Literature Review in Relation to the Empirical Studies. Chapter 8: Empirical Results and discussion of the Findings.

Source: Researcher’s own construct.

This chapter provides a summary of key findings from the literature review covered in Chapters 2-5 of the research. The analysis will focus on the four major themes covered in the four literature review chapters, namely strategic planning, governance, Sustainability Reporting and BI.

Section 6.1 offers a background to the research as well as the research objectives and questions addressed in the literature review chapters. Section 6.2 focuses on strategic planning while Section 6.3 discusses governance in South African Higher Education. Sustainability Reporting and the BI that enables it are discussed in Sections 6.4 and 6.5 respectively. A preliminary Sustainability Reporting Framework is introduced in Section 6.6 before the chapter summary in Section 6.7. Figure 6.1 provides a layout for this chapter.

Figure 6.1: Chapter Six outline



6.2 Strategic planning in Higher Education

The literature surveyed in Chapter 2 underscores the importance of strategic planning. Organisations that undertake strategic planning do so in order to be sustainable in environments often characterised by rapid change. It was noted that Higher Education Institutions are not immune from the challenges facing organisations in the private sector and therefore need to plan. To this end, a number of factors that influence the success or lack thereof in strategic planning has emerged.

In order to be successful, strategic planning should be a consultative process spearheaded by visible and strong leadership (Tromp and Ruben, 2010:3-4). This ensures the much needed buy-in and consensus for implementing the developed strategies. Through consultation, individuals become more familiar with the contents of the plans and more certain of the contribution they can make towards achieving the goals spelt out in the strategic plan. In addition, roles of stakeholders should be clearly defined and understood.

The literature also reveals that the implementation of strategic plans should be monitored, and that feedback on performance should be given to relevant stakeholders (Hayward and Ncayiyana, 2003:43). Having reliable and timely information provides a sound basis for monitoring and evaluation processes. Monitoring provides early warning signs and equips organisations with a sound basis for evaluating and reviewing the chosen strategic path. A culture of effectively using available information promotes effective monitoring.

In brief, there is concurrence on the list of factors that influence the strategic planning process as cited in literature (Kaplan and Norton, 2011:179; Mankins and Steele, 2011:217; Porter, 2011b:28). These factors include:

- Communicating the vision to build organisational consensus;
- Creating a culture of business planning;
- Having clearly defined priorities;
- Making the strategy simple and understandable;
- Communicating the strategy;
- Continually monitoring performance; and
- Reaching agreement on timeous and adequate resource deployment.

Strategies fail due to various reasons such as unanticipated forces, deployment of inadequate resources, lack of focus and failure to communicate and get buy-in, especially from those expected to implement the strategies (Sterling, 2003:28). Of the reasons attributed to the failure of strategic plans, failure to communicate has been cited as one factor that greatly undermines governance and sustainability efforts (Peng and Littlejohn, 2005:522).

Sector-specific reporting standards – especially regulatory requirements – play a big role in promoting a culture of reporting. In creating an enabling climate for effective strategic planning, universities should invest in resources such as information and communications technology while enhancing their human resources through training and skills development. Performance monitoring of strategic plans, which is a key variable for success, should be underpinned by well-understood reporting standards. Guidelines for reporting on performance would greatly enhance the monitoring and evaluation processes (Sevier, 2003:18). To this end, reporting models such as the use of the Balanced Score Card (BSC) could be explored.

The overview of strategic planning at the NMMU and reflection on other planning models re-affirmed the importance of identifying and paying attention to both core and support activities in the strategic planning process. In addition, it became clear that strategic plans should be reinforced with other institutional plans. In Higher Education, it is imperative to have plans for support functions such as Infrastructure, Human Resources, Information Technology, Financial and Risk Management.

Table 6.2 provides a summary of factors that affect strategic planning in general, in Higher Education and in NMMU. Factors that influence strategic planning are the same whether considered from an organisational, Higher Education or NMMU perspective. However, differences on aspects such as the importance attached to strategic planning, the regulatory reporting requirements and frequency of monitoring performance, the familiarity of stakeholders with planning processes and the actual plans need to be ascertained.

Table 6.2: A summary of factors that influence Strategic Planning (organisational, Higher Education and NMMU)

Factor	Organisational	Higher Education	NMMU
The extent to which strategic plans are comprehensive	√	√	√
Alignment of strategic planning with processes for resource allocation	√	√	√
Appropriate choice of planning horizon	√	√	√
Stakeholder consultation and information sharing	√	√	√
Reporting standards and mechanisms for monitoring and evaluation of performance	√	√	
The role of leadership in giving direction and promoting buy-in	√	√	
Alignment of strategy development and implementation	√	√	√
Availability and access to information and the dominant information culture of an organisation	√	√	
Strategic Planning in Higher Education			
Operating in a turbulent and competitive environment		√	
Strategic planning is indispensable for survival in the sector	√	√	√
Understanding and catering for the needs of multiple stakeholders during strategic planning		√	√
Ease with which goals are defined and linked to appropriate performance measures	√	√	√
Extent to which corporate approaches and nomenclature is used		√	
Identifying core (primary) and support (enabling) activities		√	
Potential benefits from strategic planning processes	√	√	
Development of a clearly mapped strategic planning process roadmap	√		√
Understanding the internal and external operating environment from situational analysis	√	√	√
A clear distinction between core and support activities	√		√

Table 6.2: A summary of factors that influence Strategic Planning (organisational, Higher Education and NMMU) (Continued)

Factor	Organisational	Higher Education	NMMU
Identification of enabling conditions in pursuance of core activities		√	√
Alignment of plans and strategies at strategic, tactical and operational levels	√		√
Annual operating plans aligned to institutional long-term strategies are intended to guide resource allocation	√	√	√

Strategic planning is a key governance process. Section 6.3 provides a summary on the literature on governance mechanisms at the disposal of universities and the state of governance in South African Higher Education.

6.3. Governance in Higher Education

Chapter Three discussed governance in Higher Education. The reviewed literature on governance underscores the need for Higher Education Institutions to embrace tested corporate governance best practices in order to remain sustainable. In instituting governance in Higher Education, attention should be paid to the various stakeholders and their interests (Broere, Geysers and Kruger, 2002:5). The stakeholder groups and governance structures require particular information to enable them to exercise their governance roles (Herzig and Godemann, 2010:1065). In addition, funding requirements impose certain reporting requirements that universities must comply with before they receive funds from the Government (Steyn and De Villiers, 2005:7).

Legislation is a necessity, although on its own it is insufficient to guarantee compliance and enforcement of good governance practices in universities. The concept of corporate citizenship recognises that public Higher Education Institutions are juristic persons that should operate responsibly. There should be a conscious effort to ensure that governance bodies comprise individuals with sound understanding of the governance role (IoD, 2009:20; Hall, Symes and Luescher, 2002:24). Governance will remain hollow if the information systems and reporting systems do not provide complete, accurate, reliable and timely information to relevant stakeholders. This information needs to be easily accessible and digestible to be utilised fruitfully by the stakeholders (Coope, 2004:20-21; IoD, 2009:2; Hedberg and Malmberg, 2003:154).

Governance practices in international Higher Education were discussed in Section 3.3.3 and approaches to the application of governance were identified. Various institutions, depending on the extent of Government control, approach governance in different ways. Notwithstanding the autonomous nature of Higher Education Institutions, good governance is imperative for their sustainability (Wang, 2010:490).

Chapter Three also provided a broad overview of the South African Higher Education landscape. Higher Education Institutions were categorised based on indicators for good governance. The National Plan for Higher Education's objectives, the National Qualifications Framework (NQF) and the funding regime for public universities were discussed. The aspects that characterise the governance system of South African Higher Education include the following:

- The intended outcomes of the National Plan for Higher Education are expected to find expression in the activities and outcomes of Higher Education Institutions;
- There are a number of key stakeholders representing various interest groups that constitute the governance system of Higher Education. The various stakeholders are represented at various governance structures which include the University Senate, the Institutional Forum, the Student Representative Council, organised labour and the University Council;
- Each stakeholder group has information requirements that are peculiar and important in enhancing governance;
- Higher Education Institutions operate within certain regulatory parameters. A combination of self-regulation and compliance-based regulation contribute in promoting the ideals espoused in promulgated legislation aimed at steering and ensuring quality in the sector;
- The key Government regulatory bodies include the Department of Higher Education and Training (DHET) and Department of Science and Technology (DST), Department of Labour, the National Treasury and the South African Qualifications Authority (SAQA);
- This regulatory environment imposes certain reporting requirements Higher Education Institutions;
- A systematic and transparent model exists for allocating funds to Higher Education Institutions; the stringent reporting requirements through HEMIS submissions ensure that fairness and transparency are maintained in the system of fund allocation;
- Higher Education Institutions operate in increasingly fast-changing environments wrought with risks as well as opportunities. International trends in Higher Education point towards stronger

governance systems. Therefore, universities that ignore the recommendations from good governance best practices such as the King III Report do so at their own peril; and

- The approaches to institutional decision making differ slightly depending on the historical background of the Higher Education Institution in question.

The need to pay attention to strengthening governance in South African Higher Education, especially in light of the increasing number of universities that are under administration mainly due to failures in governance, emerged from the literature review. Therefore, ensuring the sustainability of organisations is an important governance function. Governance structures require information in order to carry out their oversight role. Section 6.4 provides a summary of Sustainability Reporting in Higher Education.

6.4 Sustainability Reporting in Higher Education

Chapter Four reviewed the literature on Sustainability Reporting during which various Sustainability Reporting approaches and practices were considered. The literature reviewed underscored the need for organisations to move towards balanced and integrated reporting which will go a long way towards promoting fair representations of organisational development (Lackmann, Ernstberger and Stich, 2012:111). A comprehensive review of the available Sustainability Reporting models and approaches was provided (Lozano, 2006:965). Higher Education Institutions can choose the best-of-breed from available frameworks.

Best practices in corporate governance require organisations to give balanced reports to stakeholders (IoD, 2009:10). For example, the King III Report on governance best practices promotes balanced and integrated reporting that covers economic, environmental and social aspects. Adherence to these guidelines advances governance and sustainability. In designing sustainability reports, the interests of stakeholders should be kept in mind (Herzig and Godemann, 2010:1065; IoD, 2009:11).

The benefits associated with adopting Sustainability Reporting remain compelling regardless of organisation and sector (Hedberg and Malmborg, 2003:154; Tenuta, 2010:163; Petrini and Pozzebon, 2009:180). The increasing number of organisations and countries advocating the adoption of global best practices such as the Global Reporting Initiative (GRI), the Balanced Score Card (BSC) and other standards are encouraging catalysts towards the development of generally accepted reporting standards (Dumay, Guthrie and Farneti, 2010:536).

Sustainability Reporting is relevant to Higher Education Institutions(Lozano, 2006:70). Integrated reporting is a recommended way of introducing a system of Sustainability Reporting in an organisation

(Sadler and Smart, 2010:4; Eccles and Armbrester, 2011:13-14). The factors which influence the introduction of Sustainability Reporting are summarised in Table 6.3.

Table 6.3: A summary of factors which influence Sustainability Reporting (organisational and Higher Education)

No.	Factors influencing Sustainability Reporting in organisations	Organisation	Higher Education
1	Global Sustainability Reporting best practices, guidelines, norms and certifications	√	√
2	Changes in the regulatory environment	√	√
3	Recommendations from oversight bodies such as auditors and verification of reported information by third parties	√	√
4	Increased awareness of reporting requirements for responsible corporate citizenship	√	√
5	Advocacy role of special interest groups such as the media and pressure from regulatory bodies	√	√
6	Increase in the scope of reporting in line with information requirements from various stakeholders	√	√
7	Expectations of positive spin-offs such as risk management, improved image, effective communication with stakeholders, keeping up with reporting trends and ability to attract staff and students	√	√
8	Improvement in the quality of reporting as a result of increased scope and complexity of reporting	√	√
9	Use of sector-specific standards and reporting metrics	√	√
10	The combined voluntary and compliance aspects of Sustainability Reporting	√	√
11	Awareness and training on Sustainability Reporting best practice	√	√
12	Level of sophistication of an organisation's information systems to integrate information for ease of reporting	√	√
13	Level of maturity in an organisation's reporting capability	√	√
14	Integrated approach to planning, monitoring and evaluation	√	√
15	Strengthened corporate governance with emphasis on risk management	√	√
No.	Performance reporting		
1	Use of international Sustainability Reporting standards such as the GRI, Dashboard and the Balanced Score Card (BSC)		√
2	Use of the Balanced Score Card (BSC) for Sustainability Reporting	√	
3	Adherence to quality assurance standards such as the EFQM	√	√
4	Use of the Extended Performance Reporting Framework (EPRF)	√	√
No.	Balanced Score Card for reporting		
1	Financial information	√	√
2	Performance against goals in the strategic plan	√	
3	Compliance with the regulatory requirements	√	√
4	Contribution towards Corporate Social Responsibility and community engagement	√	√
5	Environmental stewardship	√	√

Source: Author's own construct.

Table 6.3 summarises factors that emerged from the review of literature on Sustainability Reporting. The drivers for Sustainability Reporting practices are the same regardless of sector. Section 6.5 discusses available Business Intelligence tools and technologies that could facilitate Sustainability Reporting in Higher Education Institutions.

6.5 Business Intelligence in Higher Education

The rationale for and benefits of Business Intelligence (BI) were discussed in Chapter 5. As is the case in the private sector where decision making is aimed at increasing profits through informed decision making, BI tools and technologies can also be used in the public sector organisations such as Higher Education Institutions to identify opportunities and also to provide early warning signs.

Business Intelligence (BI) tools and technologies are important for decision support and planning purposes (Kaplan and Norton, 2011:168-169). The increase in volume of fast-changing information and the need to make business sense of the data sets require organisations to deploy technologies that will enable them to seize the opportunities presented by digitisation of data (Isik, Jones and Sidorova, 2013:13). While the architecture of the data marts and data warehouses is crucial to the success of BI, the overall corporate strategy for BI should, however, transcend the collection and processing of data.

Business Intelligence capability is built over a time period and organisations do well to plan their BI roadmap. The benefits and impact of BI should be felt in organisations when data becomes available and is used as a basis for making decisions. In addition, performance management at individual and organisational level is greatly enhanced by use of BI technologies (Sabherwal and Becerra-Fernandez, 2011:14). It is therefore important for organisations to equip their knowledge workers with tools that will facilitate reporting of key performance parameters truthfully.

On account of the benefits of BI and with the critical role data analytics will play in the future, organisations should promote institutional cultures that attach value to information (Ward and Peppard, 2002:470). The discussion in this chapter has indicated that institutions have the opportunity to choose from a wide array of BI tools and techniques. Table 6.4 below provides a summary of key factors that influence BI capability.

Table 6.4: Summary of factors influencing BI in Higher Education

Factors Driving BI	Organisational
Increase in the volume of data and consequent complexity in decision making	√
Technological progress	√
Government regulations	√
Reporting gaps in the existing ERP systems	√
Internal drive for better reporting and urge to remain competitive	√
Sustainability Reporting requirements	√
Stakeholders' information requirements	√
Factors that influence BI in organisations	
Information culture of the organisation (Functional, sharing, enquiry and discovery cultures)	√
Data quality	√
Extent of use of information in business processes	√
Flexibility of the BI system	√
Alignment of BI goals with organisational objectives	√
Challenges associated with BI	
Data latency, analysis latency and decision latency	√
Unavailability of data or non-existence of data	√
Unstructured or incomplete data	√
Lack of a data and information management strategy	√
Lack of integration amongst information systems	√
Staleness of information and unsuitability for decision making	√
Poor information presentation	√
Lack of skills to utilise BI technologies	√
Level of organisational/institutional BI capability	
Organisational memory (information storage)	√
Information integration (synthesised data about past, present and future from different source systems)	√
Insight (analyses and scenario planning)	√
Presentation (information presented in easily understandable and accessible ways)	√
BI Tools and technologies	
Strategic (OLAP, visualisation, digital dashboards, scorecards); Tactical (analytics, RFID, data, text and web mining); Operational (data warehousing, ERP, document management)	√
Medium of reporting	
Websites and the internet, brochures, newsletters, published annual reports	√
Benefits and impact of BI	
Increased autonomy and flexibility for information users	√
Getting more information from the same data	√
Improved decision making	√
Time saving	√
Solving strategic organisational problems	√
Improved business processes	√
Improved operational performance	√
Ability to identify new opportunities	√
Ability to comply with regulatory reporting requirements	√

Section 6.6 consolidates the contributions from the preceding sections by presenting a preliminary Sustainability Reporting Framework for Higher Education Sustainability Reporting and links the key concepts discussed with the empirical studies.

6.6 A conceptual Framework for Sustainability Reporting in South African Higher Education

Institutions

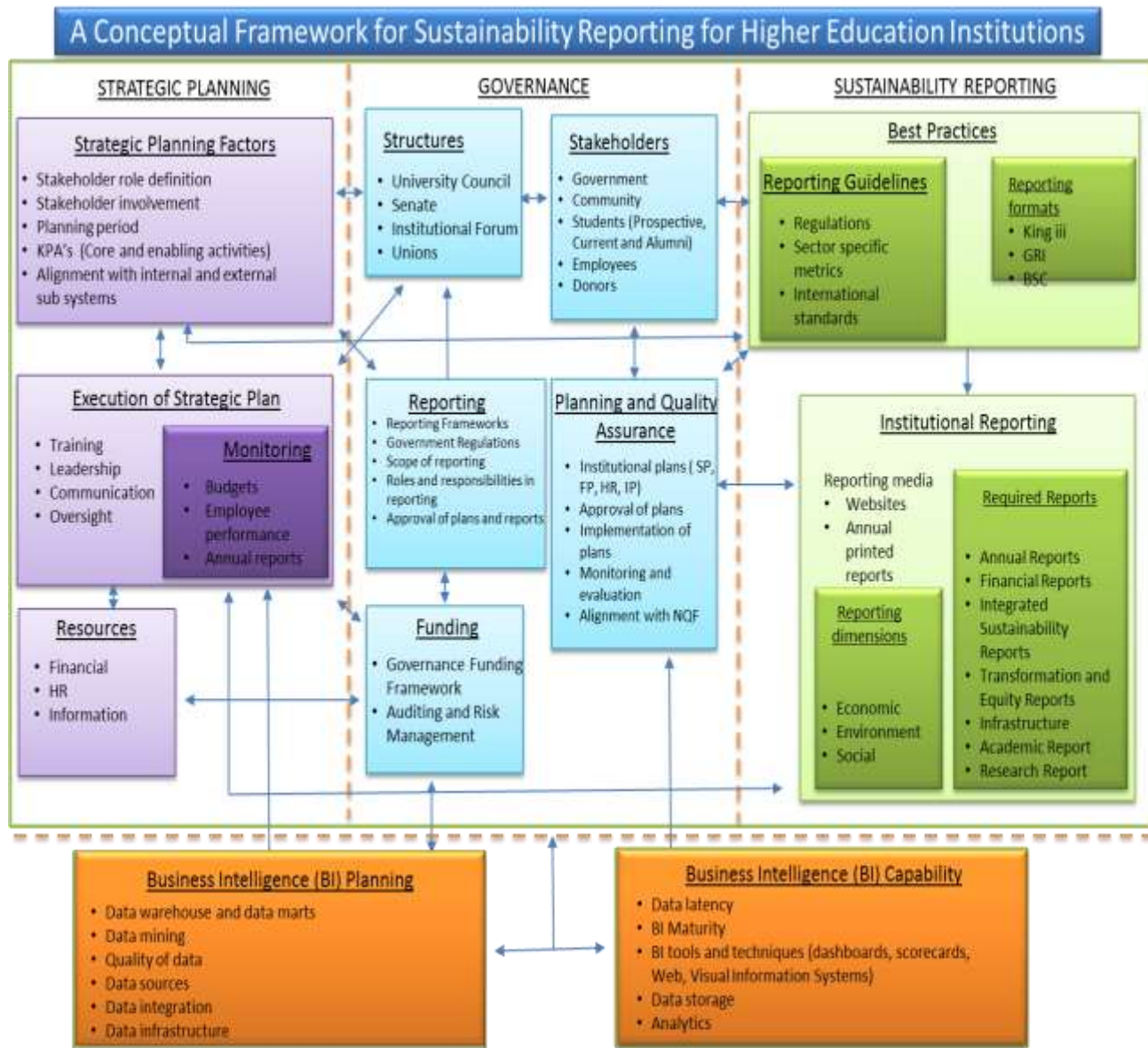
Frameworks serve to display and present data in a form that can be used to compare various outcomes. In addition, frameworks are supported as a means of bringing simplicity while providing a common language and platform for framing questions (Afuah, 2009:35-66, 324-325).

The conceptualisation of a framework is based on the key requirements of Sustainability Reporting. It depicts the desired outcome where Sustainability Reporting gives rise to a sustained reporting mechanism that will be used to track organisational performance by using the parameters set by the government or at the regulating bodies of the higher institutions of learning.

Figure 6.2 depicts the proposed conceptual framework based on the literature reviewed. The conceptual framework is based on the interface between strategic planning, governance, Sustainability Reporting and the supporting BI infrastructure. The framework lifts the key components in enabling Sustainability Reporting to be implemented in Higher Education Institutions. Strategic planning and good governance are mutually reinforcing concepts – strategic planning and monitoring thereof are a product of good governance. Similar to strategic plans, sustainability reports, provide a holistic view of the organisation. In order for sustainability reports to be generated, organisations need BI capabilities that consolidate data from multiple functional areas and thus enable integrated reports to be produced. BI also supports strategic planning and governance processes.

Higher Education Institutions can customise their sustainability reports from available best practice reporting formats such as the GRI and Balanced Score Card (BSC). In South Africa, the aspects of reporting that should be considered by governance structures are contained in the King III guidelines.

Figure 6.2: A Conceptual Framework for Sustainability Reporting in Higher Education Institutions



Source: Author's own construct

Conceptually, the South African Higher Education reporting cycle operates and is guided by government reporting requirements and regulations. The framework depicts the various factors that influence Sustainability Reporting and the interactions between these factors. The Framework is anchored on four key pillars – strategic planning, governance, best practices and BI. Governance entails identifying and empowering structures that play an important oversight and management role.

There are many BI tools and technology which support Sustainability Reporting according to best practices and government regulations such as the Higher Education Management Information Systems (HEMIS). The regulatory framework imposes reporting requirements. BI tools and technologies such as the Balanced Score Card (BSC) and dashboards can be used. Grant (2010: 26-27) states that the purpose of analytical tools is not to provide answers but to help in understanding issues involved. This process will culminate in the annual evaluation and status reports. The integration of these reports aided by effective business intelligence will strengthen the governance and management processes of institutions through the iterative process of monitoring, evaluation, early warning and undertaking corrective action. The end-to-end process envisages a situation where feedback is given at every stage causing an evaluation and redress at every stage.

6.7 Summary

The study reviewed literature on the four key themes of the research: strategic planning, governance, Sustainability Reporting and Business Intelligence (BI). Based on the literature reviewed, answers to the research questions that are addressed in Chapters 2-5 resulted in the development of a conceptual Framework for Sustainability Reporting for Higher Education Institutions. This conceptual framework identifies the link between aspects that emerge under each of the four themes.

Chapter Seven will present the research design, data collection instruments, data analysis, ethical considerations while carrying out the study, data validity and reliability, scope and delimitation of the research and the methodology adopted in the study.

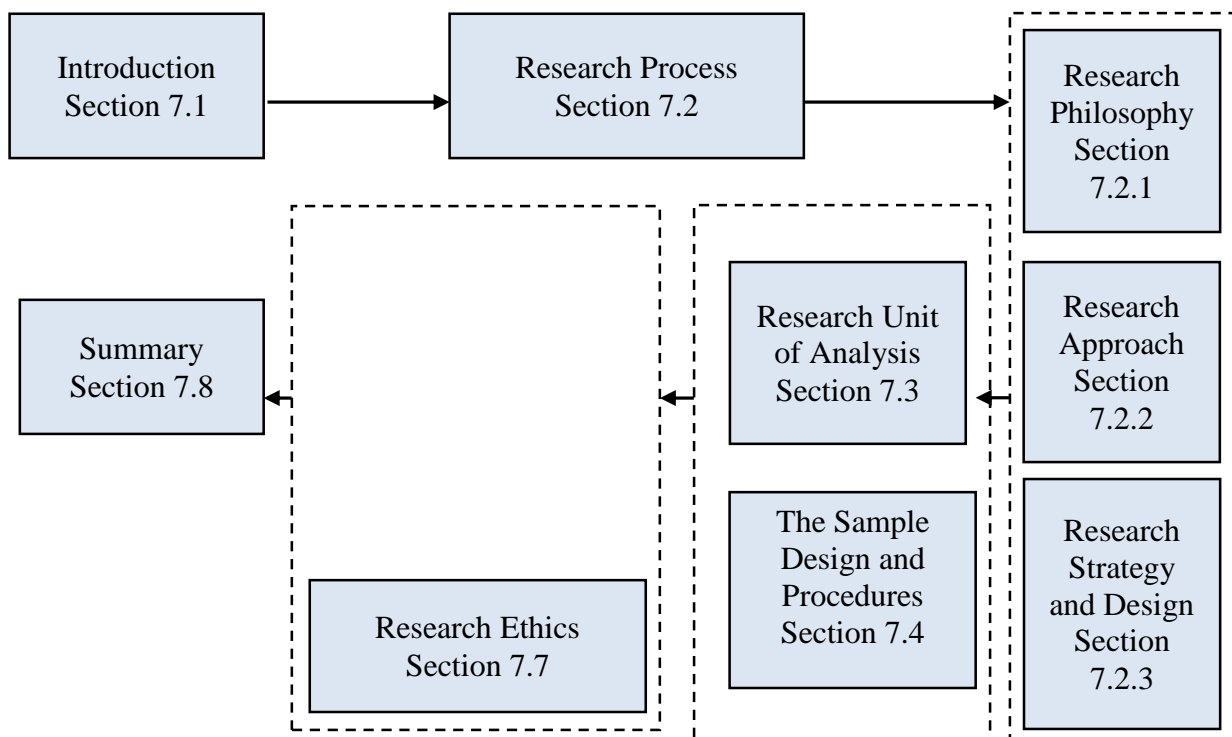
CHAPTER 7: RESEARCH DESIGN AND METHODOLOGY

7.1. Introduction

Chapter Six consolidated the literature reviewed in preceding chapters, which resulted in a conceptual Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI). Chapter Seven presents the research design that will be used to find appropriate answers to the research questions posed in this study. Every type of study follows a logical sequence that links empirical data to the study's research questions and conclusion – the research design (Yin, 2014:28). The main research question in this study is: *What are the components of a sustainability reporting framework for South African Higher Education Institutions?*

This chapter covers aspects such as the research process (Section 7.2), the research unit of analysis (Section 7.3), the sample design and procedures (Section 7.4), data collection methods and procedures (Section 7.5), analytical methods and procedures (Section 7.6) and research ethics (Section 7.7). Section 7.8 provides a summary of the chapter. The chapter layout is shown in Figure 7.1.

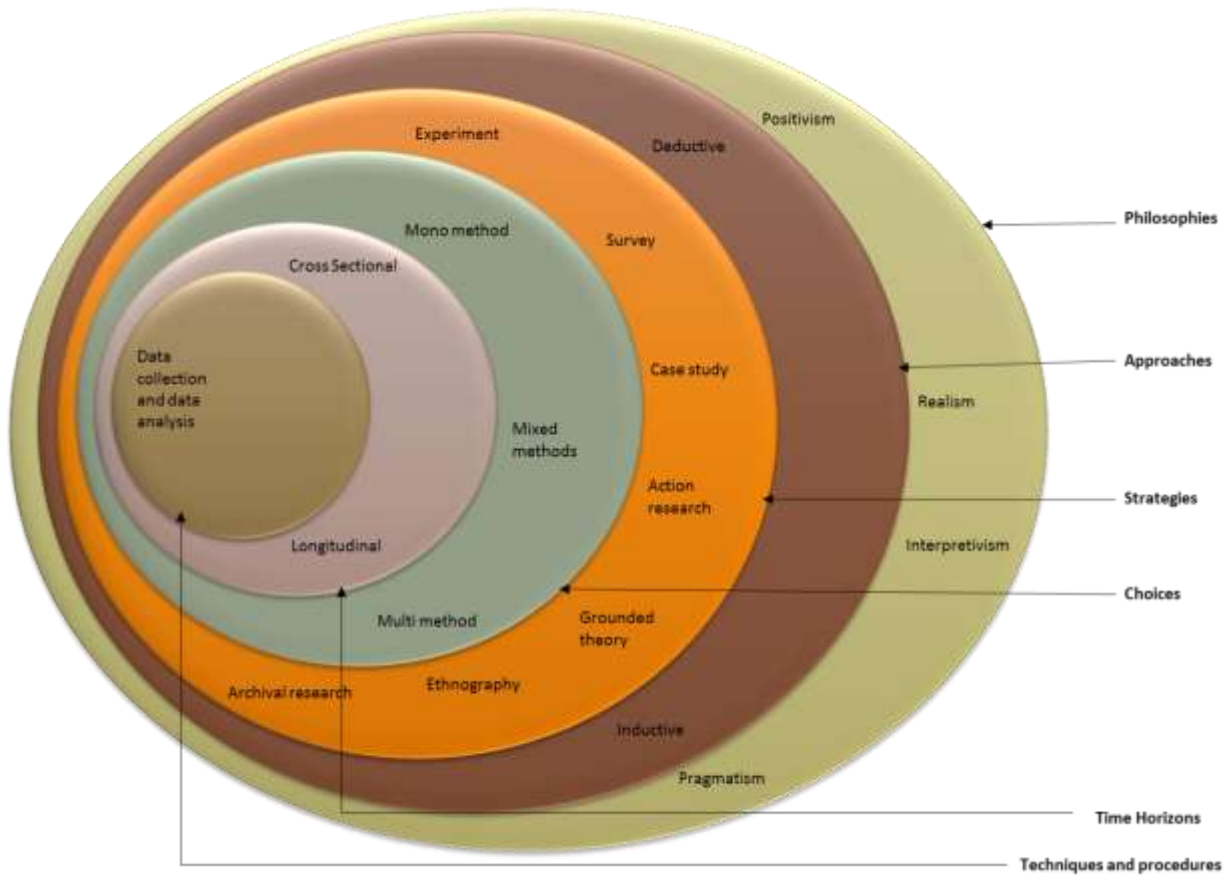
Figure 7.1: Chapter 7 outline



7.2 Research Process

Figure 7.2 illustrates a generic research process “onion”, showing the relationship between the various aspects of the research process. The research ‘onion ring’ illustrates the choice of research philosophies; research approaches; research strategies, time horizons and data collection methods (Saunders, Lewis and Thornhill, 2009:108). The research process forms the basis for the research methodology and design selected and adopted for this study.

Figure 7.2: The Research Onion Process



Source: Saunders, Lewis and Thornhill (2009:108)

7.2.1 Research Philosophy

Research studies can be undertaken using any of the predominant research paradigms – positivism, interpretivism, realism and pragmatism (Saunders, Lewis and Thornhill, 2009:108-116). Positivism and interpretivism are the two most commonly used research philosophies (Blumberg, Cooper and Schindler, 2011:17-18). Table 7.1 provides a summary of the main research philosophies in management research.

Table 7.1: Comparison of research philosophies

	Positivism	Realism	Interpretivism	Pragmatism
Ontology: The researcher's view of the nature of reality or being	External, objective and independent of the social actors	Is objective. Exists independently of human thoughts and beliefs or knowledge of their existence (realist) but is interpreted through social conditioning (critical realist)	Socially constructed, subjective, may change, multiple	External, multiple, view chosen to best enable answering of research question
Epistemology: The researcher's view regarding what constitutes acceptable knowledge	Only observable phenomena can provide credible data, facts. Focus on causality and law like generalisations, reducing phenomena to simplest elements	Observable phenomena provide credible data, facts. Insufficient data means inaccuracies in sensations (direct realism). Alternatively, phenomena create sensations which are open to misinterpretation (critical realism). Focus on explaining within a context of contexts	Subjective meanings and social phenomena. Focus upon the details of situation, a reality behind these details, subjective meanings motivating actions	Either or both observable phenomena and subjective meanings can provide acceptable knowledge dependent upon the research question. Focus on practical applied research, integrating different perspectives to help interpret the data
Axiology: The researcher's view of the role of values in research	Research is undertaken in a value-free way, the researcher is independent of the data and maintains an objective stance	Research is value-laden; the researcher is biased by world views, cultural experiences and upbringing. These will impact on the research	Research is value bound, the researcher is part of what is being researched, cannot be separated and so will be subjective	Values play a large role in interpreting results, the researcher adopting both objective and subjective points of view
Data collection techniques most often used	Highly structured, large samples, measurement quantitative, but can use qualitative	Methods chosen must fit the subject matter, quantitative or qualitative	Small samples, in-depth investigations, qualitative	Mixed or multiple method designs, quantitative and qualitative

Source: Saunders, Lewis and Thornhill (2009:119)

Table 7.1 compares the four main research philosophies - positivism, realism, interpretivism and pragmatism – using the researcher’s view of the nature of reality (ontology), what constitutes acceptable knowledge (epistemology) and the role of values in research (axiology). The research methods that are associated with particular paradigms are also listed.

The purpose of interpretivist research is to acquire meaning and understanding in a certain context and the researcher is part of what is being researched. On the other hand, positivists believe that one reality exists and it is the researcher’s task to discover that reality (Saunders, Lewis and Thornhill, 2009:113-115). However, Blumberg, Cooper and Schindler (2011:18) argue that in practice, some researchers combine the two philosophies giving rise to another branch of philosophy known as realism. Realism accepts the existence of reality independent of human beliefs and behaviour while acknowledging the subjectivity inherent in humans. Saunders, Lewis and Thornhill (2009:109) add that some research questions fall neatly into neither positivism nor interpretivism, in which case pragmatism is adopted.

The research study is conducted in a South African Higher Education Institution in which the author of this research is employed. The purpose of this research study is to propose a Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI). Interpretivism, with elements of positivism such as quantitative analysis, is used in this research. Interpretivism is adopted for this study in recognition of the different social and management contexts of Higher Education Institutions. The research questions posed in this study make allowance for respondents, who are active participants in Higher Education, to use their lived experiences in responding. However, some questions relate to specific issues requiring standard responses. The next sub-section discusses the research approach.

7.2.2 Research Approach

The choice of research approach in a study is influenced by whether an inductive or deductive approach to research is adopted. Induction builds theory as data are collected whereas deduction works from a set theory and seeks to find supporting evidence to advance or refute the theory. Therefore, studies characterised by limited literature lend themselves to an inductive approach while studies characterised by moving from theory to data are better handled through a deductive approach (Saunders, Lewis and Thornhill, 2009:124-125).

In this study, a combination of deductive and inductive approaches was followed because there is a growing body of literature on sustainability reporting in general but not much has been explored in the

Higher Education Institutions. The choice of a deductive approach is informed by the nature of the study which attempts to establish and explain causal relationships between aspects of the four interdependent themes: strategic planning, governance, sustainability reporting and Business Intelligence. The adoption of an inductive approach is based on the study's objective, namely to develop a framework based on aspects relating to sustainability in South African Higher Education Institutions. Researchers should choose an approach that is both practical and appropriate for the study in question (Saunders, Lewis and Thornhill, 2009:127).

7.2.3 Research Strategy and Design

Every attempt at scientific research requires a research strategy that is carefully tailored to eventually meet the exact, identified needs of the research; the communities, the envisaged requirements as well as the research problem identified by the researcher. Although researchers can choose strategies such as experiments, surveys, case studies, grounded theory, ethnography and archival research, the most important criteria for selecting a strategy is to test how well a strategy answers the research questions and meets the research objectives (Saunders, Lewis and Thornhill, 2009:141). Good research design ensures that research objectives are met.

Research design is a plan of how one intends to conduct the research. Research design addresses the inner layers of the research "*onion*" (Figure 7.2) and therefore deals with strategies, choices and time horizons for the research (Saunders, Lewis and Thornhill, 2009:136). Research design is a plan or blueprint of how the research can be conducted (Mouton, 2009:55). It structures a given research project or programme in such a manner that the eventual validity of the research findings is maximised. Good research design is essential and indispensable to the social researcher because it gives direction to the envisaged research project.

Research design is a programme that guides the researcher in collecting, analysing, interpreting and observing facts (Bless and Higson-Smith, 1995:63). In order to ensure the reliability and validity of questionnaires used in data collection, a case-study research design was used, which also employed both quantitative and qualitative approaches. The choice of a case study approach is motivated further in the section that follows.

7.2.3.1 Use of Case Studies

A case study is defined by Johansson (2003:14) as a contemporary and complex functioning unit to be investigated in its natural context with a multitude of methods. Yin (2014:16) writes that case study research design is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used.

The most appropriate method of conducting empirical research in the interpretive tradition is the in-depth case study (Walsham, 1993:14). Although case studies are faulted for non-representivity and for lack of statistical generalisability, in interpretive studies, the validity of “extrapolation from an individual case study or cases depends not on the representativeness of such cases in a statistical sense, but in the plausibility and cogency of the reasoning used in describing results from cases and drawing conclusions from them” (Walsham, 1993:15). This view is supported by Ragin (1992:2-3) who states that at a minimum, every study is a case study because it is an analysis of social phenomenon specific to time and place. Ragin (1992) points out that scientists in the social sciences use evidence that is repetitious and extensive to substantiate their arguments while in case study research statements, it is implied that the chosen case represents other cases.

Case study research has certain advantages. Cano (2003:2) asserts that through a case study, a researcher understands the dynamic present in a single setting by describing the situation, testing theory or generating theory. Olivier (2009:14) cites the ability to collect a variety of information as being an advantage of using case studies. Welman, Kruger and Mitchell (2005:25) state that the rationale for using a case study is to understand the uniqueness and idiosyncrasies of a particular case in all its complexity, in this case, how the sustainability reporting is viewed and practised. Bryman (1988:90) argues that case studies are useful for generalising findings because a wide range of different people and activities is analysed.

This study included a case study of a South African Higher Education Institution. Nelson Mandela Metropolitan University (NMMU) was used as the case study. NMMU is a comprehensive university located in the Eastern Cape Province of South Africa. In 2010, the university developed a 10-year strategy called Vision 2020 (V2020) in need of performance monitoring. Since communication and reporting are key ingredients in the planning process, NMMU was selected as the case study because of the development and implementation of a new strategic plan - Vision 2020. In addition, Sustainability

Reporting practice takes root in organisations with strong governance structures and where planning is decentralised as is the case at the NMMU. Furthermore, the researcher works at NMMU and he works in a team that has been given the task to develop a mechanism for Sustainability Reporting for the University. In this study, a case study approach was used by the researcher as it allowed the researcher to retain the holistic and meaningful characteristics of real-life events and also to gain knowledge and insight about Sustainability Reporting from different angles, both locally and globally. The choice of a case study was also selected in order to establish the status and trends of Sustainability Reporting within and across Higher Education Institutions. Case studies should be well defined or demarcated; recurrent patterns and consistency should be searched in data; and results, where possible, should be corroborated by using other methods (Welman *et al.* 2005:194).

7.2.3.2 Use of surveys

Blumberg, Cooper and Schindler (2011:256) state that survey research tends to address well defined, focused problems while case studies take a broader view of a problem as they allow the researcher to gain insight from many perspectives. The survey strategy is popular in business and management research (Saunders, Lewis and Thornhill, 2009:144).

The objective of the research design is to plan and structure the project and therefore the present study employed the quantitative and qualitative descriptive design in which the former makes use of questionnaires as the research technique for data collection. Research that studies phenomena and looks at broader comprehension of such particular phenomena and attributes measures in numbers or statistics is often referred to as the quantitative research methodology. The quantitative research methodology often relies upon measurement and uses various scales and weightings in the research analysis. Numbers, therefore, form a coding system by which different cases and different variables are represented for ease of comparison (Babbie and Mouton, 2001:10,36; Bless and Higson-Smith, 1995:43-44).

Quantitative research focuses primarily on the description of attitudes and opinions whilst measuring the effect of one event or variable upon another variable or event. The researcher, investigating the kind of data needed in the present study, deals with quantitative and qualitative research combined, since some of the items in the questionnaires generate responses that are quantitative in nature on the one hand and on the other hand generate responses that are qualitative in nature. The questionnaires used correspond with names of the surveys as described in Table 7.2.

Table 7.2: Questionnaires used for the surveys

Questionnaire Name	Survey description
GPSAHE	Governance Practices in SA Higher Education (GPSAHE)
SRPHESA	Sustainability Reporting Practices in Higher Education in South Africa (SRPHESA)
SRIHE	Sustainability Reporting in International Higher Education (SRIHE)
SRPNMMU	Sustainability Reporting Practices at the Nelson Mandela Metropolitan University (SRPNMMU)

Source: Author's own construct

The choice of research philosophy (discussed in Section 7.2.1) influences whether research is quantitative or qualitative. According to Struwig and Stead (2013:15), in general, the quantitative method is supported by the positivist paradigm, which leads to regarding the world in terms of observable, measurable facts. Table 7.3 contrasts quantitative and qualitative research.

Table 7.3: Differences between qualitative and quantitative research paradigms

Quantitative research	Qualitative research
Deals with evaluating objective data	Deals with subjective data produced in languages by respondents
Analysis is based on complex structured methods	Analysis is based on flexible and exploratory methods
Deals with probabilities in abstracting realities	Concerned with investigating constraints of day to day events
Understands facts from an outsider's perspective	Attempts to understand the insider's perspective of phenomena
Research process is kept as stable as possible.	Research process is dynamic and changing
The investigation is controlled in order to identify and isolate variables and is therefore particularistic	Holistic approach adopted with use of a wide array of data
Focused on establishing reliability	Focused on establishing validity
Involves large samples	Involves small samples

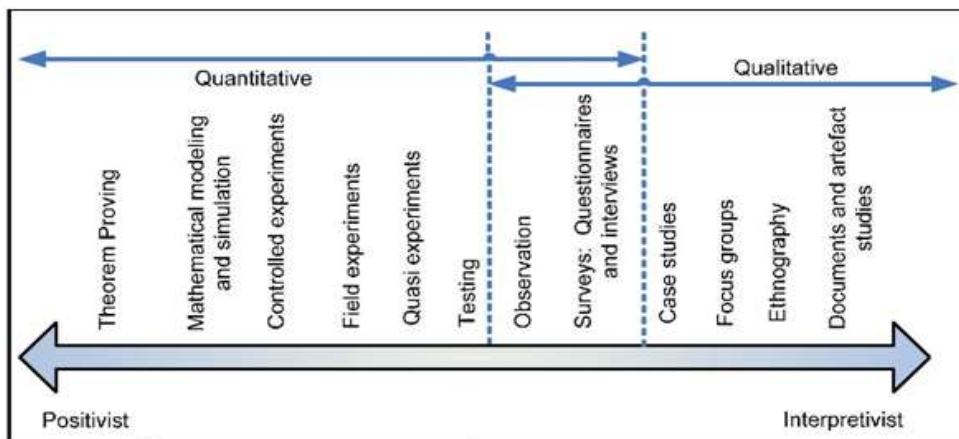
Source: Summarised from Welman, Kruger and Mitchel (2005:8-9)

Table 7.3 indicates the differences between qualitative and quantitative research methodology paradigms. Qualitative and quantitative research methods are not mutually exclusive (De Villiers, 2005) and varieties of research benefits derives from adopting mixed research method approaches as

each research method has different assumptions and procedures and complement one another (Yin, 2014:65-66).

Figure 7.3 illustrates where the leading research methods are located on a positivist-interpretivist continuum and areas of overlap (De Villiers, 2005:143). The research methods illustrated in Figure 7.3 demonstrate that case studies and surveys, predominantly used in this study, are interpretivist and qualitative methods.

Figure 7.3: Research Methods and Strategies



Source: De Villiers (2005: 143)

Figure 7.3 shows that research methods are closely linked to the adopted research philosophy. However, methods such as use of surveys and observation can be used regardless of the philosophy adopted. Case studies can be used to gather both quantitative as well as qualitative information through the use of techniques such as structured interviews, direct observations and group discussions to become informed (Olivier, 2009:10-14).

Experiments, surveys, case studies, action research, grounded theory, ethnography and archival research are some of the commonly used research strategies. Some research methods such as ethnographic studies take place over long periods of time (longitudinal) unlike cross-sectional studies such as case studies or archival research. In choosing research methods, a single data collection technique (mono method) or more than one technique (multiple methods) can be used (Saunders *et al.* 2009:141-151).

This study entails a combination of a case study and use of surveys involving Higher Education Institutions in South Africa. Therefore, multiple data collection methods were used in this study in an attempt to enable triangulation of results. Mingers (2001:243) argues that since research methods stem from different paradigms, and hence focus on distinct aspects of reality, combining them, results in a richer explanation of a phenomenon.

In this study, in addition to the case study, surveys were administered to targeted respondents from diverse Higher Education Institutions. The questionnaires were customised in line with the expected knowledge and background of respondents. For example, the questionnaire to Registrars focussed on their job competencies and Sustainability Reporting practices at their specific institutions. The nature of the study did not lend itself to longitudinal studies because the research objectives and questions were based on the current status of elements of Sustainability Reporting in Higher Education Institutions. The choice of respondents is discussed in Section 7.3.

7.3 Research Unit of Analysis

The unit of analysis is either the object or person from whom the researcher collects data. Individuals most commonly constitute the unit of analysis in the study. In this case the researcher studied the conditions, orientations or actions of a group of individual people. The target population of people is also sometimes studied as the research universe. Mouton (1996:34) opines that a population refers to a collection of objects, events or individuals having some common characteristics that the researcher is interested in studying. Where an entire research universe is studied, for example, students, academic staff, practitioners or professionals including the business and public community, each constitutes one unit and can be compared to another group or another unit.

In this study, the unit of analysis comprised four surveys – Registrars of the 23 South African public universities, Information Managers in South African universities, Information Managers from some international universities and a case study at NMMU. Further, within the area under study at NMMU, information requirements of tactical and strategic managers including Heads of Academic Departments, Directors of School, Professional support and other stakeholders were identified. In pursuance of this goal, four surveys were conducted using questionnaires described in Table 7.4.

Table 7.4: Surveys conducted and their target audience

Survey Name	Survey description	Target audience
GPSAHE	Governance practices (GPSAHE) in SA Higher Education Institutions	University Registrars – the custodians of policy and governance at universities
SRPHESA	Sustainability Reporting Practices in Higher Education in South Africa (SRPHESA)	Chief Information Officers, Directors of Information Technology and managers responsible for management of information at all South African public universities
SRIHE	Sustainability Reporting in International Higher Education (SRIHE)	Managers of Information in EDUCAUSE (educause.edu) and CAUDIT (www.caudit.edu.au)
SRPNMMU	Sustainability Reporting Practices at the Nelson Mandela Metropolitan University (SRPNMMU)	Deans of Faculties, Directors of Professional and Support Services, Directors of School and Heads of Academic Departments

Source: Author’s own construct

In this study, four separate self-administered online and paper based questionnaires were sent out to four different groups of respondents. The first questionnaire was sent to Registrars of universities in South Africa. The second questionnaire was sent to individuals responsible for the management of information at all South African universities. A third questionnaire was sent to individuals responsible for information management at overseas universities in America and Australia. The fourth questionnaire was sent to Deans of Faculty, Directors of Schools, Heads of Departments and other managers responsible for strategy implementation at the Nelson Mandela Metropolitan University.

The validity of scores relates to the extent to which a measuring instrument measures what it was intended to measure (Struwig and Stead, 2013:145). Saunders *et al.* (2009:373) state that validity of a questionnaire is measured through content validity, predictive validity and construct validity. Content validity relates to the extent to which a questionnaire provides adequate coverage of the study objectives. Predictive validity is concerned with the ability to make accurate predictions while construct validity refers to the extent to which the questions measure the presence of constructs under investigation. The questionnaires consisted of open-ended questions, as well as closed-ended questions in which a 5-point Likert scale was applied. The results of the questionnaires were statistically analysed to measure the intended outcomes. The questions covered all the focus areas in the study.

Reliability measures demonstrate that a study can be repeated with the same results (Andrade, 2009:47). The questionnaires were tested for reliability through a pilot study (also known as field testing) whereby the questionnaires were sampled by representatives of target participants. The inputs received from the pilot study were used to improve the questionnaires. The questionnaires used defined terms, and components of constructs were listed to provide further clarity and reduce ambiguity.

7.4 Sample Design and Procedures

Kumar (2005:144) asserts that sampling is the process of selecting a few cases from a bigger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group, in other words a subgroup of the population, that a researcher is interested in. The main concepts used in sampling are described in Table 7.5.

Table 7.5 Three main concepts on sampling

Concept	Description
Sampling unit	A sampling unit consists of the things/people (elements) that are the focus of a study. The elements in a sample depend on the objective of the study
The population (universe)	A population is the combined total (aggregate) of all the elements the researcher is focussing on
The sampling frame	The sampling frame is a list of all the sampling units in the population from which the sample of the study is drawn

Source: Struwig and Stead (2013:114)

According to Struwig and Stead (2013:116-118), some of the common sampling methods include the following:

- Convenience sampling whereby a sample is chosen purely on the basis of availability;
- Judgement sampling in which a sample is selected on the basis of expert judgement on what is deemed to be the best; and
- Quota sampling which entails selecting a sample by using certain criteria.

Blumberg, Cooper and Schindler (2011:194-195) state that both quota and judgement sampling are examples of purposive sampling which is a non-probability sampling method. According to McMillan and Schumacher (2006:126), in purposive sampling, the researcher selects particular elements from the population, who will be representative or informative about the topic of interest. In this case,

judgement and quota sampling were employed to select participating institutions locally and globally based on sustainability reporting trends.

According to De Vos, Strydom, Fouche and Delport (2005:201), non-probability sampling is a sampling procedure whereby one does not know the population size of the members. The objective of choosing a sampling procedure is to select a sample that is representative of the population, from which the participants are drawn. Warwick and Linenger (1975:74) clarify that in purposive sampling, sample elements are chosen by the researchers using their own discretion; hence in this research the total population of international universities is critical.

In this research, the non-probability sampling techniques were used to judgementally arrive at sampled participating institutions. Convenience sampling was used in the selection of NMMU and institutions that are members of ASAUDIT, EDUCAUSE and CAUDIT as described in Tables 7.4 and 7.5.

7.5 Data Collection Methods and Procedures

Data collection methods and procedures are by far dictated by the type of data required for the study and other practical and logistical considerations such as access to data, accessibility and time in response to questions posed. In this study the researcher decided to obtain data from multiple sources, more importantly, participant observations, documentary and questionnaire surveys. This allowed for triangulation and consequently increased the levels of consistency, reliability, validity and acceptability of the data. Triangulation is elaborated on further in Section 7.6.

Official approval was obtained from the NMMU to get access to the relevant actors in the organisations and the beneficiaries. This was done in the form of ethics clearance obtained from the Ethics Committee. As the participation in the research was voluntary, consent to participate in the questionnaire survey was first sought from each participant. The contact with the university participants was easily secured as the researcher is the employee of the university under study. Saunders *et al.* (2009: 360-363) state that questionnaires are used in business and management research during surveys, case studies and experiments. Questionnaires may be self-administered. The respondent completes self-administered questionnaires usually served through the Internet or Intranet, postal service or traditional delivery and collection. The questionnaire is an instrument commonly used to observe data (Leedy, 1997:191). According to Riley, Wood, Clarke, Wilkie and Szivas (2000:96), the design of a questionnaire should be guided by the following guidelines:

- Giving clear instructions to participants;
- Use of simple, concise and polite language;
- Not making unrealistic demands to those completing the questionnaire;
- Asking about one topic and avoiding ambiguity;
- Ordering the questions correctly and making the layout easy to follow; and
- Testing the questionnaire before issuing it.

The four questionnaires were tested first before being administered. A statistician and a sample of individuals from the four target audience groups participated in the questionnaire pilot studies. The questionnaires were revised based on comments and suggestions received from the test group. Questions in the survey were grouped into the following categories in concert with the themes of the research questions and objectives:

- 1 Higher Education stakeholders and their information needs;
- 2 Monitoring of strategic plans in Higher education;
- 3 Institutional plans and Sustainability Reporting in Higher Education;
- 4 Information culture in institutions and use of Business Intelligence (BI) tools and techniques; and
- 5 Elements of Sustainability Reporting.

The process of administering the questionnaire is shown in Table 7.6 to provide the essence of the situation and observations made.

Table 7.6 Participating groups and response rate in the surveys

Survey and questionnaire Name	Mode of survey administered	Number distributed	Number completed and returned	Observations
<i>GPSAHE</i>	Online questionnaire	23 University Registrars	11	10 of the Registrars insisted on the views not being interpreted as the official views of their institutions.
<i>SRPHESA</i>	Combination of online and paper based questionnaires administered during a 3 day conference of South African Directors of Information Technology held at the NMMU in May 2012.	23	21	<ul style="list-style-type: none"> Some of the respondents expressed a desire not to comment on matters of governance. Being out of office at a conference enabled them time to complete the survey.
<i>SRIHE</i>	Online questionnaire	70 International universities	35	<ul style="list-style-type: none"> The test questionnaire indicated the need to customise terminology for the international audience. Respondents from North American Universities insisted on having a summary of the study before they completed the survey. Some of the respondents did not complete some sections of the questionnaire. Some CIOs referred the questionnaire to other sections/departments of their respective universities.
<i>SRPNMMU</i>	Online questionnaires	65	41	The respondents indicated a strong desire to know the results of the survey.
Totals		181	108	

Regarding the overall challenges experienced and how they were overcome, the response rates were slow and the researcher had to send reminders to respondents to complete the survey. In terms of Table 7.6, the response rate is more than 50% except in the GPSAHE survey. The reasons stated in Table 7.6

warrant such poor response, but in aggregate, the high response rate is sufficient to make sound judgments and scientific conclusions about Sustainability Reporting. Overall, Sustainability Reporting is a relatively new terminology and concept and as such, some respondents sought to first obtain a better understanding. The researcher provided a definition of Sustainability Reporting at the beginning of all online questionnaires and on two occasions on email to the respondents. Each survey took an average of 15 minutes to complete and this was stated upfront. This was to mitigate against non-completion of surveys due to time limitations.

Questionnaires used in the Sustainability Reporting in the International Higher Education (SRIHE) survey was customised and references to local (South Africa) terminology were given an international orientation. Cross-local and global comparisons were drawn thereby contextualising the issue of reporting within a global setting. The comparative data drawn from local and international institutions and persons added value to this research in making scientific deductions.

7.6 Analytical methods and procedures

A data capturing and cleaning process was put in place to capture data using 100% verification. All the captured data were verified. This means the data were checked and edited for logical consistency, for permitted ranges, for reliability on derived variables and for filtering instructions. After the data-cleaning exercise, the filtered data were then analysed.

Data analysis techniques were employed particularly to establish the status and trends of Sustainability Reporting within and across institutions both locally and internationally. Blumberg, Cooper and Schindler (2011:59) describe data analysis as reducing accumulated data to manageable volumes, summarising, establishing trends and patterns, and applying statistical and narrative techniques. As Saunders *et al.* (2009:480) put it, qualitative data need to be analysed and their meaning well understood.

Analysis encompasses a variety of cross-tabulation, frequency runs and other statistical techniques to provide an in-depth understanding of Sustainability Reporting. Various inferential statistical techniques were employed to determine relationships and differences between the indicators and demographic variables. Some of the statistical techniques that were used include computation and graphical analysis. A combination of descriptive and inferential statistics was used to analyse the

quantitative data from the each of the four surveys. A 5-point Likert scale with the following range, depending on the type of question, was used:

- 1=Strongly disagree to 5=Strongly agree;
- 1=None to 5= Extensive; and
- 1=Poor to 5=Excellent.

According to Saunders *et al.* (2009:450-452), significance testing can be achieved by testing the degrees of freedom (*df*) and the probability value (*P-value*). If the *P-value* is less than 0.05, a statistically significant relationship exists between the variables. In business and management research, it is inevitable to err in making inferences. Type I errors relate to concluding that variables are related when they are not, while Type II errors are the inverse. Of the two, Type I errors are considered more serious and strategies such as increasing the significance level from 0.05 to 0.01 can be used. Alternatively, instead of increasing the significance level, practical significance statistics can be calculated.

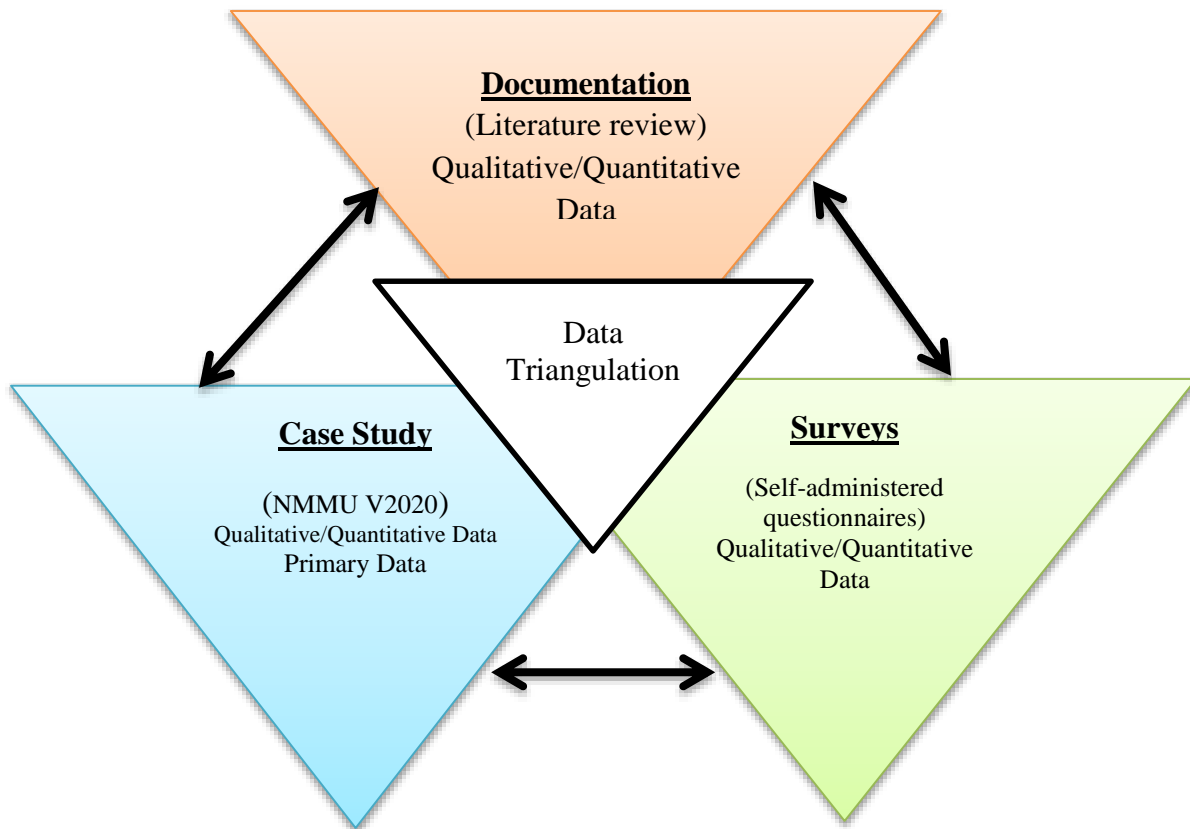
In this study, the analysis was largely based on dissecting each category of questions. Similar questions that had been posed to the survey groups were compared to establish correlations. The data collected from questionnaires were subjected to Analysis of Variance (ANOVA) to determine differences in responses. One-way analysis of variance (ANOVA) was used to determine the statistical significance of between group differences in terms of a single categorical variable degrees of freedom (*df*) and the probability values (*P-value*) were calculated and inferences made. The comparison of responses from different survey groups formed a sound basis for triangulation of data. The categories of variables were coded during the analysis to see if there were any correlations.

Patton (2002:563) avers that triangulation lends credibility and quality to research findings by countering the argument that conclusions have been drawn on the basis of a single perspective. Patton (2002) therefore proposes the following four types of triangulation:

- Data sources (data triangulation);
- Among different evaluators (investigator triangulation);
- Perspectives to the same data set (theory triangulation); and
- Methods (methodological triangulation).

Both data triangulation and methodological triangulation constitute the main approaches to triangulation in this study. Triangulation has been used to derive convergent evidence that strengthens the construct validity of the study. In this study, results from the literature review, NMMU case study and the other surveys were compared as shown in Figure 7.4.

Figure 7.4: Data triangulation sources



Source: Author's own construct

7.7 Research ethics

Briggs and Coleman (2007:110) argue that a key principle for conducting ethical research is that of voluntarism by the participants when engaging with research, while Holloway (1997:128) advises that researchers should consider and demonstrate ethical issues. In this sense the research was undertaken with a clear understanding that ethical imperatives need not be compromised. Rather, a highly professional ethical standard was maintained with a view to producing a credible and reliable source of information.

Blumberg *et al.* (2011:114) define ethics as “the study of the right behaviour”. Ethics is concerned with addressing the question of how to conduct research in a moral and responsible way. Bak (2004:28) explains that any research that involves people must show an awareness of the ethical considerations and an agreement to conduct the research in accordance with ethical procedures. The researcher, therefore, adhered to ethical guidelines by explaining the purpose and benefit of the study to the participant including the participants’ rights and protection. To this end, the professional code of ethics in any discipline and practice is of fundamental significance in all research projects. The ethical principles underpinning human subjects apply to any type of study and not only to experiments. In accordance with provisions of the NMMU ethics clearance process, the researcher maintained objectivity; adhered to the right of privacy and dignity of treatment; avoided causing personal harm to the participants of the project; held the information provided by the participants in strict confidentiality.

Also, the researcher monitored the data sourcing and review process in relation to issues of consistency of practice with rules and scientific procedures of data collection (whether qualitative or quantitative), objectivity, ethical behaviour and broad-based participation. Further, the researcher made sure that the data collected were all within the scope defined in the context and parameters of the study and that of the NMMU ethics policy imperatives. The researcher obtained internal ethics clearance from the Business School.

7.8 Summary

In this chapter a careful selection of appropriate research methods and data, and collection procedures were employed to elucidate the picture of Sustainability Reporting from the selected participating academic institutions and particularly at the NMMU. A combination of interpretivist and positivist research philosophies was adopted. Similarly, a combination of inductive and deductive research approaches was used in this study while the research strategy employed the use of a case study and surveys.

The combination of the techniques helped to enhance and enrich current knowledge as opposed to using a singular approach. The researcher was guided by the epistemic imperative of science in conducting the field survey. The anonymity, confidentiality and dignity of the respondents, therefore, were carefully protected. The data collection procedures used, both obtrusive and unobtrusive, were also intended to produce a complete, cohesive and unbiased report on the findings about the

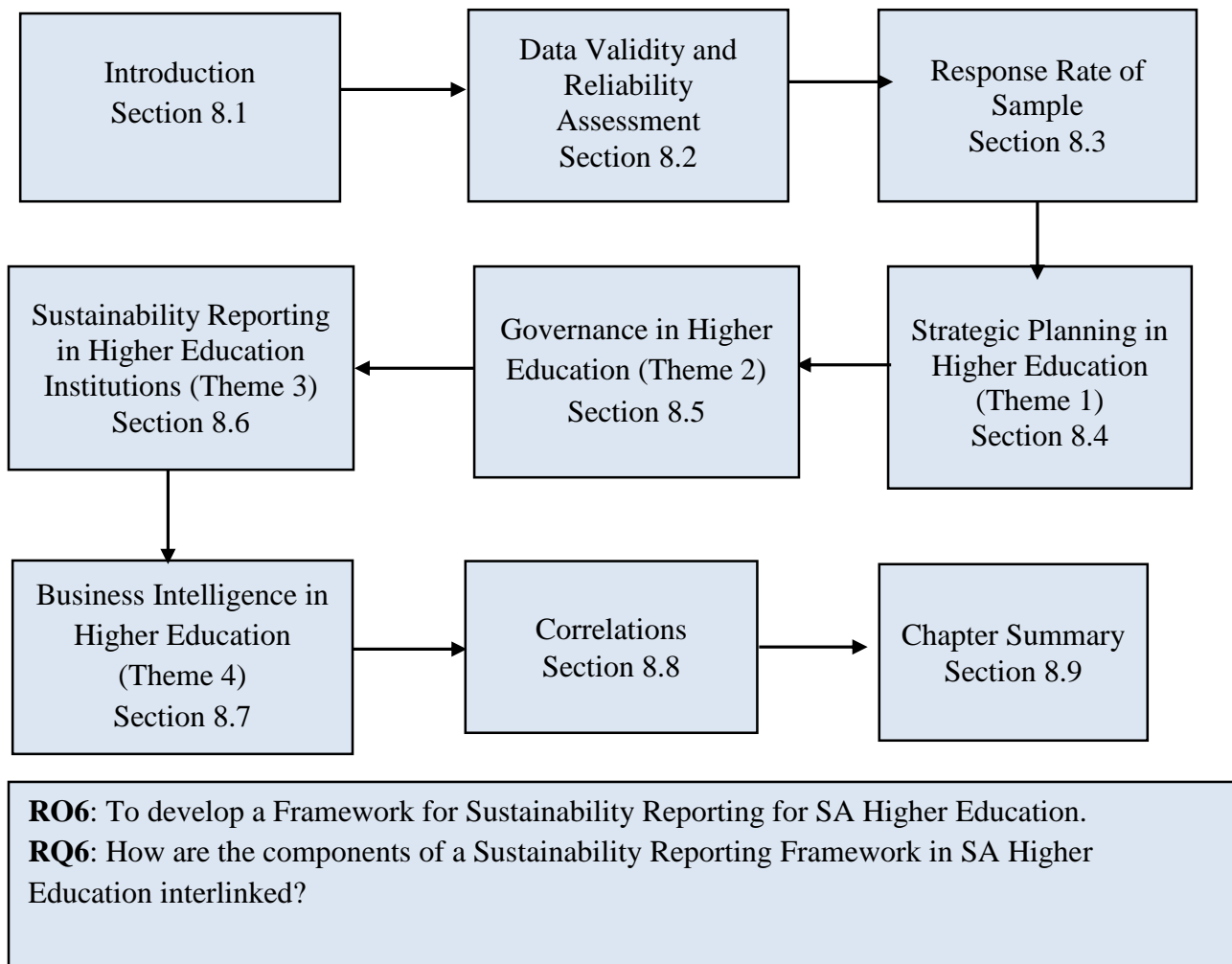
Sustainability Reporting processes of the academic institution under study. In the next chapter, the analysis and interpretation of the data are presented.

CHAPTER 8: EMPIRICAL RESULTS AND DISCUSSION OF THE FINDINGS

8.1 Introduction

Chapter 7 discussed the research design and methodology used in this study. The data collection and analysis procedures were outlined. After the introduction, Chapter 8 discusses data validity and assessment (sectioni 8.2), response rate of the sample (Section 8.3) and then presents an analysis of four main themes of the study in sections 8.4, 8.5, 8.6 and 8.7. Correlations are discussed in Section 8.8 followed by a Chapter summary in Section 8.9. The chapter layout, research questions and objectives are indicated in Figure 8.1.

Figure 8.1: Chapter 8 outline



In pursuance of the research objectives of this study, four surveys were administered as indicated in Table 8.1.

Table 8.1: Surveys conducted and their target audience

Survey Name	Survey description	Target audience
GPSAHE	Governance practices (GPSAHE) in South African Higher Education Institutions.	University Registrars who are custodians of policy and governance at universities.
SRPHESA	Sustainability Reporting Practices in South African Higher Education (SRPHESA).	Chief Information Officers, Directors of Information Technology and managers responsible for management of information at all SA universities.
SRIHE	Sustainability Reporting in International Higher Education (SRIHE).	Managers of Information in EDUCAUSE (educause.edu) and CAUDIT (www.caudit.edu.au).
SRPNMMU	Sustainability Reporting Practices at the Nelson Mandela Metropolitan University (SRPNMMU).	Deans of Faculties, Directors of Professional and Support Services (PASS), Directors of Schools and Heads of Academic Departments.

The surveys were designed to address the main research question which is:

What are the components of a Sustainability Reporting Framework for South African Higher Education Institutions?

The subsidiary research questions are based on the main research question and are as follows:

RQ1: What factors contribute to effective strategic planning in Higher Education Institutions?

RQ2: What are the characteristics of the South African Higher Education governance system?

RQ3: Which factors influence Sustainability Reporting in SA Higher Education?

RQ4: What are the key factors that influence BI in South African Higher Education?

RQ5: Which research design and methodology method is appropriate for a study on Sustainability Reporting in SA Higher Education?

RQ6: How are the components of a Sustainability Reporting Framework in SA Higher Education interlinked?

The data of all four questionnaires were coded and then edited to ascertain accuracy and completeness. Questions in each of the four surveys covered aspects of the research outlined in Table 1.3. The online survey tool *Survey Monkey* was used to administer the questionnaires. The data were exported to *Statistica*, the software package used to analyse the quantitative data. Qualitative data on the other hand were thematically analysed and categories created pertinent to the target groups. Various statistical techniques were utilised, namely descriptive statistics which included mean, standard deviations and inferential statistics which include ANOVA (*P-values*, degrees of freedom (df), frequencies and percentages). The findings are further presented using frequency distribution tables, cross-tabulations and various statistical graphs.

8.2 Data Validity and Reliability Assessments

The validity of scores from a measuring instrument refers to the extent to which the instrument measures what it is intended to measure (Struwig and Stead, 2013:145) and the two main types of validity are face validity and content validity. Face validity deals with whether the items measure what they claim to measure while content validity is concerned with theoretical content domain of the construct being measured. The validity of data in this study is based on face and content validity as the questionnaires were circulated to a pilot group to assess whether they agree on the data collected to address the research question.

The study assessed the reliability of the data collected to measure the variables of the study. The purpose of reliability assessment was to assess the internal consistency of the items in the questionnaires. Maree (2007:216) states that whenever a number of variables are used to measure a construct, a high degree of similarity among them is important to establish reliability.

The internal reliability is measured by the Cronbach alpha coefficient. The Cronbach alpha was computed to assess the reliability of the data collected from each survey. The final Cronbach alpha values ranged from 0.61 to 0.8 (SRPHESA survey), 0.60 to 0.91 (SRIHE survey) and 0.56 to 0.92 (SRPNMMU survey). These are elaborated on later in Section 8.8. The Cronbach alpha values 0.52 – 0.69 are below the 0.7 acceptable level. However, for initial and exploratory studies such as this, Cronbach alpha ranges between 0.5 and 0.69 are acceptable for reliability (Nunnally, 1978:245-246; Peterson, 1994:388; Zikmund, Babin, Carr and Griffin, 2010).

8.3 Response Rate of sample

Table 8.2 shows the assessment the response rate attained in the study.

Table 8.2: Response rate assessment

Survey and questionnaire Name	Number distributed	Number completed and returned	Response rate
Governance practices in SA Higher Education (GPSAHE) Institutions	23	11	48%
Sustainability Reporting Practices (SRPHESA) in SA Higher Education	23	21	91%
Sustainability Reporting in International Higher Education (SRIHE)	70	35	50%
Sustainability Reporting Practices at the Nelson Mandela Metropolitan University (SRPNMMU)	65	41	63%
Totals	181	108	

Source: Author's own construct

As indicated in Table 8.2, a combined total of 108 number of respondents completed and returned their questionnaires, that is 63% (n= 108) of the respondents completed and returned the questionnaires. This formed the basis of the analysis presented in this chapter.

Some questions were included in more than one questionnaire (i.e the same question posed in more than one survey). The four questionnaires covered the key themes of the study (strategic planning, governance, Sustainability Reporting and Business Intelligence). A 5-point Likert scale with the following range -depending on the type of question – was used:

- 1=Strongly disagree to 5=Strongly agree;
- 1=None to 5= Extensive; and
- 1=Poor to 5=Excellent.

Each of the four questionnaires (GPSAHE, SRPHESA, SRIHE and SRPNMMU) contained questions that were grouped into four main research themes. Findings from the four surveys are presented under the following four research themes:

- Strategic planning in Higher Education;
- Governance in Higher Education;
- Sustainability Reporting in Higher Education; and
- Business Intelligence in Higher Education.

Each of the four themes and the relevant sub-themes are discussed in Section 8.4.

8.4. Strategic planning in Higher Education (Theme 1)

The first theme of the study is on strategic planning in Higher Education Institutions. Strategic planning was discussed in Chapter 2. This section presents findings in the form of descriptive statistics on the factors that influence effective strategic planning in Higher Education Institutions. Participants in the GPSAHE survey responded to the questions relating to factors associated with strategic planning. Examples of these include plans produced by institutions, the alignment and integration of plans and mechanisms for monitoring implementation of plans and the role of information.

8.4.1 Planning period and status of strategic Plans

The GPSAHE survey showed that South African Higher Education Institutions use either 3-year or 5-year cycles for strategic planning purposes. Forty five point five percent (45.5%) of institutions use 3 year cycles while 54.5% use a 5-year strategic planning cycle. These cycles are shorter than the planning cycle recommended in the reviewed literature. For example, Porter (2011b:27-28) recommends that strategies should cover a decade or longer because continuity promotes improvement in singular activities while allowing an organisation to develop competencies required for its strategy. However, this is in line with NFF which require three year rolling plans.

Respondents in the GPSAHE survey (n=11) were asked to indicate the status, in terms of approval, of Strategic Plans for their institutions. Table 8.3 shows the findings.

Table 8.3: Approval of Strategic Plans and use of a reporting framework for HEI

Statement	Mean	Minimum (Min)	Maximum (Max)	Standard deviation (SD)
The University Council has approved the current strategic plan	4.27	2	5	0.90
There is lack of a sector specific (Higher Education) reporting framework	3.36	1	5	1.21

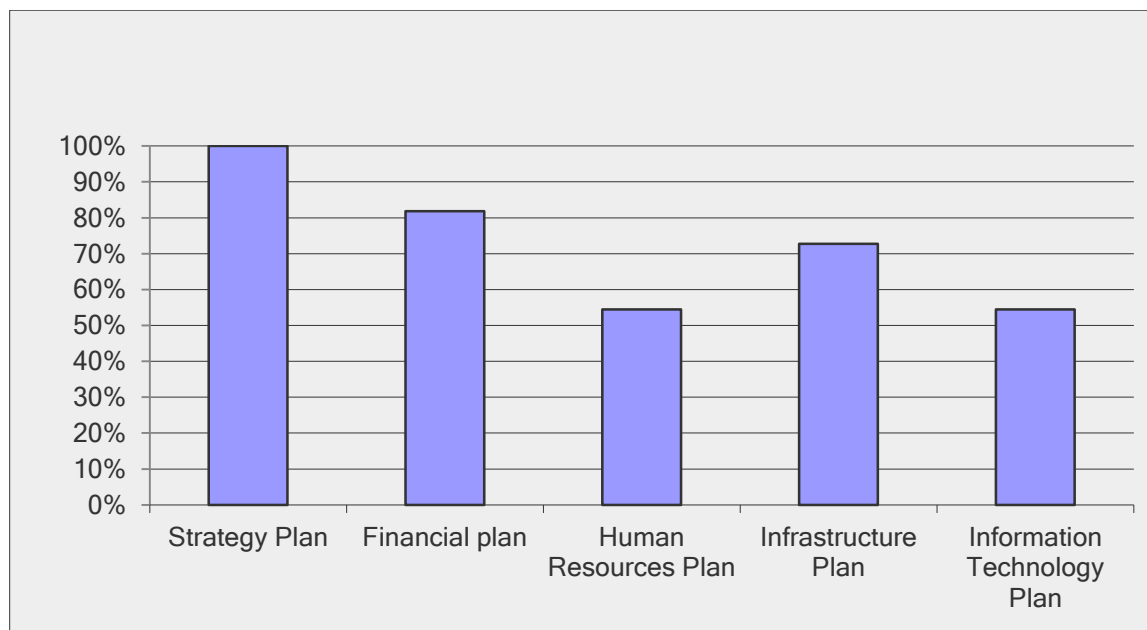
Table 8.3 shows the results showing that the majority of institutions have their strategic plans approved by the University Councils. This is in line with recommendations of governance best practices. One of the functions of a Board is to set the strategic direction of the organisation (IoD, 2009:20).

On the matter of whether there is a reporting framework for South African Higher Education Institutions, the majority of respondents in the GPSAHE survey indicated that there is no Sustainability Reporting Framework for Higher Education. However, subsequent to the survey in December 2012, the Minister for Higher Education and Training gazetted draft regulations for reporting for public Higher Education Institutions (RSA, 2012a). This finding implies that Sustainability Reporting has never been a focus by Government until 2012. It was only after a few Higher Education Institutions were placed under administration as a result of mismanagement that the Government issued these reporting regulations.

8.4.2 Plans and Reports produced by Higher Education Institutions

Universities produce a number of plans and reports as part of internal management requirements or in compliance with regulations. The GPSAHE survey indicated that, in addition to Faculty Plans and Academic Plans, universities produce other plans such as the Financial Plan (80%), Human Resources Plan (55%), Infrastructure Plan (73%) and ICT Plan (55%) as indicated in Figure 8.2.

Figure 8.2: Plans produced by South African universities – GPSAHE survey



All respondents indicated that strategic plans are produced by their institutions. However, some universities indicated that they do not have Human Resources and Information Technology plans. This is a matter of concern especially in light of the significant role that Human Resources and Information Technology play in Higher Education Institutions.

Financial Management Plans are fairly well established in institutions and it was not surprising that 80% of participants confirmed this. Infrastructure plans which are required by the Department of Higher Education as a prerequisite for releasing funds for infrastructure seem to be well established in South African universities. These results may be an indication that there is a lack of or poor integration of plans resulting in functional units or departments producing plans that do not link with other plans. Although Information Technologies are sometimes mentioned in Infrastructure plans, the focus is not comprehensive enough as intended in recommendations of the King III report (IoD, 2009:90).

Respondents in the GPSAHE survey were also required to rate the importance of reports that should be produced by their institutions. The results in Table 8.4 indicate that respondents consider reports such as the Financial Report, Strategic Plan Performance Report, the Academic report and the Integrated Sustainability Report to be very important.

Table 8.4: Importance of reports produced in South African Universities – GPSAHE survey

Name of report	Mean	Min	Max	SD
Financial Report	4.55	4	5	0.52
Annual Report (containing Strategic Planning performance)	4.36	3	5	0.67
Academic Report	4.18	3	5	0.87
Integrated Sustainability Report	4.00	3	5	0.94

The results in Table 8.4 above show that respondents in the GPSAHE survey attach importance to all reports produced. The Financial Report and the Annual Report were rated as most important – perhaps because they should be produced in accordance with regulations. However, it is encouraging to note that respondents attach importance to Integrated Sustainability Reports. In terms of importance, the respondents ranked Integrated Sustainability Reports last out of the four plans. Academic Reporting is second-last. While Financial Reporting is important, this result may point to an over-emphasis on it,

while not considering whether the money is spent well on the academic project. The strategic plan could cover all these plans and therefore provide a holistic picture of the institution's performance.

Casey (2009:34) states that the objective of Sustainability Reporting is to represent organisational sustainability issues, risks and performance in a balanced and reasonable way. This means that all facets of organisational performance that are of interest to stakeholders should be covered in the reports.

8.4.3 Mechanisms for Monitoring Strategic Plans at Universities

Respondents were asked to identify the means through which their institutions monitor performance against the targets set in the strategic plan. The surveys show that there are various mechanisms for monitoring progress in the implementation of strategic plans. Respondents in the GPSAHE, SRIHE and SRPNMMU surveys indicated that their institutions use budget monitoring - 85.7% (n= 11) 73.3% (n= 35) and 77.1% (n= 41) respectively. However, unlike in the GPSAHE survey, results in the SRIHE and SRPNMMU surveys show relatively low percentages in the use of employee performance management and monitoring of strategic plans. Unlike the GPSAHE and SRPNMMU surveys, most respondents in the SRIHE survey selected the Annual Report as their means of tracking performance.

From the SRPNMMU survey, 51.4% (n=41) of respondents agree that there are reports on the performance against targets set in the strategic plan. However, 81% (n=11) of GPSAHE respondents indicate that institutions report on achievement of targets in strategic plans. This difference could be further evidence that internal communication regarding the implementation of strategic plans is not adequate. Table 8.5 shows the results.

Table 8.5: Mechanisms for monitoring the implementation of Strategic Plans at Universities

Monitoring Mechanism	GPSAHE (n=11)	SRIHE (n=35)	SRPNMMU (n=41)
Regular reports on performance against targets in institutional plans such as the strategic plan	81.0%	66.7%	51.4%
Budget monitoring	85.7%	73.3%	77.1%
Employee performance management	81.0%	40.0%	45.7%
Achievements contained in the annual report	61.9%	80.0%	71.4%

Participants in three surveys (SRPHESA, SRIHE AND SRPNMMU) were asked to rate their estimation of the importance of information contained in strategic plans to various identified stakeholders. Table 8.6 reports the results.

Table 8.6: Importance of strategic planning information to identified stakeholders

Stakeholder	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Current and prospective employees	3.48	1.08	3.96	0.88	3.89	0.90
Current students	3.05	1.28	3.83	1.03	3.34	1.11
Prospective students	2.81	1.33	3.61	1.16	3.00	1.06
Alumni	2.81	1.17	3.30	1.18	3.00	1.14
Donors	3.33	1.15	3.52	1.34	3.91	0.98
Local community	2.52	0.98	3.00	1.27	3.09	1.09
Service providers	2.90	0.83	2.96	1.36	2.83	1.20
Government regulators	3.48	1.17	3.74	1.32	4.23	0.91

Information contained in the strategic plans was seen to be of importance to all identified stakeholders, albeit at different levels. Current and prospective employees, donors, government regulators and prospective students were identified as the stakeholders most in need of information about institutional Strategic Plans with mean scores of 3.48, 3.96 and 3.89 for the SRPHESA, SRIHE and SRPNMMU surveys respectively. The opportunity to attract prospective students as well as to inform the community could be lost if attention is not given to providing information about the strategic direction of an institution. In the SRIHE survey, service providers were rated as least in need of strategic planning while current and prospective employees, donors, government regulators and prospective students were identified as the stakeholders most in need of information in strategic plans. This is consistent with the SRPHESA and SRPNMMU scores.

A notable difference is that the SRPHESA survey shows that the local community, prospective students and Alumni are rated low with regard to requiring information on strategic plans. This finding indicates that Higher Education Institutions are potentially missing opportunities to engage with important stakeholders in the Higher Education value chain as indicated by Pathak and Pathak

(2010:170). In addition, the results confirm the work by Merkel and Litten (2007:7) in which stakeholders in Higher Education together with their reporting requirements are identified.

Strategic Planning is closely linked with Sustainability Reporting. In the GPSAHE, SRIHE and SRPNMMU surveys, respondents rated their agreement with statements on the importance of strategic planning in the Sustainability Reporting (SR) requirements. Table 8.7 reports the findings.

Table 8.7: Linking Strategic Planning and Sustainability Reporting requirements

Statements	GPSAHE (n=11)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Strategic planning is aligned to the budgeting processes	3.33	1.20	3.44	0.92	2.85	1.21
The prioritisation of resource allocation is guided by the strategic plan	3.38	1.24	3.44	0.98	3.03	1.03
The strategic planning process is consultative and relevant stakeholders contribute in the strategy formulation	3.86	1.06	3.47	0.80	3.03	0.87
There is lack of a sector specific (Higher Education) reporting framework	3.60	1.10	3.39	0.98	4.38	0.70
The university should have reporting tools to monitor the implementation of its strategy plan	4.10	0.94	4.06	0.73	4.18	0.70
Sustainability Reporting will greatly be enhanced if reporting is done on the institutional strategy plan	4.10	0.94	3.82	1.01	3.60	0.88
The university has identified its information sources and information users for purposes of reporting	2.86	1.01	3.17	0.92	2.91	1.14

Respondents from the GPSAHE and SRPNMMU surveys with mean scores of 2.86 (Registrars) and 2.91 (Faculty and HODs) respectively, concur with the statement that the university needs to identify information sources and users. This supports the recommendations for data warehousing and BI architecture proposals by Shin (2002:586) and March and Hevner (2007:1086). Respondents in the SRPNMMU survey indicated that they are familiar with their institutions' strategic plan better than with the other plans such as the Academic Plan, Research and Equity Plan, Financial Plan, Research

Plan, Transformation and Equity Plan and Departmental Annual Plans, developed at the university as shown summarised in Table 8.9.

The mean score of 3.60 on familiarity with the strategic plan (Vision 2020) does not correspond with the low percentage (54%) score on mechanisms for tracking performance using the Annual Report as shown in Table 8.8. This implies that the NMMU has more challenges in reporting on progress made in implementing its Strategic Plan as opposed to Managers being familiar with the Strategic Plan.

Table 8.8: Extent of familiarity with institutional and departmental plans – SRPNMMU survey

Name of Plan	N	Mean	Min	Max	SD
NMMU Strategic Plan (Vision 2020)	41	3.60	2	5	0.91
NMMU Academic Plan	41	3.03	1	5	0.90
NMMU Research and Innovation Plan	41	2.97	1	5	1.01
NMMU Financial Plan	41	2.49	1	5	1.09
NMMU Human Capital Management Plan.	41	2.09	1	5	0.84
NMMU Transformation and Equity Plan.	41	2.63	1	5	1.19
Respondent’s School/Department/Division's Annual Operational Plan.	41	4.51	1	5	0.82

The findings in Table 8.8 from the SRPNMMU survey indicate that whereas most respondents are familiar with their Departmental or Divisional annual plans, a sizeable number of managers are not familiar with other important institutional plans such as reflected in the low mean scores for the Financial Plan (2.49), Human Capital Management Plan (2.09) and Transformation and Equity plan (2.63). Respondents were also asked to rate the perception of the university’s strategic planning process from a number of perspectives.

Respondents in the SRPNMMU survey rated statements regarding their experience with the process of developing and implementing NMMU’s strategic plan (Vision, 2020) and alignment between Departmental plans and Vision 2020. Table 8.9 reports the results.

Table 8.9: Perspectives on Vision 2020 – SRPNMMU survey

Statement	N	Mean	Min	Max	SD
The requirements for reporting on NMMU Vision 2010 are well understood	41	2.34	1	4	1.00
The process of developing Vision 2020 was consultative and inclusive	41	3.43	1	5	0.92
Vision 2020 is too high-level for reporting	41	2.71	1	5	1.09
Department key activities included in Vision 2020	41	2.26	1	4	0.95
Department on track in meeting Vision 2020 targets	41	3.31	1	5	0.90
Feedback on progress with implementing Vision 2020 given.	41	2.06	1	5	1.07

The low mean result of 2.34 and 2.06 relating to understanding reporting requirements for and receiving progress reports on Vision 2020 respectively indicate that the requirements for reporting on strategic plans are either not available or have not been communicated and this may therefore account for the perception that there is no feedback on the implementation of the strategic plan of NMMU. This finding agrees with the work of Kaplan and Norton (2011:168-169) who identify feedback and learning as one of the processes which ensure that strategic objectives are linked to long-term goals. Hayward and Ncayiyana (2003:43) also allude to the importance of feedback in strategic planning. In the same SRPNMMU survey respondents identified factors that undermine intentions of reporting against performance of the strategic plan. Table 8.10 reports the results.

Table 8.10: Factors that undermine reporting on performance against strategic plan targets – SRPNMMU survey

Factors	N	Mean	Min	Max	SD
Lack of clearly defined reporting metrics and standards for reporting	41	3.71	2	5	0.94
Use of many reporting sources and lack of information integration	41	4.06	2	5	0.89
Lack of awareness of Vision 2020	41	3.97	2	5	1.00
A disconnect between strategy development and implementation	41	4.12	1	5	1.01
Lack of Management buy-in and support	41	3.55	1	5	1.15

The results in Table 8.10 underscore the importance of the factors that have been identified as having an influence the implementation of Strategic Plans. These include presence of clear reporting metrics (Van den Brink and Van der Woerd, 2004:188), poor strategy implementation (Neilson, Martin and Powers, 2011:143-144) lack of integration of reporting information (Chou, Tripuramallu and Chou, 2005:342).

Overall, respondents underscored the importance of Sustainability Reporting in the successful implementation of Vision 2020. The availability of a Strategic Planning Framework for implementation of NMMU’s strategic plan which was discussed in Chapter 2 (Figure 2.20) could be a factor that contributes to results indicated in Table 8.11. As is evident from the mean score of 2.56 in Table 8.11, respondents in the SRPNMMU survey did not agree with the statement that implies that it is not easy to report on strategic plans. This confirms the views shared by Donaldson and Schoemaker (2013:28) who caution that although there are multiple factors associated with an organisation’s ability to spot early warning signals, performance reporting on strategic plans is important to provide early warning signs. In addition, Servier (2003:18) asserts that strategic planning should be supported by a monitoring and evaluation system.

Table 8.11: A case for Sustainability Reporting for the NMMU – SRPNMMU survey

Factors	N	Mean	Min	Max	SD
Through reporting on Vision 2020, NMMU will achieve targets quicker	41	3.61	2	5	0.99
Vision 2020, like all strategic plans, is a document that is not easy to report on	41	2.56	1	5	0.91
Most information that is to be reported on is available, albeit in different format	41	3.61	1	5	0.88
A framework is needed for Sustainability Reporting at the NMMU	41	4.29	3	5	0.78

Table 8.12 shows the results of the Analysis of Variance (ANOVA) between the three surveys (SRPHESA, SRIHE and SRPNMMU) that focussed on stakeholders that consume information. Questions around this focus area featured in the SRPHESA, SRIHE and SRPNMMU surveys. This covered the following aspects:

- Stakeholder information requirements;

- Role of stakeholders in the strategic planning process; and
- Role of stakeholders in information processing.

Table 8.12: ANOVA - Importance of strategic planning information to stakeholders

Survey Group					
	Means	N	SD.		
SRIHE	3.50	35	0.85	ANOVA	
SRPHESA	3.05	21	0.84		
SRPNMMU	3.41	41	0.74		
Combined surveys	3.34	97	0.81	<i>F</i>	<i>P</i>
				1.97	0.1470

Table 8.12 indicates that there is no significant difference ($P < 0.05$) between the three groups in sub-theme T1a in terms of the average score relating to the importance of information on strategic plans to various stakeholders and role players in Higher Education. All identified stakeholders should be kept abreast with information on the progress with implementing the Strategic Plan. This is in line with the view that organisations are multi-functional value-adding entities that fulfil socio-economic functions on behalf of various stakeholders (Ulrich and Fluri 1995:60). In addition, Suchman (1995:575) warns that the information provided to stakeholders influence the outcome of strategies. The next section discusses results relating to the second theme of the surveys – governance in Higher Education.

8.5 Governance in Higher Education (Theme 2)

The four questionnaires used in the surveys contained questions relating to governance in Higher Education. Governance in Higher Education was discussed in Chapter 3. This section discusses the results.

8.5.1 Factors giving rise to the importance of Sustainability Reporting in Governance

The findings presented in Table 8.13 show the results from the GPSAHE, SRPHESA and SRIHE surveys on factors giving importance to Sustainability Reporting as part of good governance in Higher Education Institutions.

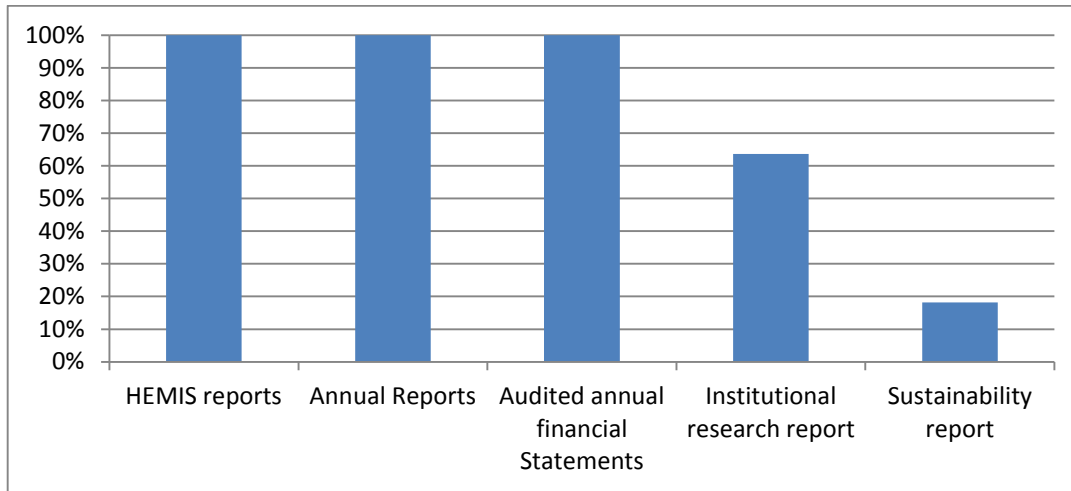
Table 8.13: Factors giving impetus to introducing Sustainability Reporting as part of good governance

Factors	GPSAHE (n=11)		SRPHESA (n=21)		SRIHE (n=35)	
	Mean	SD	Mean	SD	Mean	SD
Recent failures in governance	2.80	1.32	2.57	1.40	2.22	1.41
Changing regulatory climate and compliance with legislation	3.90	0.57	3.62	1.16	3.22	1.09
Keeping in line with best practices	3.64	0.50	3.19	1.03	3.48	1.16
Recommendation from external bodies such as auditors.	3.60	0.84	3.71	1.06	3.00	1.21

Table 8.13 shows that the changing regulatory climates; as well as the introduction of best reporting practice are key drivers for Sustainability Reporting – a part of good governance. Table 8.13 also shows that respondents tend to agree in the rating on the importance of the factors that contribute to the introduction of good governance as reflected in the mean scores. This results confirm the work by Tetter and Ofori (2010:234-235) that associates the growing importance of Sustainability Reporting with recent international corporate governance failures. It is encouraging to note that participating Higher Education Institutions are trying to adhere to best practice in their efforts to implement Sustainability Reporting.

Higher Education Institutions produce a number of reports and Registrars (GPSAHE survey), are custodians of policies in each university. Figure 8.3 shows the outcome of questions regarding the types of reports that are produced at their respective Higher Education Institutions.

Figure 8.3: Reports produced by Higher Education Institutions– GPSAHE survey

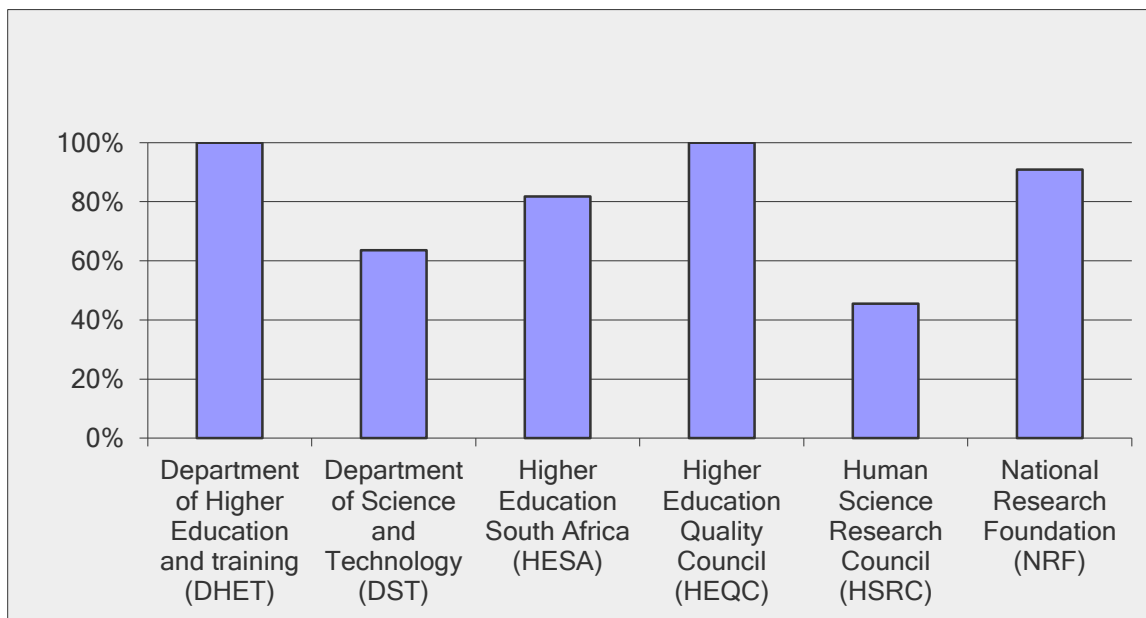


According to the survey, only 4 South African universities indicate that they produce Sustainability Reports. The regulatory reports such as HEMIS, Annual Reports and the Audited Annual Financial Statements are produced by all institutions that participated in the study.

8.5.2 Regulatory bodies to which South African Universities report

In South Africa, universities are required to report on various aspects to a number of government agencies and Government departments. These reports are usually coordinated by university Registrars and Figure 8.4 shows the bodies that were identified as requiring reports.

Figure 8.4: Regulatory bodies requiring reports from SA Universities – GPSAHE survey



Respondents in the GPSAHE survey indicated that reports from their universities are sent to donors and external partners. The Department of Higher Education and Training (DHET) has the responsibility for overall coordination and funding of the tertiary education sector. The Department of Science and Technology (DST) provides funding for research and innovation and universities have to bid for the funds. The National Research Foundation (NRF) requires information on research produced and also rates individual researchers. Higher Education Institutions report to the Department of Higher Education and Training as well as the Higher Education Quality Council (HEQC) which accredits academic programs.

The findings in Figure 8.4 point to the need to include the reporting requirements of the identified regulatory bodies in an overarching Sustainability Reporting framework. Higher Education Institutions that plan to develop BI capability to enable Sustainability Reporting should take into account the type of information needed by the regulatory bodies.

University Councils or Boards of Trustees play an oversight role in the management of Higher Education Institutions. The University Council is responsible for corporate governance and therefore is key in determining the reporting requirements of an institution. Table 8.14 indicates how respondents in the GPSAHE survey rate statements relating to Council and its effectiveness in the introduction of Sustainability Reporting in institutions.

Table 8.14: Factors that are key in the effective functioning of University Councils

Statement	GPSAHE (n=11)		SRPHESA (n=21)		SRIHE (n=35)	
	Mean	SD	Mean	SD	Mean	SD
Council comprises members that reflect diversity in academic qualifications and technical expertise	3.55	0.82	3.90	1.07	4.04	0.98
There should be mechanisms to evaluate the performance of university councils	4.60	0.52	4.21	0.85	4.32	1.13
University Councils should have a formal risk management system	4.40	0.70	4.30	0.73	4.13	0.87
Council considers both financial and non-financial information comprehensively when making decisions	3.89	0.93	4.20	1.01	4.30	0.93

Results in Table 8.14 show respondents in the GPSAHE, SRPHESA and SRIHE survey consider the overall governance structure in their institution as having the capacity and processes to consider Sustainability Reports. This is reflected in the diversity of qualifications in the Council or Board of Trustees. The fact that both financial and non-financial information is considered by Council is a good step towards Sustainability Reporting.

In addition to Council, universities in South Africa have other structures that assist in the overall governance. The existence of these other structures varies within institutions. Table 8.15 indicates the existence of other structures.

Table 8.15: Existence of governance structures at South African Universities – GPSAHE survey

Structure	Mean	Min	Max	SD
Council	4.90	4	5	0.32
Senate	4.50	4	5	0.53
Executive Management	4.50	3	5	0.71
Transformation Forum	3.00	1	5	1.33
Student Representative Council	3.20	2	5	1.23
Organised Labour (staff unions)	2.40	1	5	1.07

The governance structures identified correspond with those identified in the literature reviewed in Chapter 3 (File, 2000:31; Edwards, 2003:2-3). Hall *et al.* (2002:31) describe the South African Higher Education governance model as *cooperative governance* whereby every stakeholder participates in decision making. The existence of organised labour as a governance structure is rated low (mean score of 2.40). This shows a gap in governance that requires attention in some institutions. Organised labour play an important role in promoting transparency and fairness in the operations of an organisation and therefore play an important catalytic role in advancing Sustainability Reporting practices in Higher Education Institutions. Similarly, the drivers that have a bearing on the introduction of integrated reporting in South African universities were rated by respondents. Respondents were asked to rate their knowledge of the Global Reporting Initiative (GRI), the King III code of good governance and government regulation. Table 8.16 summarise the results.

Table 8.16: Knowledge and application of governance best practices

Factors	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Global Reporting Initiative (Knowledge of)	2.14	0.91	2.14	0.91	3.82	0.83
Global Reporting Initiative - Extent of usage	2.39	1.09	2.39	1.09	3.27	1.01
King III Report on Corporate governance (Knowledge of)	3.29	1.06	3.29	1.06	3.68	0.73
King III Report – Extent of usage	3.32	0.82	3.32	0.82	3.58	0.83
Applicable Government legislation (Knowledge of)	3.48	0.68	3.48	0.68	3.82	0.83
Applicable Government legislation – Extent of usage	3.84	0.90	3.84	0.90	3.27	1.01

The extent of awareness of the Global Reporting Initiative (GRI), the King III code on corporate good practice and other relevant legislation indicates that the GRI is not well known in South African Higher Education Institutions, as seen in the SRPHESA and SRPNMMU survey results.

Regarding the link between governance and Sustainability Reporting, respondents indicated that there is a strong link and that risk management is an important governance function that is enabled by Sustainability Reporting. Table 8.17 shows findings on how participants rated certain statements linking sustainability and governance.

Table 8.17: Rating of statements relating to Sustainability and Governance

Statement	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
There is a positive relationship between good governance and compliance with the law	4.48	0.75	3.78	0.94	4.18	0.76
Strategy, risk and sustainability are inseparable	4.52	0.68	3.39	0.85	4.24	0.61
Failure to manage risks can have disastrous effects on the implementation of strategy	4.43	0.68	4.00	0.69	4.41	0.61

The next section presents results relating to the third theme of the study – Sustainability Reporting.

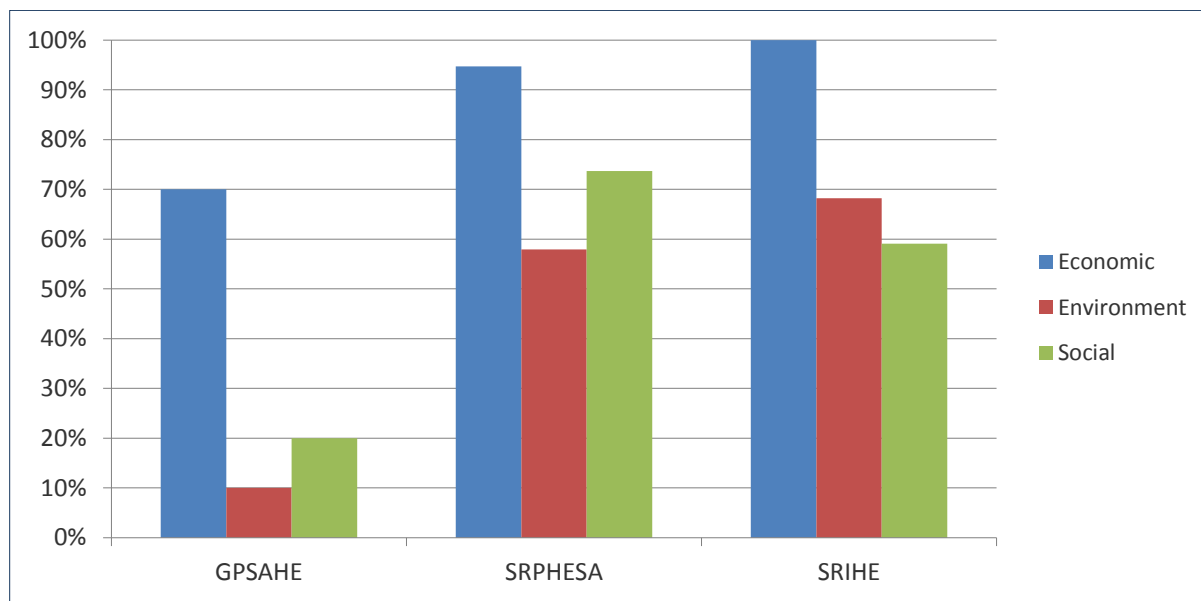
8.6 Sustainability Reporting in Higher Education Institutions (Theme 3)

The four questionnaires used in the surveys contained questions relating to Sustainability Reporting in Higher Education. Sustainability Reporting in Higher Education was discussed in Chapter 4. This section contains the results.

8.6.1 Dimensions of Reporting by Universities

Respondents were required to indicate the aspects that their university reports cover. As evident from Figure 8.5, most institutions still focus on the economic aspect of reporting. Only 10% of the institutions report on environmental aspects.

Figure 8.5: Dimensions of reporting by Universities



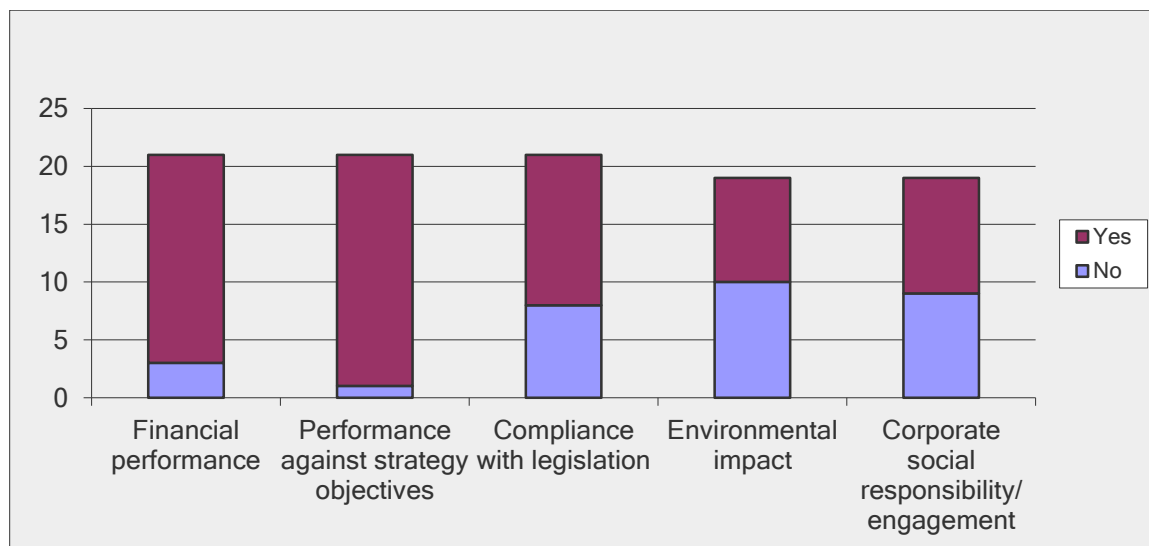
The results show that environmental reporting is least done at universities. The majority of the respondents in the GPSAHE, SRPHESA and SRIHE survey indicated that economic (financial) dimensions of reporting are mainly reported on. This translates to 70%, 93% and 100% for thrsr three surveys respectively. On the other hand, results from the GPSAHE survey show only 10% reporting on environmental data as opposed to 58% and 69% for the SRPHESA and SRIHE surveys respectively. As stated earlier, respondents in GPSAHE survey are Registrars who are custodians of university

policies. This suggests that information from Faculties and Departments on environmental aspects of reporting does not find its way to institutional reports or that it is not mandatory to report on the environmental dimension.

8.6.2. Aspects covered in reports issued by universities

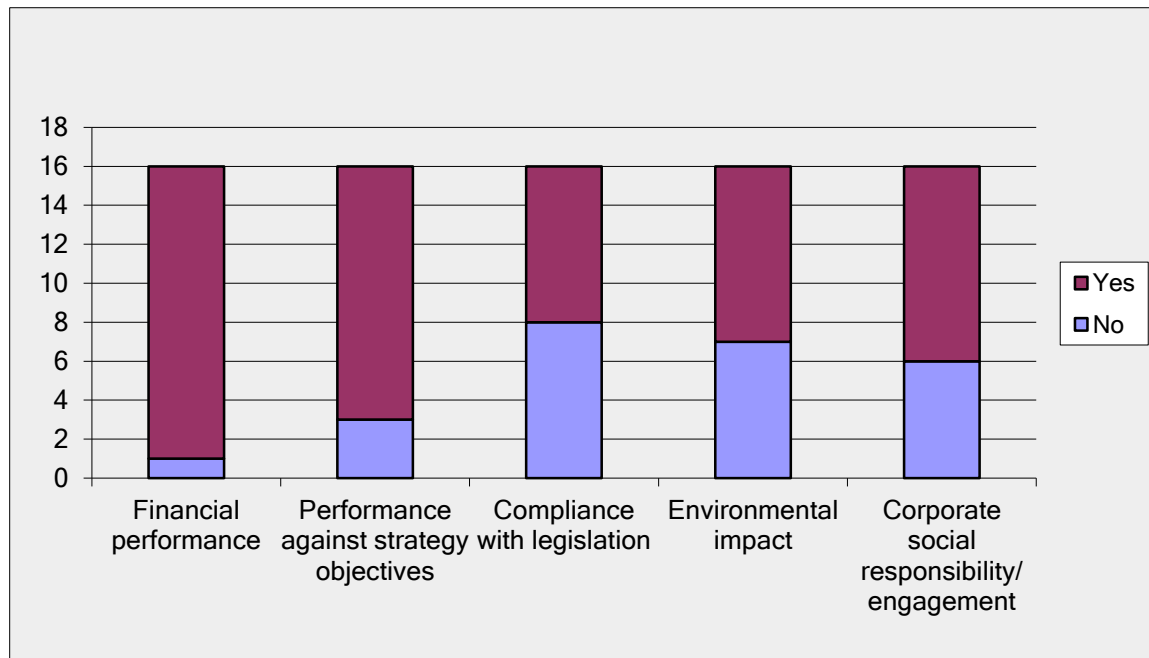
In response to a question on whether specific areas are reported on, the respondents show a lower rate of reporting on Corporate Social Responsibility (CSR) and Environmental Reporting as opposed to reporting on aspects such as financial reporting. For example, Figure 8.6 shows that almost 50% of the surveyed (SRPHESA) South African Higher Education Institutions do not report on aspects such as compliance with legislation, impact on the environment and corporate social responsibility or engagement activities.

Figure 8.6: Aspects Covered in Reports issued by Universities – SRPHESA survey



The results from the SRIHE survey show that social and environmental aspects are least done in the surveyed international universities. Without exception, all respondents indicated that economic (financial) aspects or reporting is undertaken by their institutions. Further analysis of aspects in need for attention in reporting confirms that reporting on compliance with legislation, Corporate Social Responsibility (CSR) and Environmental Reporting require attention. Figure 8.7 shows the results

Figure 8.7: Aspects reported on by – SRIHE survey



The results in Figures 8.7 indicate that Higher Education Institutions in South Africa should heed the counsel of the King III Report on corporate governance by embracing integrated reporting. The integrated report contains disclosures on sustainability and provides assurance on the integrity of the information required (IoD, 2009:108-109).

Integrated reporting covers three perspectives: the global economy, social and political systems, and the environment. Sadler and Smart (2010:4) refer to the confluence of these three major forces as the triple context. Reporting practices in Higher Education should be designed with this in mind.

8.6.3 Factors affecting the Introduction of Sustainability Reporting in Higher Education Institutions.

Respondents in the SRPHESA, SRIHE and SRPNMMU surveys scored the factors affecting the introduction of Sustainability Reporting in Higher Education Institutions. Table 8.18 reports the results.

Table 8.18: Factors affecting the Introduction of Sustainability Reporting

Factors	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
The voluntary nature of Sustainability Reporting	3.00	1.20	3.44	1.20	3.38	0.99
Lack of sector specific (Higher 14.2 Education) reporting standards	3.55	1.00	3.33	1.24	3.67	1.11
Lack of comparability	3.21	0.92	3.39	1.09	3.30	0.85
Lack of standards to audit sustainability reports	3.50	1.10	3.41	1.23	3.39	0.97

The respondents were unanimous on the factors that hinder the institutionalisation of sustainability reporting. Most respondents cited lack of sector specific metrics and lack of comparability. The voluntary nature of Sustainability Reporting came across as a factor to consider – especially in a sector characterised by a plethora of information requirements to comply with. Respondents in the SRPHESA, SRIHE and SRPNMMU surveys also rated factors influencing the introduction of integrated reporting practices in Higher Education Institutions. Table 8.19 reports the results.

Table 8.19: Factors influencing the introduction of integrated reporting in Higher Education Institutions

Factors	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Need to integrate aspects of corporate Social Responsibility in the Annual report	3.55	1.19	3.00	1.12	3.82	0.83
Leadership considerations	3.60	1.14	3.29	0.92	3.27	1.01
Following trends on reporting	3.20	0.77	3.24	0.66	3.68	0.73
Improving the quality of reporting	3.70	0.73	4.06	0.97	3.58	0.83

Results from Table 8.19 indicate that most respondents agree that the need to improve the quality of reports sent to stakeholders as well as Corporate Social Responsibility (CSR) considerations are key

factors that influence the introduction of Integrated Reports. Respondents indicated that leadership plays a big role in the move to introduce integrated reports in Higher Education Institutions.

The Analysis of Variance on factors that undermine effort at introducing Sustainability Reporting was undertaken. These factors include the following:

- The voluntary nature of Sustainability Reporting;
- Lack of a Higher Education sector Sustainability Reporting guideline;
- Lack of benchmarks for Sustainability Reporting in Higher Education; and
- Limitations in the scope of audits with limited focus on Sustainability Reporting.

Responses from the SRPHESA, SRIHE and SRPNMMU groups were analysed. Table 8.20 shows the results.

Table 8.20: ANOVA – Factors that undermine monitoring of strategic plans

Survey Group					
	Means	N	SD.		
SRIHE	3.24	35	0.82	ANOVA	
SRPHESA	3.45	21	0.63		
SRPNMMU	3.62	41	0.8	F	p
Combined surveys	3.47	97	0.77	1.49	0.232

The results from this analysis show that there is no significant difference ($P < 0.05$) between the responses obtained from the three surveys on factors that undermine monitoring of strategic planning in Higher Education Institutions. The next ANOVA was done to test the factors that influence the introduction of integrated reporting in Higher Education Institutions. These factors include the following:

- The role of leadership in introducing Sustainability Reporting;
- The need to integrate aspects of Sustainability Reporting in Annual reports;
- Aligning institutional reporting with reporting trends; and
- Attempts at improving the quality of reporting.

The results are reported in Table 8.21.

Table 8.21: ANOVA - Factors that influence the introduction of Integrated Reporting.

Survey Group					
	Means	N	SD.		
SRIHE	3.4	35	0.54	ANOVA	
SRPHESA	3.51	21	0.73		
SRPNMMU	3.72	41	0.53		
Combined surveys	3.57	97	0.6	F	P
				1.7	0.1905

The results in Table 8.21 show that there is no significant difference ($p < 0.05$) in SRIHE, SRPHESA and SRPNMMU surveys on factors that can influence the introduction of Integrated Reporting in Higher Education Institutions.

Training is an important element in introducing any changes. Respondents in surveys SRPHESA, SRIHE and SRPNMMU were asked to rate training received in the areas relating to Sustainability Reporting. Table 8.22 provides a summary of the responses.

Table 8.22: Aspects of training received on Sustainability Reporting

Training aspects	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Training received- Understanding Sustainability Reporting	1.86	1.06	1.83	1.25	1.21	0.65
Training needed - Understanding Sustainability Reporting	3.70	0.86	3.35	1.32	3.29	1.30
Training received - Using BI tools	2.33	1.20	2.00	0.97	1.70	0.98
Training needed - using Business Intelligence tools	3.05	1.00	3.11	1.13	3.39	1.20
Training received - Developing reporting metrics	2.19	1.08	1.83	0.92	1.76	1.12
Training needed - Developing reporting metrics	3.45	0.89	3.50	1.20	3.29	1.19
Training received – Developing dashboards and scorecards for information presentation	2.57	1.12	1.89	0.90	1.88	1.14
Training needed – Use of dashboards and scorecards for presentation	3.65	1.09	3.41	1.23	3.50	1.22

The results from Table 8.22 show that in the SRPHESA, SRIHE and SRPNMMU surveys, little has happened in the form of training in areas such as understanding the concept of Sustainability Reporting, use of BI tools, developing reporting metrics and use of dashboards and score cards for presentation of Sustainability Reports.

The state of Sustainability Reporting in Higher Education as well as desired best practices assist in identifying some of the key elements that should be considered before introducing Sustainability Reporting in Higher Education Institutions.

Table 8.23 shows results from the comparison of key elements of Sustainability Reporting such as monitoring the strategic plan, developing useful metrics for reporting the need for supporting BI technology and defining information sources and users. The results in Table 8.24 show that there is no significant difference ($P < 0.05$) in SRIHE and SRPHESA surveys on sustainability Reporting elements

Table 8.23: ANOVA - Sustainability reporting elements

Survey Group					
	Means	N	SD.		
SRIHE	3.47	35	0.45	ANOVA	
SRPHESA	3.59	21	0.61		
Combined surveys	3.53	56	0.53	1.7	0.1905

The next section presents the fourth theme – Business Intelligence (BI).

8.7 Business Intelligence in Higher Education (Theme 4)

The four questionnaires used in the surveys contained questions relating to Business Intelligence in Higher Education. Business Intelligence (BI) tools and techniques enable Sustainability Reporting. Business Intelligence was discussed in Chapter 5. According to Isik, Jones and Sidorava (2013:14-16), the success of any BI initiative can be measured by assessing aspects such as data quality, user access, flexibility, integration with other systems and the nature of the decision environment.

8.7.1 Experience with Reports Generated through BI capability

Business Intelligence tools enable the generation of Sustainability Reports. BI refers to the tools an organisation uses to gain a better understanding of operations, markets and competition (Bhatnagar, 2009:34). Respondents rated their experience with BI generated reports as shown in Table 8.24.

Table 8.24: Experience with reports generated through Business Intelligence

Experience with BI	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Formats of the reports are Pre-determined	2.82	1.29	3.19	1.03	3.00	0.97
The frequency of development and distribution of the reports is pre-determined	3.06	0.97	3.19	1.25	3.06	1.06
The reports are generated on an ad-hoc basis depending on request	3.47	1.01	3.19	0.98	3.19	0.87
BI reports are made available to all relevant users	3.47	0.80	3.00	1.14	2.97	0.96
BI reports are availed only to information requesters	3.73	0.70	3.24	0.94	3.30	1.06
Users are encouraged and empowered to access BI reports	2.82	1.13	2.57	1.03	2.52	0.93

The low maturity of BI in South African Higher Education is confirmed in the SRIHE questionnaire with the mean score of 2.57 on the aspect of encouraging and empowering users to access BI reports. The results show that the information turnaround in Higher Education Institutions is generally slow. Ad hoc reports seem to be most prevalent although one has to be cautious and note that most respondents chose to be neutral. The practice differs sharply across universities.

BI capability levels were also investigated in the SRPHESA, SRIHE and SRPNMMU surveys. Sabherwal and Becerra-Fernandez (2011:26-27) categorise capabilities of BI into four broad areas depending on the maturity:

- Organisation memory - the storage of information and knowledge in an accessible format;
- Information integration - the ability to link structured and unstructured data from disparate sources;

- Insight creation - the ability of organisations to make better informed decisions on the basis of new perspectives gained; and
- Presentation capability - the ability to link structured and unstructured data from disparate sources.

The summary of responses is shown in Table 8.25. The results show that respondents feel that their institutions meet the basic requirements for information storage. However, South African Higher Education Institutions need to give more attention to information presentation as the presentation layer has the lowest scores.

Table 8.25: BI Capability at participating Universities

BI Capability	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Organisational memory (storing information)	3.05	1.19	3.65	0.70	3.65	0.70
Insight (analyses and scenario planning)	2.95	1.10	3.47	0.62	3.47	0.62
Presentation (information presented in user-friendly fashion)	2.75	0.85	3.41	0.71	3.41	0.71

As was concluded in Chapter Five, the benefits that can accrue to an organisation through the use of its information systems depend largely on the BI capability of the organisation. Implementing BI comes with a number of challenges which need to be addressed in order to obtain the full benefits of BI. These are discussed in the section that follows.

8.7.2 Challenges with BI in Higher Education Institutions

A number of challenges confront the introduction of BI that supports Sustainability Reporting in Higher Education Institutions. Table 8.26 reports the results from the SRPHESA, SRIHE and SRPNMMU surveys.

Table 8.26: Challenges with BI in Higher Education Institutions

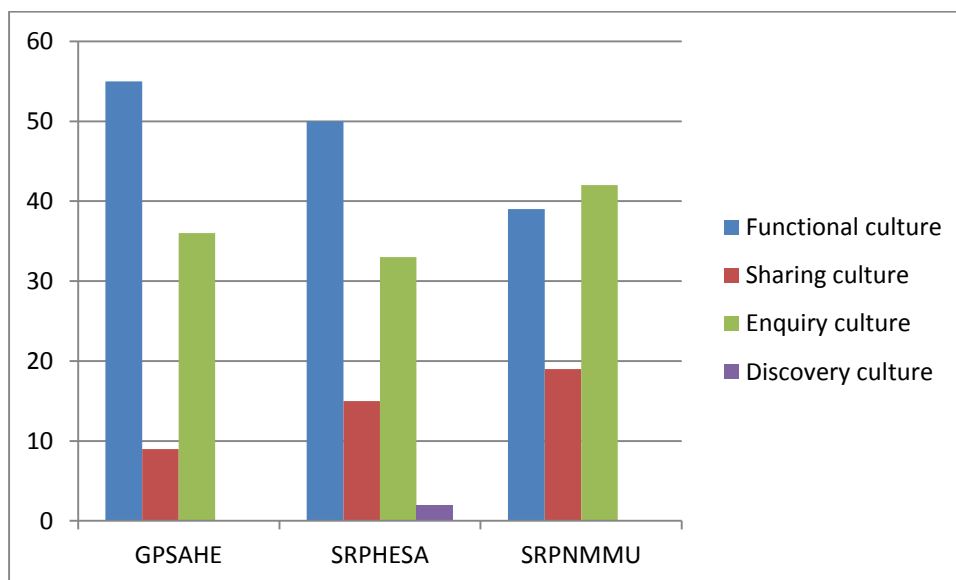
Challenge	SRPHESA (n=21)		SRIHE (n=35)		SRPNMMU (n=41)	
	Mean	SD	Mean	SD	Mean	SD
Unavailability of data	3.62	1.07	3.44	1.20	3.74	1.16
Non-existence of data	3.14	1.31	3.33	1.24	3.47	1.31
Incompleteness of information	3.62	0.97	3.39	1.09	3.76	1.10
Lack of clear information management strategy	3.81	1.08	3.41	1.23	3.71	0.97
Lack of integration in reporting systems	3.52	0.93	3.44	1.20	3.94	1.03
Limitations with data analytical capability	3.24	0.70	3.33	1.24	3.24	1.06
Perceived lack of action on the information provided	3.67	0.97	3.39	1.09	3.59	1.05
Staleness of information and unsuitability for decision making	3.10	0.89	3.41	1.23	3.47	1.08
Poor information presentation	3.30	0.86	3.44	1.20	3.59	1.13

The response patterns indicate that information, albeit often incomplete, is available in universities. The timeliness of access to information undermines a culture of performance monitoring. The information culture of an organisation determines the availability of data and consequent reporting. Concern that information will be used in ranking institutions was cited as another factor hindering institutions from introducing sustainability reporting. Other factors cited include the breaking away of the culture of trust to one of performance measurement. Some respondents bemoaned the multiplicity of formats sought for the same information. Participants also rated the prevalent information culture in their institutions using the scale in Table 8.27 and Figure 8.8.

Table 8.27: Description of Information cultures in organisations

Information culture	Description
Functional culture	<ul style="list-style-type: none"> Information is used as a basis for exerting power and influence. Information is not freely available and shared
Sharing culture	<ul style="list-style-type: none"> Characterised with trust in information systems
Enquiry culture	<ul style="list-style-type: none"> Characterised by search for better and more information by both managers and staff
Discovery culture	<ul style="list-style-type: none"> Characterised by innovation

Figure 8.8: Information culture across surveyed groups



The surveyed Higher Education Institutions have strong functional information cultures. The information discovery culture is low and therefore corroborating the finding that BI capability is low at the presentation level.

8.7.3 Drivers for use of BI in support of Sustainability Reporting and Medium for reporting

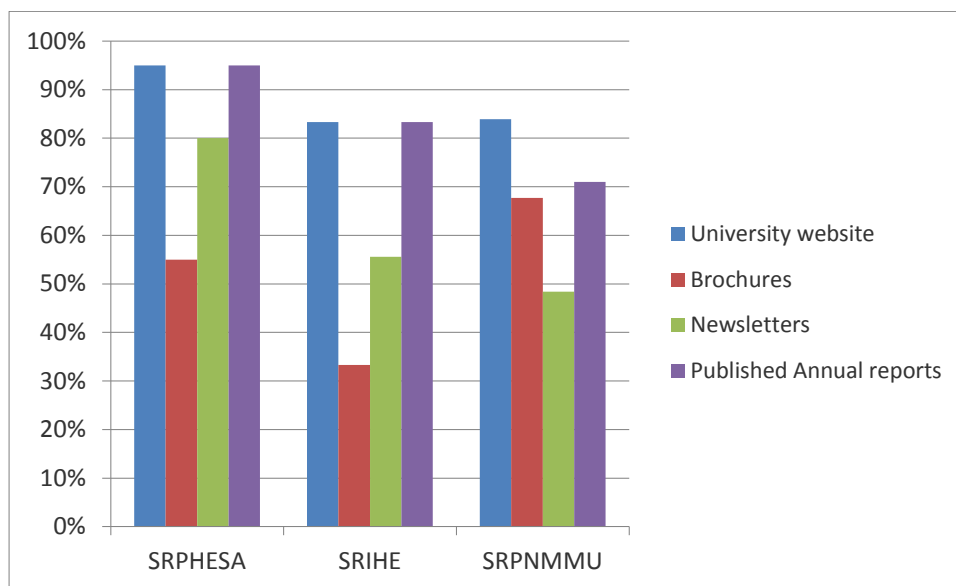
Business Intelligence (BI) will continue receiving attention as the need for making better decisions increases. Respondents in the SRPNMMU survey rated drivers that are giving impetus to the need for introducing and using BI in support of Sustainability Reporting. Table 8.28 reports the results and indicates the drivers for the use of BI at the NMMU.

Table 8.28: Drivers for the use of BI at the NMMU

Driver	N	Mean	Min	Max	SD
Best practices such as the King III code in South Africa	41	3.59	1	5	1.01
Gaps in Enterprise Resource Planning (ERP) systems e.g. ITS	41	3.48	2	5	1.00
A desire for better reporting	41	3.88	2	5	0.91
The imperative to become and remain competitive as stated in the University's strategic plans	41	3.94	2	5	0.84

Respondents in the SRPHESA, SRIHE and SRPNMMU selected the medium that their institutions use for availing their reports to the public. Figure 8.9 shows the results.

Figure 8.9: Medium used for reporting by universities



The results show that most institutions use a combination of published reports, websites and newsletters and placing of reports on the websites as the main avenues for displaying their Sustainability Reports.

Respondents from the four survey groups described their roles in information management as part of Sustainability Reporting from a choice that contained data gathering, information analysis, report compilation and report presentation. Table 8.29 shows the correlation between the groups.

Table 8.29 ANOVA – Role of respondents in information management Sustainability Reporting

Survey					
	Means	N	SD		
SRIHE	3.22	35	1.08		
GPSAHE	2.98	11	0.97		
SRPHESA	2.81	21	0.98	ANOVA	
SRPNMMU	2.96	41	1	<i>F</i>	<i>P</i>
Combined Surveys	3	108	1.01	0.61	0.6092

Results from Table 8.29 show no significant differences ($P < 0.05$) in the roles played by respondents in relation to Sustainability Reporting.

Analysis of similarities in factors that play a catalytic role in the introduction of Business Intelligence (BI) tools and techniques that support Sustainability Reporting was undertaken. The ANOVA is reported in Table 8.30. These factors include the following:

- Government regulations;
- Limitations in Enterprise Resource Planning (ERP) systems used by institutions;
- Pursuance for better reporting; and
- The imperative to gain a competitive edge.

Table 8.30: ANOVA – Factors that influence BI in support of Sustainability Reporting

Survey					
	Means	N	SD		
SRIHE	3.75	35	0.57		
SRPHESA	3.51	21	0.58	ANOVA	
SRPNMMU	3.72	41	0.7	<i>F</i>	<i>P</i>
Combined surveys	3.66	97	0.64	0.91	0.4075

The results in Table 8.30 show that there is no significant difference ($P < 0.05$) in SRIHE, SRPHESA and SRPNMMU surveys on factors that influence BI in support of Sustainability Reporting. In addition, SRIHE, SRPHESA and SRPNMMU surveys results were compared on aspects relating to BI capability (organisation memory, insight and presentation). Results are reported in Table 8.31.

Table 8.31: ANOVA- BI capability levels

Survey					
	Means	N	SD		
SRIHE	3.51	35	0.49		
SRPHESA	2.92	21	0.88	ANOVA	
SRPNMMU	3.1	41	0.57	F	p
Combined Surveys	3.15	97	0.69	3.83	0.027

The results show a significant difference amongst the three groups of respondents ($p < 0.05$). It does not indicate which survey results differ and therefore, a post-hoc analysis was done. The results are shown in Table 8.32.

Table 8.32: Post hoc test results – BI capability

Post Hoc test (Scheffe Test) Variable:			
	SRIHE	SRPHESA	SRPNMMU
SRIHE	-	-	0.136
SRPHESA	0.031	-	0.657
SRPNMMU	0.136	0.657	-

The Scheffe test indicates that the only significant difference is between SRIHE and SRPHESA surveys ($p = 0.0311$). Therefore, SRPNMMU was not included in this test.

A comparison was done on practices of Business Intelligence (BI) reporting across participating institutions. The related ANOVA results are reported in Table 8.33. The surveys had sought to establish if:

- Formats for reporting are pre-determined;
- Reports are generated on a predetermined frequency and regularity;
- Reports are generated on ad hoc basis depending on when they are requested;
- BI reports are made available to all users or only to information requesters; and
- Users are encouraged to access BI reports.

Table 8.33: ANOVA - Practices of BI in Higher Education Institutions

Survey	T4e			ANOVA	
	Means	N	SD		
SRIHE	3.22	35	0.54	<i>F</i>	<i>P</i>
SRPHESA	3.06	21	0.42		
SRPNMMU	3	41	0.62	0.85	0.43252
Combined surveys	3.07	97	0.53		

8.8 Correlations

The surveys were done through the completion of questionnaires targeted at different groups of respondents. Table 8.1 provided a summary of the questionnaires administered. The themes used in the descriptive statistics were used in the questionnaires. For ease of comparison and analysis, similar questions across questionnaires were grouped into five sub-themes aligned to the study's research questions. These sub-themes include:

- a) Higher Education Stakeholders and their information needs (T1);
- b) Monitoring of Strategic Plans in Higher Education (T2);
- c) Institutional plans and Sustainability Reporting in Higher Education (T3);
- d) Information culture in institutions and use of Business Intelligence (BI) tools and techniques (T4);
and
- e) Variables of Sustainability Reporting (T5).

Where possible, these five sub-themes were further grouped into focus areas (a-e) that reflect logical groupings of questions contained in the questionnaires. Table 8.34 shows the sub-themes and the number of questions relating to each focus area.

Table 8.34: Summary of research sub-themes for survey group comparison

Sub-Theme	Focus area	No. of questions	GPSAHE	SRPHESA	SRIHE	SRPNMMU
T1a	Strategic Planning for Stakeholders that consume information	8		√	√	√
T1b	Role of respondents with regards to reporting	8	√	√	√	√
T2a	Factors that undermine monitoring of strategic plans	9		√	√	√
T3b	Drivers for Sustainability Reporting	4	√		√	
T3c	Factors that influence the introduction of integrated reporting in Higher Education	4		√	√	√
T3e	Factors militating against introduction of sustainability reports	4		√	√	

Table 8.34: Summary of research sub-themes for survey group comparison (continued)

Sub-Theme	Focus area	No. of questions	GPSAHE	SRPHESA	SRIHE	SRPNMMU
T4c	Drivers for the introduction of Business Intelligence (BI)	4		√	√	√
T4d	Business Intelligence capability level	3		√	√	√
T4e	BI reports at universities.	6		√	√	√
T5a	Elements of Sustainability Reporting	8		√	√	
NOTE: √ = Question covered in survey						

Table 8.34 contains a summary of the research themes and sub-themes that formed the basis for comparisons to establish relationships between key variables that were analysed. The variables that were analysed are linked to the sub-themes and focus areas outlined in Table 8.34.

8.8.1 The relationship between Sustainability Reporting and effective strategic planning

In this section, the data were converted into latent variables in order to investigate what effect Sustainability Reporting would have on strategic planning, and vice versa, in Higher Education Institutions. To this end, questionnaire items which were similar in focus were combined to create latent variables as described in Table 8.36. The item-total correlations in the Cronbach alpha analysis were used as a basis to create the variables defined in Table 8.35.

Table 8.35: Description of variables used in correlations

Abbreviation	Variable
RKNOW1	Knowledge about Global Reporting Initiative
RUSE1	Extent of use of Global Reporting Initiative
BUYIN	Management buy-in and support
BBICAP	Capability in the use of Business Intelligence
BBITEC	Technology that enable Business Intelligence presentation
BBITYP	Business Intelligence type
IKNOW	Knowledge of international sustainability standards
PPERF	Challenges facing performance monitoring in higher education
RRKNOW	Knowledge on reporting guideline
RRUSE	Use of reporting guidelines
RROLE	The extent of respondent's role in Sustainable Reporting
SSTRAT	Perceived effective strategic planning at respondent's university
TRREC	Extent of training received in Sustainable Reporting
TRREQ	Extent of training required in Sustainable Reporting

8.8.2 Reliability of Latent Variables

The Cronbach alphas of latent variables from the SRPHESA survey are reported in Table 8.36. The initial Cronbach alphas of these variables ranged from -0.07 to 0.93. The variable (BBITYP) that produced a Cronbach alpha was regarded as unreliable and thus omitted from further analyses. The reliability of variables that produced Cronbach alphas of below 0.50, including RRKNOW ($\alpha = 0.49$) and RRUSE ($\alpha = 0.41$), were improved by deleting items with low item-to-total correlations. The Cronbach alphas of these two latent variables improved to 0.63 and 0.61 respectively. After these improvements, all the latent variables exhibited Cronbach alphas of exceeding the 0.60 fair reliability cut-off point of Zikmund, Babin, Carr and Griffen (2010). On this basis, these variables were regarded as reliable enough to be included in subsequent analyses.

Table 8.36: Cronbach alphas for latent variables in SRPHESA survey

Variable	Number Of Measurement Items	Initial Cronbach Alpha	Items Deleted	Final Cronbach Alpha
BBICAP	3	0.77		0.77
BBITEC	4	0.61		0.61
BBITYP	6	-0.07		-0.07
IKNOW	3	0.89		0.89
PPERF	9	0.82		0.82
RKNOW	3	0.49	RRKNOW1	0.63
RROLE	4	0.82		0.82
RRUSE	3	0.41	RRUSE1	0.61
SSTRAT	5	0.87		0.87
TRREC	4	0.93		0.93
TRREQ	4	0.85		0.85

The Cronbach alphas of latent variables from the SRIHE survey are reported in Table 8.37. The initial Cronbach alphas of these variables ranged from 0.41 to 0.93. The reliability of variables that produced Cronbach alphas of below 0.60, including SSTRAT7 ($a = 0.41$), BBITYP ($a = 0.52$) and BBICAP ($a = 0.57$), were improved by deleting items with low item-to-total correlations. The Cronbach alphas of these three latent variables improved to 0.60, 0.83 and 0.61 respectively. After these improvements, all the latent variables exhibited Cronbach alphas of exceeding the 0.60 fair reliability cut-off point of Zikmund, Babin, Carr and Griffen (2010). On this basis, these variables were regarded as reliable enough to be included in subsequent analyses.

Table 8.37: Cronbach alphas of latent variables in SRIHE survey

Variable	Number Of Measurement Items	Initial Cronbach Alpha	Items Deleted	Final Cronbach Alpha
BBICAP	3	0.57	BBICAP1	0.83
BBITEC	Not calculated in this sample			
BBITYP	6	0.52	BBITYP 3,5 and 6	0.61
IKNOW	Not calculated in this sample			
PPERF	9	0.87		0.87
RRKNOW	3	0.79		0.79
RROLE	4	0.91		0.91
RRUSE	3	0.80		0.80
SSTRAT	5	0.41	SSTRAT7	0.60
TRREC	4	0.79		0.79
TRREQ	4	0.93		0.93

The Cronbach alphas of latent variables from the SRPNMMU survey are reported in Table 8.38. The initial Cronbach alphas of these variables ranged from 0.44 to 0.92. The reliability of variables that produced Cronbach alphas of below 0.50, including BBICAP ($\alpha = 0.44$), RRUSE ($\alpha = 0.46$), did not improve by deleting items with low item-to-total correlations and therefore were regarded as unreliable. The rest of the latent variables in the SRPNMMU survey exhibited Cronbach alphas of exceeding the 0.60 fair reliability cut-off point of Zikmund, Babin, Carr and Griffin (2010). On this basis, these variables were regarded as reliable enough to be included in subsequent analyses.

Table 8.38: Cronbach alphas of variables – SRPNMMU survey

Variable	Number Of Measurement Items	Initial Cronbach Alpha	Items Deleted	Final Cronbach Alpha
BBICAP	3	0.44	BBICAP1	0.44
BBITEC	4	0.85		0.85
BBITYP	6	0.73		0.73
IKNOW	3	0.76		0.76
PPERF	9	0.88		0.88
RRKNOW	3	0.76		0.76
RROLE	4	0.92		0.92
RRUSE	3	0.46	RRUSE1	0.56
SSTRAT	5	0.64		0.64
TRREC	4	0.86		0.86
TRREQ	4	0.87		0.87

Tables 8.36 to 8.38 indicate that the latent variables to be investigated in further analyses exhibit fair to good reliability and face validity. On this basis, correlations among these variables were calculated to ascertain how they relate to effective strategic planning in higher education institutions.

8.8.3 Correlations among latent variables in SRPHESA survey

Table 8.39 shows the results of the correlation analysis from the survey on Sustainability Reporting practices in SA universities (SRPHESA survey).

Table 8.39: Correlation latent variables – SRPHESA survey

	RKNOW1	RUSE1	BUY IN	BBICAP	BBITEC	IKNOW	PPERF	RRKNOW	RROLE	RRUSE	SSTRAT	TRREC	TRREQ
RKNOW	1.000		-		-								
RRUSE1	0.378	1.000		-	-								
BUY IN	0.133	-0.044	1.000	-	-								
BBICAP	0.186	0.032	-0.189	1.000	-								
BBITEC	-0.094	0.013	-0.005	0.659	1.000								
IKNOW	0.337	0.262	-0.263	0.345	-0.062	1.000							
PPERF	0.029	-0.200	0.166	-0.055	-0.363	0.076	1.000						
RRKNOW	0.171	-0.173	0.299	-0.324	-0.379	0.080	0.169	1.000					
RROLE	0.217	0.308	-0.169	0.160	0.309	0.082	0.016	-0.410	1.000				
RRUSE	0.023	0.106	0.472	-0.256	-0.048	0.089	-0.146	0.374	-0.046	1.000			
SSTRAT	0.161	0.301	0.560	0.037	0.376	-0.170	-0.018	-0.047	0.301	0.424	1.000		
TRREC	0.435	0.392	-0.050	0.417	0.241	0.406	0.146	0.104	0.396	-0.016	0.182	1.000	
TRREQ	0.113	-0.142	0.047	0.039	0.028	-0.253	0.060	0.109	-0.051	-0.388	0.119	-0.088	1.000

Note: The numbers in red indicate significant relationships at the $p < 0.05$ level

The correlations sought to establish whether the above-mentioned variables are related to effective strategic planning at a university. The only one variable that is significantly and positively related to effective strategic planning is management buy-in and support according to the survey on Sustainability Reporting practices in SA universities. This means that this variable contributes significantly to effective strategic planning in Higher Education institutions. The finding supports the assertion by the King III Report that governance, strategy and sustainability are inseparable and therefore leaders should take responsibility for defining the strategies of their organisations (IoD, 2009: 12-13).

Correlations show relationships both ways. In other words, effective strategic planning might contribute to increased management buy-in and support for BI-enabled reporting. The point is further buttressed by Harvey (2004:104) who places a responsibility on management to ensure that there is adequate resourcing of functionaries that execute strategy. According to Sterling (2003:28), strategies fail due to various reasons such as unanticipated forces, deployment of insufficient resources, lack of focus and failure to communicate and get buy-in, especially from those expected to implement the strategies.

The types of BI reporting done (or required) as a collective did not produce a satisfactory Cronbach alpha and therefore each BI reporting type was treated as a separate variable. The next analysis (Table 8.40) sought to establish if there is a relationship between the types of reporting using BI done (or required) and effective strategic planning or visa versa.

Table 8.40: Correlations of individual items – SRPHESA survey

	BITYP1	BITYP2	BITYP3	BITYP4	BITYP5	BITYP6	SSTRAT
BITYP1	1.000	-	-	-	-	-	-
BITYP2	0.553	1.000	-	-	-	-	-
BITYP3	-0.137	-0.480	1.000	-	-	-	-
BITYP4	-0.043	0.105	-0.179	1.000	-	-	-
BITYP5	-0.049	-0.083	0.219	-0.697	1.000	-	-
BITYP6	0.175	0.222	-0.113	0.682	-0.560	1.000	-
SSTRAT7	0.122	0.472	-0.356	0.552	-0.451	0.517	1.000

Note: The numbers in red indicate significant relationships at the $p < 0.05$ level

Table 8.40 shows that the predetermined frequency of reports (BITYP2), making BI reports available to all relevant users (BITYP4) and encouraging and empowering users to access BI reports (BITYP6) are significantly positively related to effective strategic planning (SSTRAT). This means these BI types contribute to effective strategic planning (SSTRAT). But, it is also true in the reverse. Effective strategic planning contributes to predetermined frequency of reports, making BI reports available to all relevant users and encouraging and empowering users to access BI reports.

The results show that BITYP5 is significantly negatively ($r = -0.45$, $p < 0.05$) related to effective strategic planning. This means, availing BI reports only to information requestors is related to decrease strategic planning effectiveness. This finding corroborates the view that BI is important for strategic decision making and that it is imperative for managers to have continuous access to vital information (Nyalungu, 2011:54).

8.8.4 Correlations among Latent Variables in SRIHE survey

Table 8.41 shows the results of the correlation analysis from the survey on Sustainability Reporting practices in surveyed international universities (SRIHE survey).

Table 8.41 Correlation of latent variables – Sustainability Reporting practices – SRIHE survey

Marked correlations are significant at $p < .05000$ $n=16$									
	BBICAP	BBITYP	PPERF	RRKNOW	RROLE	RRUSE	SSTRAT	TRREC	TRREQ
BBICAP	1.000	-	-	-	-	-	-	-	-
BBITYP	0.384	1.000	-	-	-	-	-	-	-
PPERF	-0.116	0.046	1.000	-	-	-	-	-	-
RRKNOW	0.250	0.379	0.398	1.000	-	-	-	-	-
RROLE	0.035	-0.248	0.101	0.270	1.000	-	-	-	-
RRUSE	0.009	0.317	0.321	0.205	-0.262	1.000	-	-	-
SSTRAT	0.433	0.457	-0.632	0.056	-0.142	0.104	1.000	-	-
TRREC	0.306	0.354	0.082	0.531	0.365	-0.145	0.272	1.000	-
TRREQ	-0.009	-0.002	-0.090	0.041	0.403	-0.334	0.077	0.389	1.000

Note: The numbers in red indicate significant relationships at the $p < 0.05$ level

Only the challenges facing performance monitoring in Higher Education (PPERF) is significantly related to effective strategic planning. This relationship is negative, which means that the more these performance challenges are increasing or becoming more serious, the less effective strategic planning will be. An example of a challenge identified relates to communication. Communications is a key ingredient in strategy execution.

Studies support the view that communication is critical in the efficient execution of strategy (Peng and Littlejohn, 2005:522). Communications should include all stakeholder groups. The finding corroborates the stance by Hamaker (2003:4) who concludes that with clear strategy, strong communications, independent review and continuous improvement, the measurement of performance becomes easier. Table 8.42 shows the correlations for individual items from SRIHE survey data.

Table 8.42. Correlation of individual items – sustainability reporting practices – SRIHE survey

Correlations (Marked correlations are significant at $p < .05000$ $n=16$)						
	BICAP1	BITYP3	BITYP5	BITYP6	STRAT7	SSTRAT
BICAP1	1.000	-	-	-	-	-
BITYP3	-0.165	1.000	-	-	-	-
BITYP5	0.169	0.084	1.000	-	-	-
BITYP6	0.462	0.210	0.195	1.000	-	-
STRAT7	0.115	-0.095	0.390	-0.400	1.000	-
SSTRAT	0.427	-0.112	0.474	0.594	-0.353	1.000

Note: The numbers in red indicate significant relationships at the $p < 0.05$ level

Only encouraging and empowering users to access BI reports (BITYP6) is significantly and positively related to effective strategic planning. This means this BI type reporting is associated with more effective strategic planning according to the international sample. Advantages of accessing real-time data are cited by Watson (2009:500) states that decision making is best supported by real time rather than historical data and therefore organisations should strive to minimise data latency, analysis latency and decision latency. Insenmann, Bey and Welter (2007: 488-492) point out that BI present an array of possibilities for Sustainability Reporting. BI capabilities enable detection of change and enhance managerial visibility.

8.8.5 Correlations – Sustainability Reporting practices in SRPNMMU survey

Table 8.43 shows the results of the correlation analysis from the survey on Sustainability Reporting practices in SA universities (SRPNMMU survey).

Table 8.43: Correlation of latent variables – SRPNMMU survey.

Correlations (Marked correlations are significant at $p < .05000$ n=34)									
	BBITEC	BBITYP	IKNOW	PPERF	RRKNOW	RROLE	SSTRAT	TRREC	TRREQ
BBITEC	1.000	-	-	-	-	-	-	-	-
BBITYP	0.190	1.000	-	-	-	-	-	-	-
IKNOW	0.267	-0.161	1.000	-	-	-	-	-	-
PPERF	0.004	-0.218	0.223	1.000	-	-	-	-	-
RRKNOW	0.273	0.013	0.542	0.118	1.000	-	-	-	-
RROLE	-0.162	-0.246	0.547	0.060	0.470	1.000	-	-	-
SSTRAT	0.224	0.013	0.083	-0.108	0.278	0.317	1.000	-	-
TRREC	0.171	-0.077	0.370	0.112	0.180	0.213	0.176	1.000	-
TRREQ	0.101	-0.148	0.451	0.124	0.293	0.346	0.177	0.935	1.000

Note: The numbers in red indicate significant relationships at the $p < 0.05$ level

None of the variables is related to effective strategic planning and vice versa. It could be that the users of BI and Sustainability Reports have no idea that these variables should contribute to effective strategic planning and vice versa. Alternatively, it could be that the way these variables are applied in the NMMU is not related to each other. Development of BI capability, strategic planning and introduction of Sustainability Reporting should be introduced as a package with clearly stated objectives in order to derive maximum benefit. For example, the objective could be to enhance public scrutiny and accountability as recommended by Gabriel and Galligar (2010:12). Table 8.44 shows the correlations of individual items using data from the fourth survey on Sustainability Reporting practices at the NMMU.

Table 8.44: Correlation of individual items – SRPNMMU survey

Marked correlations are significant at $p < .05000$ $n=34$							
	BICAP1	BICAP2	BICAP3	RUSE1	RUSE2	RUSE3	SSTRAT
BICAP1	1.000	-	-	-	-	-	-
BICAP2	0.223	1.000	-	-	-	-	-
BICAP3	0.207	0.201	1.000	-	-	-	-
RUSE1	0.061	0.221	-0.045	1.000	-	-	-
RUSE2	0.246	0.262	0.160	0.135	1.000	-	-
RUSE3	0.163	0.217	0.145	0.137	0.397	1.000	-
SSTRAT	0.171	0.376	0.382	-0.026	0.277	0.428	1.000

Note: The numbers in red indicate significant relationships at the $p < 0.05$ level

When Business Intelligence capability (BICAP) and use of reporting guidelines (RUSE) items are taken as individual items, the results show that BICAP2, BICAP3 and RUSE3 are significantly and positively related to effective strategic planning. This means that the more BI capabilities are available BICAP2 and BICAP3, the more strategic planning will be effective, and the more reporting guidelines (RUSE) such as the Global Reporting Initiative (GRI) are employed, the more strategic planning will be effective. The Global Reporting Initiative (GRI) seeks to address this challenge by providing a comprehensive guideline on reporting on most key aspects of an organisation's life (GRI, 2005:7-8). The GRI guidelines have operated since 2000 and they are designed to meet information requirements of a diverse range of stakeholder groups (Fassin, 2009:114-115). The findings from this analysis are backed up by Herremans and Herschovis (2006:20-22) who attest to the sophistication of Sustainability Reporting guidelines developed by the GRI, an independent entity. The GRI guidelines are founded on principles such as transparency; inclusiveness and stakeholder engagement; auditability; completeness; relevance; accuracy; comparability; clarity and timeliness.

The findings from this study indicate a strong relationship between having reporting guidelines and effective strategic planning. The evolution of Sustainability Reporting is positively related to improvements in monitoring and reporting on strategic plans resulting in a significant increase in the number of companies issuing Sustainability Reports (Hubbard, 2009: 178-181).

8.9 Chapter Summary

This chapter presented the results of the surveys that were administered to the identified four groups of respondents. Reliability assessments were done using the Cronbach alpha and responses to the similar issues were compared amongst the four groups using the Analysis of Variance (ANOVA) techniques. With the aid of descriptive statistics, the key issues pertaining to reporting on strategic and other plans were discussed. Results from the surveys confirmed that Higher Education Institutions– including those in South Africa – are grappling with the same issues when it comes to Sustainability Reporting. The information cultures and Business Intelligence (BI) maturity are very similar.

The University Council or Board of Trustees is the custodians of governance in any Higher Education Institution. Governance and strategic planning processes could immensely be enhanced and enabled by the introduction of Sustainability Reporting practices. Results from correlations confirmed that certain variables relating to strategic planning, governance, Sustainability Reporting and BI are positively related to each other. Examples of the related variables include management buy-in, availing of BI capability and reports to all users, training stakeholders on standards such as the Global Reporting Initiative and overall improvement in communication within institutions.

In summary, some of the key components in introducing Sustainability Reporting in Higher Education Institutions include the following:

- Awareness and training in reporting principles and best practices;
- Appreciation of the benefits of BI;
- Identification of stakeholders and understanding their information requirements;
- Identification of factors that enable strategic planning and governance processes in Higher Education Institutions; and
- Identification of factors that could act as drivers in the introduction of Sustainability Reporting in Higher Education Institutions.

Conclusions from this study and recommendations for further research are contained in Chapter 9.

CHAPTER 9: CONCLUSIONS AND FUTURE RESEARCH

9.1 Introduction

The United Nations released a prototype *Global Sustainable Development Report* in September 2013. This report's theme "Building the Future we want", aptly summarises the challenges facing the planet and proposes ways of making assessments and bringing these to the attention of decision makers (United Nations, 2013:2). Organisations – including Higher Education Institutions- can contribute toward addressing issues on the global agenda on sustainable development. Sustainability Reporting provides a mechanism for bringing these issues to the attention of decision makers. Sustainability Reporting supports strategic planning and governance in organisations.

In light of the complex environments that organisations operate in, information plays a key role in supporting decision making (Blumberg, Cooper and Schindler, 2011:4). Organisations need information to monitor their performances against set targets. One way of achieving this is through reporting on all facets of an organisation's operations as usually outlined in the strategic plan. Sustainability Reports cover economic, environmental and social aspects of an organisation's existence and therefore provide a platform for tracking performance against its set objectives. Notwithstanding the current reporting practices, Higher Education Institutions in South Africa need to adopt Sustainability Reporting in line with best practice in governance. A Framework for Sustainability Reporting in Higher Education Institutions (FSRHEI) is a first step towards foregrounding Sustainability Reporting.

Sustainability Reporting in Higher Education needs to be supported by an information management system. Heeks (2006:73) proposes that public data should be Complete, Accurate, Relevant, Timely and Appropriate for presentation (CARTA). It takes a carefully planned and iterative process for organisational data to be CARTA. It is envisaged that the introduction and institutionalisation of Sustainability Reporting in Higher Education Institutions in South Africa will contribute towards achieving CARTA data.

The primary objective and main research questions for this study are stated below:

ROp: To develop a Sustainability Reporting Framework for Higher Education Institutions in South Africa.

RQm: What are the components of a Sustainability Reporting Framework for South African Higher Education Institutions?

The preceding chapters in the study addressed the following secondary research objectives:

RO1: To identify the factors that influence strategic planning in South African Higher Education;

RO2: To identify the characteristics of the South African Higher Education governance system;

RO3: To identify the factors which influence Sustainability Reporting in SA Higher Education;

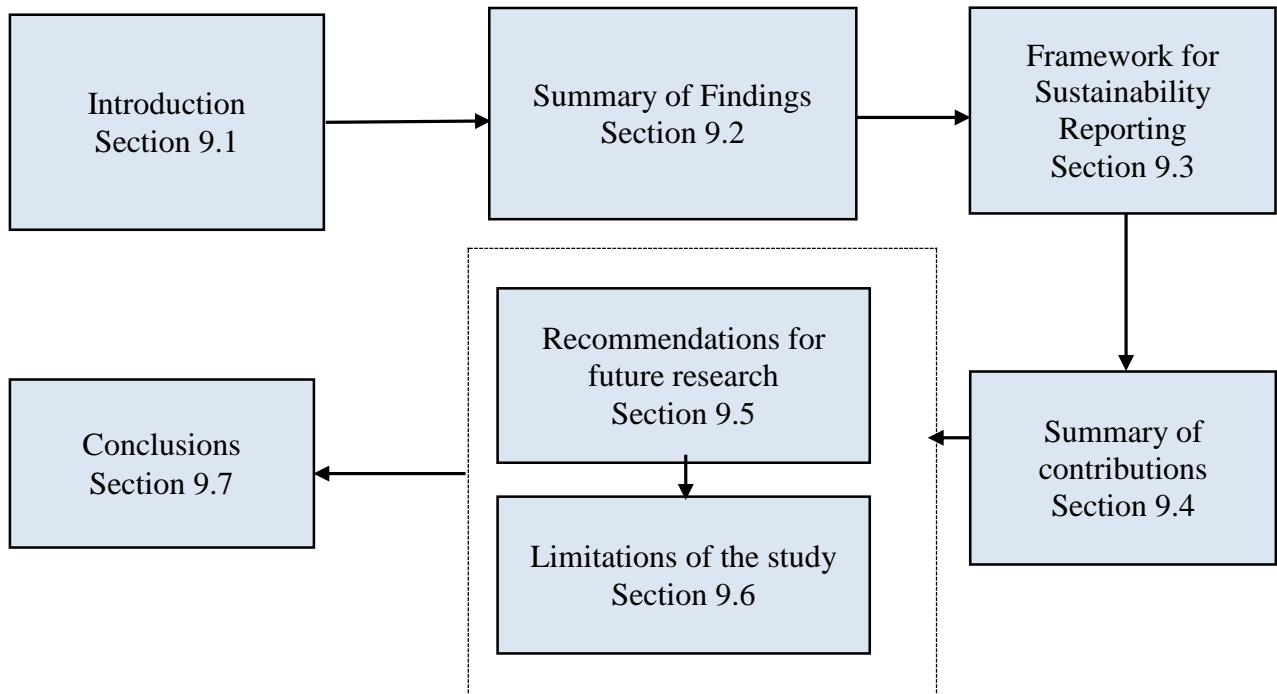
RO4: To identify the key factors that influence BI in South African Higher Education;

RO5: To identify appropriate research design and methodology for a study on Sustainability Reporting in SA Higher Education; and

RO6: To develop a Framework for Sustainability Reporting for South African Higher Education.

The research findings were presented and discussed in the penultimate chapter. Chapter Nine contains the conclusions of the study. The chapter comprises a summary of the research findings (Section 9.2), the Framework for Sustainability Reporting (Section 9.3), summary of contributions (Section 9.4), recommendations for further research (Section 9.5), limitations of the study (Section 9.6) and a conclusion of the chapter (Section 9.7). Figure 9.1 below provides an outline of Chapter 9.

Figure 9.1: Chapter 9 Outline



ROp: To develop a Sustainability Reporting Framework for Higher Education Institutions in South Africa.
RQm: What are the components of a Sustainability Reporting Framework for South African Higher Education Institutions?

9.2 Summary of Findings

Surveys were conducted by using questionnaires that were administered to four groups of respondents. These include Registrars in South African universities (GPSAHE questionnaire), Managers of information in South African universities (SRPHESA questionnaire), Managers of information of the participating international universities (SRIHE questionnaire) and managers at the Nelson Mandela Metropolitan University (SRPNMMU questionnaire). The feedback was analysed on the main themes of the study which include strategic planning, governance practices in Higher Education, Sustainability Reporting and Business Intelligence (BI). Except for questions relating to governance that were directed at Registrars, similar questions were contained in the administered questionnaire. The results were triangulated for validation. The results are discussed in line with the themes used in reviewing literature (Chapters 2-5) and in presenting empirical results (Chapter 8).

9.2.1 Strategic Planning in Higher Education

Strategic planning processes are key in entrenching sustainability practices in Higher Education Institutions. The surveys show that the following factors influence strategic planning in Higher Education Institutions:

- Communication, stakeholder consultation and the role of institutional leadership in driving the strategy process;
- Alignment of strategic planning with resource allocation processes;
- Setting up reporting standards for monitoring and measuring of performance;
- Access to quality and timely information for decision making;
- Clearly distinguishing between core and support activities;
- Alignment and harmony between strategies and plans at different levels within a Higher Education Institution; and
- Reporting on progress made with implementing strategic plans.

Based on the analysed results, the following managerial implications come to the fore:

- Cycles for strategic plans should be made longer to ensure continuity of activities;
- Different plans at Higher Education Institutions should be integrated and harmonised with the strategic plans.
- Higher Education Institutions should beware not to overemphasise financial reporting and neglect environmental and social dimensions of reporting;
- Higher Education Institutions should investigate the information requirements of all stakeholders and put plans in place to disseminate the same. This entails identifying information sources and users as well as developing acceptable reporting metrics;
- Communication between the different tiers of Management should be improved in order for information to flow across institutions;
- Sustainability Reporting by Higher Education Institutions has not been a focus of the South African Government. However, some elements of Sustainability Reporting are being introduced. This regulatory reporting should be used as a catalyst in introducing Sustainability Reporting; and
- Integration should not stop at the planning level but should also be seen when it comes to reporting.

9.2.2 Governance in Higher Education

The surveys revealed that governance in Higher Education Institutions can be strengthened by improving reporting. Use of annual reports, performance reporting and budget monitoring are important as they contribute to entrenching a culture of reporting. These reports can assist the University Council and other stakeholders to perform their oversight role. Councils in South African universities are well constituted and structured.

Other findings relating to governance include:

- Higher Education Institutions should ensure that their strategic plans are approved by the University Councils. This gives the strategic plans the required status on the institutional agenda. Governance structures should constantly monitor the progress made in implementing the plans;
- Stakeholder involvement is key in the success of strategic planning and Sustainability Reporting. The results revealed that key stakeholders, such as organised labour should not be ignored in developing reports;
- Risk management plays a catalytic role in introducing a culture of reporting and information sharing. Governance structures should be given the relevant information to manage institutional risks;
- There are advantages associated with embracing governance best practices such as the King III Report on corporate governance, the globally accepted reporting standards such as the GRI;
- Due to a lack of a Sustainability Reporting Framework for the Higher Education Sector, Higher Education Institutions place emphasis on different aspects of reporting; and
- Information about University plans is important to all stakeholders although the level of importance varies from one stakeholder to another.

9.2.3 Sustainability Reporting in Higher Education

Sustainability Reporting is in its infancy in Higher Education globally. The results of the survey indicated the following:

- Leadership plays a big role in efforts to introduce Sustainability Reporting in Higher Education Institutions. Management buy-in and commitment are crucial components for the successful introduction of Sustainability Reporting and effective strategic planning;

- Higher Education Institutions are faced with challenges that hinder the introduction of Sustainability Reporting. Some of the challenges can immediately be overcome by developing sector-specific reporting standards and by incentivising Sustainability Reporting;
- Reports produced by South African Higher Education Institutions are not integrated and aligned;
- The dimensions of reporting by universities indicate gaps – environmental and social aspects of reporting are not receiving adequate attention;
- Drivers for Sustainability Reporting include the desire for improved reporting, institutional leadership and a change in the regulatory environment with respect to reporting; and
- Training and awareness raising on Sustainability Reporting in Higher Education Institutions should be done as a matter of necessity;

9.2.4 Business Intelligence in Higher Education

Higher Education Institutions make use of different systems for information processing and reporting. Many of the available ERP systems do not adequately meet the reporting requirements of institutions. Lack of integration in business processes results in having multiple but disparate sets of data sources. A well-planned data warehouse is a good building block for BI capability. Appropriate reporting tools and user training are necessary in promoting an information culture supportive of Sustainability Reporting.

The surveys also indicate that the following factors contribute to BI in Higher Education Institutions

- Decision making is more complex because of increased data;
- Technological progress making BI capability more available;
- Government regulations;
- Reporting gaps in the existing ERP systems;
- Internal drive for better reporting; and
- Satisfying the information needs of stakeholders.

The following factors were identified that influence BI in Higher Education:

- The prevailing information culture (Functional, sharing, enquiry and discovery cultures);
- The quality of existing data; and
- Extent of use of information in business processes.

Higher Education Institutions that wish to derive value from BI should focus their attention on addressing challenges such as data quality, availability and access by investing in a BI strategy. A comprehensive BI strategy addresses aspects such as:

- Identification of existing reporting gaps;
- Integrating data from various sources; and
- Investing in tools and resources to ensure optimal use of BI capability.

Finally, those surveyed recognise the following as benefits of using BI in their institutions:

- Increased autonomy and flexibility for information users;
- Improved decision making and time saving;
- Improved business processes and operational performance; and
- Ability to comply with regulatory reporting requirements.

9.2.5 Components of Sustainability Reporting in Higher Education

The key components of Sustainability Reporting can be broken down into three broad categories - structures, processes and infrastructure. Structures relate to governance aspects, processes include strategic planning and Sustainability Reporting processes while infrastructure relates to the supporting technologies. Each of these categories comprise key factors that contribute to success in implementing Sustainability Reporting in Higher Education Institutions. Figure 9.2 presents these key factors.

Figure 9.2: Factors to consider in implementing Sustainability Reporting in SA HEI



Source: Author’s own construct

Table 9.1 provides a description for factors that should be considered during the introduction of Sustainability Reporting in Higher Education Institutions in South Africa.

Table 9.1: Factors to consider in introducing Sustainability Reporting in Higher Education Institutions in South Africa

Factor	Description
National regulations and best practices	<ul style="list-style-type: none"> • Contributing to national Higher Education outcomes • Compliance with national Government policy and regulations on sustainability • Submission of sustainability reports to national government Departments • Adhering to quality assurance standards

Table 9.1: Factors to consider in introducing Sustainability Reporting in Higher Education Institutions in South Africa (Continued)

Factor	Description
International best practices in reporting	<ul style="list-style-type: none"> • Adoption of reporting principles and guidelines provided by global bodies such as the United Nations • Using internationally recognised tools such as the Global Reporting Initiative (GRI) G4 and the BSC • Strengthening governance systems and processes such as risk management through reporting • Compliance with the King III Report on corporate governance • Introducing integrated reporting practices • Introducing holistic reporting that focuses on the economic, environment, social and educational perspectives • Creating awareness of the benefits of Sustainability Reporting to stakeholders
Higher Education Sector regulations	<ul style="list-style-type: none"> • Development of sector specific Sustainability Reporting benchmarks • Determine regulatory reports and frequency of reporting
Institution-specific policies and practices	<ul style="list-style-type: none"> • Strengthening governance through the introduction of Sustainability Reporting • Embracing integrated planning and reporting with respect to institutional plans (strategic, academic, Research, HR, Finance, Infrastructure, IT, etc.) • Train and create awareness of sustainability to all stakeholder groups • Define information and reporting requirements of stakeholders • Create the requisite infrastructure • Define roles and responsibilities for reporting • Promote a culture of reporting and sharing information
Investing in BI infrastructure	<ul style="list-style-type: none"> • Developing a BI capability that supports decision making in organisations • Making appropriate tools available for reporting at operational, tactical and strategic levels • Demonstrate the benefits of BI in the organisation

9.3 Framework for Sustainability Reporting

Based on results from the surveys and the literature reviewed, Figure 9.3 is proposed as a Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI).

Figure 9.3: Framework for Sustainability Reporting for Higher Education Institutions

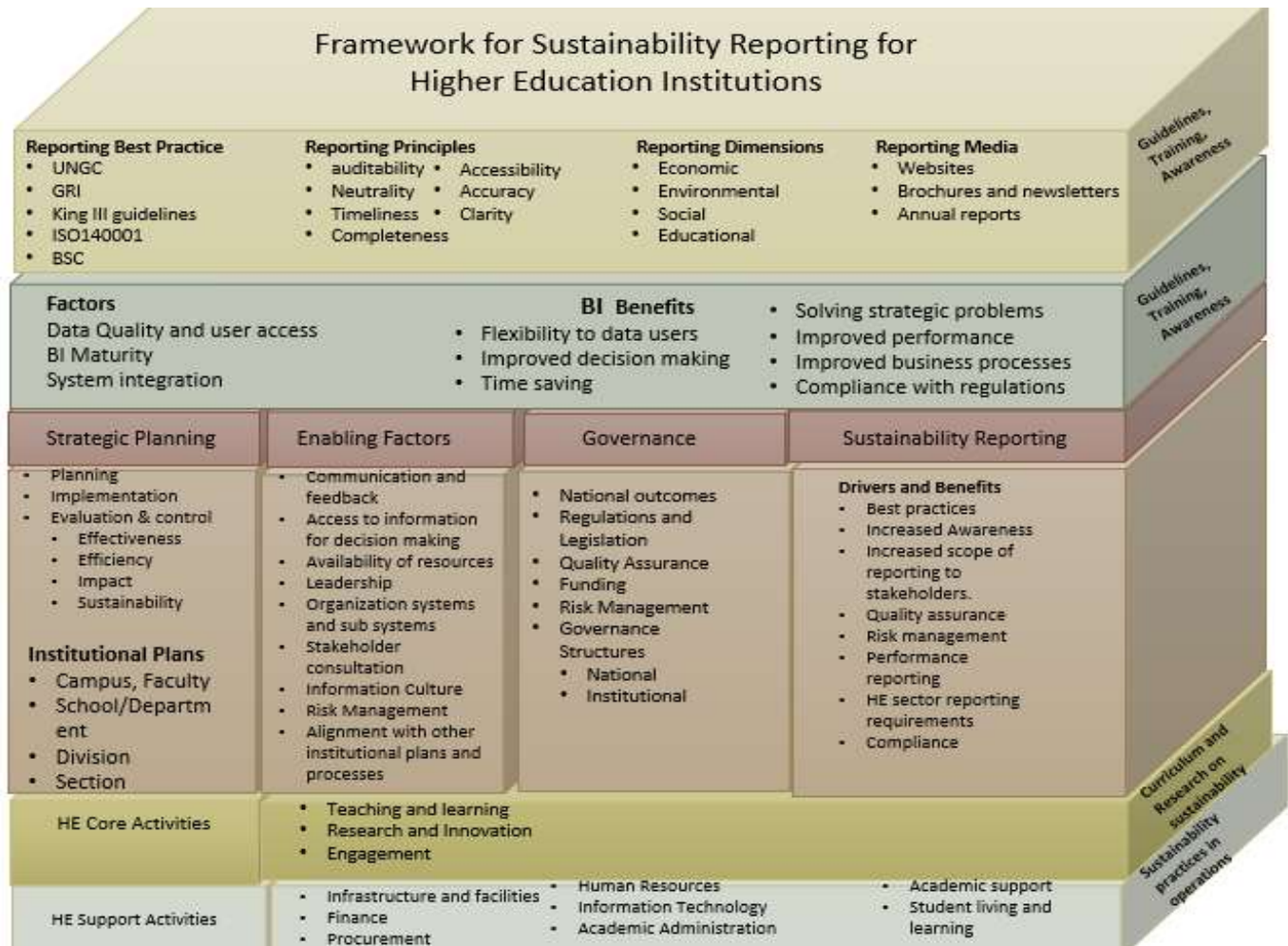


Figure 9.3 consolidates various components of a Sustainability Reporting Framework for Higher Education Institutions in South Africa. In order to be meaningful, Sustainability Reporting should support both core and support activities in Higher Education Institutions. Therefore, Sustainability should be expressed in the both the curriculum and in research that is undertaken. In addition, Higher Education Institutions should lead by example by promoting sustainability practices in their operations. Sustainability Reporting serves to remind institutions about their performance in that regard. Sustainability Reporting should be aligned with strategic planning and governance processes in Higher

Education Institutions. Strategic planning and governance processes provide a good platform for introducing Sustainability Reporting in Higher Education Institutions.

The factors that enable effective strategic planning and governance are key in the introduction of Sustainability Reporting in Higher Education Institutions. Examples of these factors include effective communication, access to reliable information for decision making, quality stakeholder consultation and the alignment of various institutional plans. On the other hand, the drivers and benefits associated with Sustainability Reporting provide impetus to both supporting strategic planning and governance processes at Higher Education Institutions. These drivers and benefits include aspects such as an expanded scope of reporting, compliance with regulatory requirements, quality assurance, risk management and alignment with best practices.

The BI capability of a Higher Education Institution is pivotal in the introduction of Sustainability Reporting. BI capability enables data from multiple sources to be converted into useful information that supports planning and accountability. Higher Education Institutions that exploit the potential of BI capability stand to benefit. The implementation of Sustainability Reporting in Higher Education Institutions is strengthened by a clear strategy that takes the reporting principles, reporting best practices, reporting dimensions and reporting media into account.

Finally, the FSRHEI should be supported by clear guidelines on Sustainability Reporting, BI and the reporting aspects of strategic planning and governance processes. The FSRHEI offers a basis for starting implementing Sustainability Reporting in a South African University.

9.4 Summary of Contributions

The contribution of this study to the body of knowledge is in the form of both theoretical and practical significance.

9.4.1 Theoretical Significance

This study has led to a proposed Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI). It is envisaged that some benefits may accrue to institutions that choose to adopt Sustainability Reporting. The guidelines for introducing Sustainability Reporting can enable universities in South Africa to approach planning and reporting in an integrated manner. Consequently, South African Higher Education Institutions will be in a better position to monitor their performance against planned targets and have early warning signs to correct deviations.

9.4.2 Suggestions for Applying the Research

Sustainability Reporting is still new in Higher Education in South Africa. Based on the findings from the research, a ten-step guide for South African Universities that wish to introduce Sustainability Reporting is hereby proposed. Table 9.2 contains the summary.

Table 9.2: A Ten step guide for the introduction of Sustainability Reporting in SA Higher Education Institutions

Step	Description
1 Understand the reporting context for sustainability and reporting in institutions.	<ul style="list-style-type: none"> • Identify stakeholders in the Sustainability Reporting ecosystem. • Identify enabling legislation. • Review institutional policies. • Comply with governance requirements. • Adopt best practices in governance and reporting and customise as necessary to suit an institution’s unique reporting needs. • Acknowledge and document limitations for adopting Sustainability Reporting in the Higher Education Sector.
2 Identify critical success factors for introduction of Sustainability Reporting	<ul style="list-style-type: none"> • Enlist the support and buy-in of the institution’s leadership and Top Management • Champion the development of sector-specific sustainability metrics and source benchmark data • Develop key performance indicators for monitoring performance against strategic goals and objectives • Select priority reporting areas and focus on the core business of the institution such as teaching and learning, research and engagement • Develop an information management strategy that addresses factors that could derail the introduction of Sustainability Reporting • Raise awareness of the benefits of Sustainability Reporting in the strategic planning processes. • Develop a change management plan and provide incentives for champions of sustainability initiatives
3 Establish information management and reporting principles for the institution	<ul style="list-style-type: none"> • Information should conform to Completeness, Accuracy, Relevance, Timeliness and Appropriateness for presentation (CARTA) checklist • Pursue data reliability that promotes institutional single version of the truth in terms of reporting • Define the content of reports and set the scope of reporting • Adopt best practices and customise to fit an institution’s reporting • Implement BI capability by using available frameworks

Table 9.2: A Ten step guide for the introduction of Sustainability Reporting in SA Higher Education Institutions (Continued)

Step	Description
4 Develop integrated institutional plans and highlight sustainability elements for each	<ul style="list-style-type: none"> • The institutional strategic plan should be integrated and supported by the following: <ul style="list-style-type: none"> - Faculty and Departmental Academic plans - Research plan - Infrastructure plan - Financial and investment plan - Human resources plan - Transformation plan - IT Plan
5 Identify gaps in the institutional reporting systems	<ul style="list-style-type: none"> • Ascertain information requirements for all role players and stakeholders • Document data sources and key personnel. Determine the primary data source e.g. ERP system and secondary data sources • Assess the ability of internal systems to collect and collate Sustainability Reporting data • Integrate data from multiple sources • Delineate roles and responsibilities for reporting • Select the appropriate reporting medium for each level of management and for each stakeholder group
6 Promote infrastructure for Sustainability Reporting.	<ul style="list-style-type: none"> • Invest in Business Intelligence and data warehousing infrastructure • Promote an organisational culture that encourages information sharing and informed decision making
7 Create awareness through training and workshops	<ul style="list-style-type: none"> • Include sustainability in curricula and co-curricular activities • Promote research on sustainability • Provide incentives for verifiable sustainability efforts • Train users on BI tools
8 Obtain governance approval for the Sustainability Reporting framework	<ul style="list-style-type: none"> • Align Sustainability Reporting in the institution's reporting framework
9 Publish annual sustainability report	<ul style="list-style-type: none"> • Allow all stakeholders and interested parties to view the institutions sustainability report. Publish the report in accessible formats
10 Review and evaluate Sustainability Reporting processes based on feedback from each step	<ul style="list-style-type: none"> • Obtain regular feedback from stakeholders and regulators. Act on the information provided by the report

9.4.3. Accomplishment of research objectives

Table 9.3 summarises the research objective and deliverables of the study.

Table 9.3: Summary of accomplishment of research objectives

Research Objectives	Research Objective Achieved?	Research Questions	Research Questions Answered?	Thesis Chapters	Chapter Deliverables
RO1	Yes	RQ1	Yes	Chapter 2	<ul style="list-style-type: none"> • Identification of factors that contribute to effective strategic planning in South African Higher Education Institutions • Identification of Sustainability Reporting variables that impact strategic planning in Higher Education
RO2	Yes	RQ2	Yes	Chapter 3	<ul style="list-style-type: none"> • Understanding of characteristics of governance in SA Higher Education and the implications for Sustainability Reporting
RO3	Yes	RQ3	Yes	Chapter 4	<ul style="list-style-type: none"> • Confirmation of factors that affect the introduction and implementation of Sustainability Reports in Higher Education Institutions
RO4	Yes	RQ4	Yes	Chapter 5	<ul style="list-style-type: none"> • Identification of factors that influence Business Intelligence in South African Higher Education
RO5	Yes	RQ5	Yes	Chapter 7	<ul style="list-style-type: none"> • Identification of appropriate research design and methods for a study on Sustainability Reporting in Higher Education
RO6	Yes	RQ6	Yes	Chapter 6	<ul style="list-style-type: none"> • Development of a conceptual Framework for Sustainability Reporting
				Chapter 8	<ul style="list-style-type: none"> • Results of the four surveys including the case study
ROp	Yes	RQm	Yes	Chapter 1	<ul style="list-style-type: none"> • Introduction of study and identification of research problem
				Chapter 9	<ul style="list-style-type: none"> • A proposed Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI) in South Africa • Development of guidelines for introducing Sustainability Reporting in South African Higher Education Institutions

9.5 Recommendations for future research

The study has shed light on a number of areas and in so doing has also identified areas that need more a more focussed in-depth study. Below is a list of suggested areas for further research:

- Experiences of stakeholders during and after the implementation of sustainability in Higher Education Institutions in South Africa;
- Determining the extent to which Sustainability Reporting contributes towards the attainment of institutional goals and objectives; and
- Relationship between Business Intelligence capability and Sustainability Reporting readiness in Higher Education Institutions.

9.6 Limitations of the study

A study of this nature involves a number of considerations. The study was conducted within public Higher Education Institutions and therefore aspects relating to private Higher Education Institutions were not covered. The governance processes are limited to South African Higher Education Institutions only. In addition, the number of respondents needs to be increased so that perspectives from all stakeholders in Higher Education can be incorporated in the proposed FSRHEI.

9.7 Conclusion

Sustainability Reporting is an imperative for South African Higher Education Institutions in order to improve their strategic planning and governance processes. Research has shown that Higher Education Institutions that introduce Sustainability Reporting benefit in the following ways:

- Informed decision making and therefore better risk management;
- Enhanced effectiveness and efficiencies in implementing their Strategic Plans;
- Relate better with their stakeholders and the publics they serve;
- Impact the communities they serve better by positively influencing their students and staff on the importance of responsible citizenship; and
- Contribute to global efforts towards sustainable development.

The study was conducted to investigate the components of a Sustainability Reporting Framework for Higher Education Institutions in South Africa. The empirical results revealed the following weaknesses in Sustainability Reporting in Higher Education Institutions in South Africa:

- Poor integration and alignment of plans and reports;
- Poor internal and external communication and information sharing;
- Poor BI capability and maturity levels in some Institutions;
- Lack of generally accepted reporting standards and guidelines;
- Gaps in information systems used for managing institutional business processes and transactions;
and
- Lack of training and awareness about Sustainability Reporting and its constituent components.

On the other hand, the following positive elements of Sustainability Reporting are evident in the literature on HEIs:

- Strong regulatory environment in the Higher Education Sector;
- Strong governance structures and systems;
- Availability of basic infrastructure to support reporting;
- Acknowledgement of the important role that Sustainability Reporting can play in Higher Education; and
- A culture of planning and reporting.

The empirical results also identified the following as important determinants of effective Sustainability Reporting in Higher Education Institutions:

- Effective governance structures at the national and institutional levels;
- Adopting best practices in governance, BI and Sustainability Reporting;
- Investment in BI tools and technologies that support Sustainability Reporting;
- Creating an enabling environment that nurtures and supports Sustainability Reporting. This includes the role of leadership, communication, resources, appropriate information culture, attitude towards risk management;
- Clearly identifying core and support activities and developing appropriate reporting mechanisms;
and
- Developing reporting standards, principles and agreeing on reporting dimensions and medium.

Against this background, the study, among others recommends the adoption of the proposed Framework for Sustainability Reporting for Higher Education Institutions (FSRHEI) and the accompanying guidelines which can assist South African universities to strengthen Sustainability

Reporting. By implementing these recommendations, the academic and administrative managers at South African universities would ensure the improvement of Sustainability Reporting and acquire its attendant benefits.

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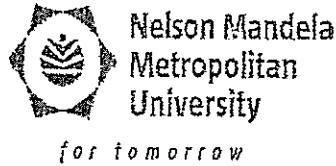
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Appendix A: University Ethics Clearance

Appendix A.



FORM E

ETHICS CLEARANCE FOR TREATISES AND THESES

Please type or complete in black ink

FACULTY: _____ Business and Economic Sciences _____

SCHOOL/DEPARTMENT: _____ NMMU Business School _____

I, (surname and initials of supervisor) _____ Prof. Calitz, A.P. _____

the supervisor for (surname and initials of candidate) _____ Bosire S.M. _____

_____ student number) _____ 212200585 _____

a candidate for the degree of _____ Doctor of Business Administration _____

with a treatise/ thesis entitled (full title of treatise/ thesis):

_____ A Sustainability Reporting Framework for a South African Higher Education Institution _____

considering the following ethics criteria (*please tick the appropriate block*):

	YES	NO
1. Is there any risk of harm, embarrassment of offence, however slight or temporary, to the participant, third parties or to the communities at large?		X
2. Is the study based on a research population defined as 'vulnerable' in terms of age (e.g children of school going age, students, and the aged), physical characteristics and/or disease status?		X
3. Does the data that will be collected require consent of an institutional authority for this study? An institutional authority refers to an organisation that is established by government to protect vulnerable people)		X
4. Will the participant's privacy, anonymity and confidentiality be disclosed?		X


5. Will feedback be given to participants? If you are working in a school or other institutional setting, will you be providing teachers, schools authorities or equivalent a copy of your results?		X
---	--	---

Please note that if any of the questions above have been answered in the affirmative the student will need to complete the full ethics clearance form and submit to the Faculty Ethics Co-ordinator.


hereby certify that the student has given his/her research ethical consideration and full ethics approval is not required.

A. Cabitz
SUPERVISOR / PROMOTER

26/04/2013
DATE


HEAD OF DEPARTMENT

26/8/2013
DATE


STUDENT

19/03/2012
DATE

Please ensure that the research methodology section from the proposal is attached to this form.

Sustainability Reporting in South African Higher Education Institutions

This survey forms part of DBA studies at the Nelson Mandela Metropolitan University (NMMU). Your input shall be treated as confidential with the understanding that the information given does NOT represent the official views of your University. This survey should take no more than 7 minutes to complete. Thank you for your time.
Samuel Bosire, NMMU, Cell No: 084 704 8774.

*1. Institution

Other (please specify)

2. Email address (if you would like to receive results from this survey)

3. Current job DESIGNATION

4. On a scale of 1=None to 5=Extensive, rate the extent to which each of the factors listed below has contributed towards the introduction of good governance systems and processes in your institution:

	1	2	3	4	5
Recent corporate failures in governance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changing regulatory climate and need to comply with legislation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduction of best practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendations by external bodies such as auditors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. From the list below, please identify the plans produced by your university as part of institutional planning

- Strategy Plan
- Financial plan
- Human Resources Plan
- Infrastructure Plan
- Information Technology Plan

Other (please specify)

6. From the list below, please identify the reports produced by your university in compliance with government regulations and requirements on reporting by providing the date the report was introduced at your university.

	Report produced	YYYY
HEMIS reports	<input type="checkbox"/>	<input type="checkbox"/>
Annual Reports	<input type="checkbox"/>	<input type="checkbox"/>
Audited annual financial Statements	<input type="checkbox"/>	<input type="checkbox"/>
Institutional research report	<input type="checkbox"/>	<input type="checkbox"/>
Sustainability report	<input type="checkbox"/>	<input type="checkbox"/>

7. On a scale of 1 = None to 5 = Extensive, indicate your role in relation to the reports identified in question 7 above

	1	2	3	4	5
Information analysis and integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Report compilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation of reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

8. Which Government bodies require information from your university?

- Department of Higher Education and training (DHET)
- Department of Science and Technology (DST)
- Higher Education South Africa (HESA)
- Higher Education Quality Council (HEQC)
- Human Science Research Council (HSRC)
- National Research Foundation (NRF)

Other (please specify)

9. What is the current size (members with voting rights) of your Council and what in your opinion is the ideal size?

	Less than 10	10 – 19	20 – 29	30 or more
Current Size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ideal Size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your University Council:

	1	2	3	4	5
Council comprises members that reflect diversity in academic qualifications and technical expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The size of the council is important for its effectiveness;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A formal policy is required to govern changes in Council membership;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The University should have a programme of inducting new council members;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be mechanisms to evaluate the performance of university Councils;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular reviews of the Terms of Reference (ToR) for Council and its sub-committees are necessary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University Councils should have a formal risk management system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Council considers both financial and non-financial information comprehensively when making decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. An integrated report covers social, economic and environmental aspects of a University. Choose the aspect(s) of integrated reporting that your university presents to council.

- Economic
- Environmental
- Social

12. The council of my university has the following committees

- Audit and risk
- Finance and facilities committee
- Ethics committee
- IT Governance
- Remuneration Committee
- Nomination committee

13. On a scale of 1 = None to 5 = Extensive, indicate the extent to which the following bodies/structures are part of your institution's governance processes

	1	2	3	4	5
Council	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Executive Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transformation Forum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student representative council	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organised labour / Unions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. On a scale of 1 = Not important to 5 = Critically important, rate the importance of the following type of information for the effective governance at a university?

	1	2	3	4	5
Financial report	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrated Sustainability report	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

15. Has your institution developed any criteria for reporting ?

- Yes
- No

16. Has your institution developed any metrics for reporting ?

- Yes
- No

17. The unit that provides Business intelligence/ MIS reports at my university is attached to the following office

- Registrar's office
- Strategic planning
- Human Resources
- Finance
- Information Technology

18. Choose a description from the list below that best describes the information culture in your institution

- Functional culture – Information is used as a basis for exerting power and influence. Information is not freely available and shared.
- Sharing culture – characterised with trust in information systems
- Enquiry culture – Characterised by search for better and more information by both Managers and staff.
- Discovery culture – Characterised by innovation

19. Strategic planning at my university is done using the following cycle

- 3 years
- 5 years

Other (please specify)

20. From the list below, indicate the mechanisms that your institution use for monitoring progress made in meeting targets set in its strategic plans?

- Regular reports on performance against targets in institutional plans such as Strategic plan
- Budget monitoring
- Employee performance management
- Achievements contained in the annual report

21. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your University

	1	2	3	4	5
The University Council has approved the current strategic plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is lack of a sector specific (Higher Education) reporting framework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sustainability reporting for Higher Education institutions

This survey forms part of DBA studies at the Nelson Mandela Metropolitan University in Port Elizabeth. The survey is aimed at validating the factors associated with sustainability reporting in the higher education sector in South Africa. The save button is at the end of the form.

This survey should take no more than 10 minutes to complete. Thank you for participating. Enquiries can be directed to the email address below:

Samuel.bosire@nmmu.ac.za

*1. Institution

Other (please specify)

2. What is the job title for your current position?

3. Department / Unit?

4. Council Member?

Yes

No

5. Governance in Higher Education.

On a scale of 1=None to 5=Extensive, rate the extent to which each of the factors listed below has contributed towards the introduction of good governance systems and processes in your institution:

	1	2	3	4	5
Recent corporate failures in governance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changing regulatory climate and need to comply with legislation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduction of best practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendations by external bodies such as auditors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. On a scale of 1=None to 5=Extensive, indicate your role in relation to sustainability reporting:

	1	2	3	4	5
Information analysis and integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Report compilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation of reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. On a scale of 1=None to 5=Extremely important, rate the importance of information on strategic plans for the following stakeholders

	1	2	3	4	5
Current and prospective employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prospective students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alumni	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Donors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government regulators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. What in your opinion is the ideal size of your University Council (members with voting rights)?

- Less than 10
- 10 – 19
- 20 – 29
- 30 or more

9. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your University Council:

	1	2	3	4	5
Council comprises members that reflect diversity in academic qualifications and technical expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The size of the council is important for its effectiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A formal policy is required to govern changes in Council membership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The University should have a programme of inducting new council members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be mechanisms to evaluate the performance of university Councils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular reviews of the Terms of Reference (ToR) for Council and its sub-committees are necessary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University Councils should have a formal risk management system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Council considers both financial and non-financial information comprehensively when making decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10.

- Economic
- Environmental
- Social

11. SUSTAINABILITY REPORTING

Rate your knowledge on reporting guidelines from the sources below and the extent to which your institution uses them

	Your level of knowledge 1=Poor ... 5=Excellent	Extent to which used by your institution 1=Not ... 5=Extensive
Global Reporting Initiative	<input type="text"/>	<input type="text"/>
King III Report on Corporate Governance	<input type="text"/>	<input type="text"/>
Applicable SA Government legislation	<input type="text"/>	<input type="text"/>

12. Indicate if you agree with the following statements on sustainability reporting taken from the King III report? 1=Strongly disagree to 5=Strongly agree

	1	2	3	4	5
There is a positive relationship between good governance and compliance with the law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategy, risk and sustainability are inseparable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Failure to manage risks can have disastrous effects on the implementation of strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. What impact will the following factors have in advancing sustainability reporting at your university? 1=None to 5=Extensive

	1	2	3	4	5
Regulatory pressure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pressure from other bodies such as the media and society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expected positive spin offs such as enhanced reputation in the eyes of stakeholders and donors, attraction of quality staff etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. What negative impact will the following aspects have on the implementation of sustainability reporting in your university? 1=None to 5=Severe

	1	2	3	4	5
The voluntary nature of sustainability reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of sector specific (Higher Education) reporting standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of comparability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of standards to audit sustainability reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Please indicate to what extent you have knowledge about the following internationally recognized sustainability standards 1=None ... 5=Extensive

	1	2	3	4	5
The Dashboard – developed by the United Nations commission on sustainability development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Human Development Index (HDI) that measures longevity, living standards and educational levels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
millennium development goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

16. Does your department report on the following?

	Yes	No
Financial performance	<input type="radio"/>	<input type="radio"/>
Performance against strategy objectives	<input type="radio"/>	<input type="radio"/>
Compliance with legislation	<input type="radio"/>	<input type="radio"/>
Environmental impact	<input type="radio"/>	<input type="radio"/>
Corporate social responsibility/ engagement	<input type="radio"/>	<input type="radio"/>

17. Rate the challenges facing performance evaluation in Higher Education 1=None ... 5=Severe

	1	2	3	4	5
Unavailability of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-existence of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incompleteness of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of clear information management strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of integration in reporting systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limitations with data analytical capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perceived lack of action on the information provided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staleness of information and unsuitability for decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor information presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

18. On a scale of 1=Poor to 5=Excellent, indicate the level to which the following are drivers for integrated reporting in the annual reports of your institution.

	1	2	3	4	5
Need to integrate aspects of corporate responsibility in annual reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership considerations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Following trends on reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improving the quality of reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Indicate to what extent you have received training on sustainability reporting and further training you require in this regard?

Training received 1=None... 5=Extensive Training required 1=None... 5=Extensive

Understanding Sustainability reporting	<input type="text"/>	<input type="text"/>
Using business intelligence tools	<input type="text"/>	<input type="text"/>
Developing reporting metrics	<input type="text"/>	<input type="text"/>
Use of technologies that enable presentation (e.g dashboards and balanced score cards).	<input type="text"/>	<input type="text"/>

Other (please specify)

20. BUSINESS INTELLIGENCE (BI)

Put a tick next to any of the mediums that your department uses to disseminate its reports to stakeholders.

- University website
- Brochures
- Newsletters
- Published annual reports

21. Rate the importance of the following as drivers of business intelligence in your institution. 1=Not important ... 5=Extremely important

	1	2	3	4	5
Regulations such as the Sarbenes Oxley Act in the USA and King III code in South Africa;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gaps in many Enterprise Resource Planning (ERP) systems;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A desire for better reporting metrics; and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The imperative to become and remain competitive as stated in the university's strategic plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Rate the levels of capability in the use of business intelligence at your institution. 1=Poor to 5=Excellent

	1	2	3	4	5
Organizational memory (storing information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insight (analyses and scenario planning)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation (information presented in user-friendly fashion)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. List the BI technologies (e.g. dashboards, scorecards, simple MS Excel reports etc.) employed by your organization for providing information to the following levels of management:

Strategic	<input type="text"/>
Tactical (middle management)	<input type="text"/>
Operational	<input type="text"/>

24. List the IT systems and platforms that your institution uses for business intelligence

25. Choose a description from the list below that best describes the information culture in your institution.

- Functional culture – Information is used as a basis for exerting power and influence. Information is not freely available and shared
- Sharing culture – characterized with trust in information systems
- Enquiry culture – characterized by search for better and more information by both Managers and staff.
- Discovery culture – characterized by innovation.

26. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your University.

	1	2	3	4	5
Formats of the reports are Pre-determined.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The frequency of development and distribution of the reports is Pre-determined.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The reports are generated on an ad-hoc basis depending on request	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BI reports are made available to all relevant users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BI reports are availed only to information requesters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Users are encouraged and empowered to access BI reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. To what extent are the following technologies that enable presentation used by your university: 1=None ... 5=Extensive

	1	2	3	4	5
Visual analytics (use of computer graphics to create visual representations of large collections of information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance dashboards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Balanced scorecards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
on line analytical processing (OLAP) applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

28. STRATEGIC PLANNING

Strategic planning in your department is done using the following cycle

- 3 years
 5 years
 Other (specify)

Other (please specify)

29. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your University.

	1	2	3	4	5
Strategic planning is aligned to the budgeting processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The prioritisation of resource allocation is guided by the strategic plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a mechanism for reporting on the progress the university is making in implementing its strategic plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The strategic planning process is consultative and relevant stakeholders contribute in the strategy formulation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is lack of a sector specific (Higher Education) reporting framework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university should have tools to monitor the implementation of its strategy plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainability reporting will greatly be enhanced if reporting is done on the institutional strategy plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university has identified its information sources and information users for purposes of reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. From the list below, choose the mechanisms that your department employs to monitor progress made in meeting targets set in its strategic plans?

- Regular reports on performance against targets in institutional plans such as Strategic plan
 Budget monitoring
 Employee performance management
 Achievements contained in the annual report

31. On a scale of 1 = None to 5 = extensive, rate the impact of the following factors in the introduction of reporting on the performance against the strategic plan at your university:

	1	2	3	4	5
Lack of clearly defined reporting metrics and standards for reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of many reporting sources and lack of information integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of a dedicated driver	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Existence of a dis juncture between strategy development and implementation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management buy-in and support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sustainability reporting practices in Higher Education - International pers...

This survey forms part of DBA studies at the Nelson Mandela Metropolitan University Business School, South Africa. The study is about Sustainability Reporting Practices in Higher Education. A Sustainability report is an organizational report that provides information on all aspects of an institution's performance - economic/financial, environmental, social and governance.

This survey should take approximately 15 minutes to complete. Your input shall be treated as confidential with the understanding that the information given does NOT represent the official views of your institution. Your voluntary participation in the survey is highly appreciated. Enquiries can be emailed to: Samuel.bosire@nmmu.ac.za

*1. Institution

2. What is the job title for your current position?

3. Are you a member of Board of Trustees / University Council

- Yes
- No

4. Governance in Higher Education.

On a scale of 1=None to 5=Extensive, rate the extent to which each of the factors listed below has contributed towards the introduction of sustainability reporting at your institution:

	1	2	3	4	5
Recent corporate failures in governance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changing regulatory climate and need to comply with legislation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduction of best practices in reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendations by external bodies such as auditors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. On a scale of 1=None to 5=Extensive, indicate your role in sustainability reporting at your institution:

	1	2	3	4	5
Information analysis and integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Report compilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation of reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. On a scale of 1=None to 5=Extremely important, rate the importance of information on strategic plans for the following stakeholders

	1	2	3	4	5
Current and prospective employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prospective students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alumni	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Donors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State/ Government regulators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. What in your opinion is the ideal size of your University Council/ Board of Trustees

- Less than 10
- 10 – 19
- 20 – 29
- 30 or more

8. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your University Council / Board of Trustees:

	1	2	3	4	5
Council/BoT comprises members that reflect diversity in academic qualifications and technical expertise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The size of the council/BoT is important for its effectiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A formal policy is required to govern changes in Council/BoT membership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The institution should have a programme of inducting new council/BoT members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There should be mechanisms to evaluate the performance of the university Council/BOT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular reviews of the Terms of Reference for Council/BoT and its sub-committees are necessary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Councils/BoTs should have a formal risk management system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Council/BoT considers both financial and non-financial information comprehensively when making decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. An integrated report covers social, economic and environmental aspects of a University. From the list below, identify aspect(s) of integrated reporting that your institution reports on.

- Economic
- Environmental
- Social

10. SUSTAINABILITY REPORTING

Rate your knowledge on reporting guidelines from the sources below and the extent to which your institution uses them

	Your level of knowledge 1=Poor ... 5=Excellent	Extent to which used by your institution 1=Not ... 5=Extensive
Global Reporting Initiative (GRI)	<input type="text"/>	<input type="text"/>
Best practices in Corporate Governance	<input type="text"/>	<input type="text"/>
Applicable State/ Government legislation	<input type="text"/>	<input type="text"/>

11. On a scale of 1 = strongly disagree to 5 = strongly agree, Indicate the level of your agree with the following statements on sustainability reporting.

	1	2	3	4	5
There is a positive relationship between good governance and compliance with the law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategy, risk and sustainability are inseparable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Failure to manage risks can have disastrous effects on the implementation of strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. On a scale of 1 = None to 5 = Extensive, indicate the impact of the following factors in the advancement sustainability reporting practices at your institution.

	1	2	3	4	5
Government/ State Regulatory requirements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pressure from other bodies such as the media and society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expected positive spin offs such as enhanced reputation in the eyes of stakeholders and donors, attraction of quality staff etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. On a scale of 1 = None to 5= Severe, rate the impact of the following factors in the non-implementation of sustainability reporting in your institution.

	1	2	3	4	5
The voluntary nature of sustainability reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of sector specific (Higher Education) reporting standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of benchmarks for comparison	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of standards to audit sustainability reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Identify areas that your institution reports on from the list below.

	Yes	No
Financial performance	<input type="radio"/>	<input type="radio"/>
Performance against strategy objectives	<input type="radio"/>	<input type="radio"/>
Compliance with legislation	<input type="radio"/>	<input type="radio"/>
Environmental impact	<input type="radio"/>	<input type="radio"/>
Corporate social responsibility/ engagement	<input type="radio"/>	<input type="radio"/>

15. On a scale of 1=None to 5=Severe, rate the challenges associated with performance evaluation at your institution.

	1	2	3	4	5
Unavailability of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-existence of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Incompleteness of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of clear information management strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of integration in reporting systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limitations with data analytical capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perceived lack of action on the information provided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staleness of information and unsuitability for decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor information presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

16. On a scale of 1=None to 5=Extensive, rate the influence of the following factors in introducing integrated reporting at your institution.

	1	2	3	4	5
Need to integrate aspects of corporate responsibility in annual reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership considerations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Following trends on reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improving the quality of reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Indicate to what extent your institution has provided training on sustainability reporting and further training that may be required by relevant people at your institution.

Training provided 1=None... 5=Extensive Training required 1=None... 5=Extensive

Understanding Sustainability reporting	<input type="text"/>	<input type="text"/>
Using business intelligence tools	<input type="text"/>	<input type="text"/>
Developing reporting metrics	<input type="text"/>	<input type="text"/>
Use of technologies that enable presentation (e.g dashboards and balanced score cards).	<input type="text"/>	<input type="text"/>

Other (please specify)

18. BUSINESS INTELLIGENCE (BI)

Identify the medium that your institution uses to disseminate its sustainability reports to stakeholders.

- University website
- Brochures
- Newsletters
- Published annual reports

19. On a scale of 1=Not important ... 5=Extremely important, rate the importance of the following as drivers of business intelligence in your institution.

	1	2	3	4	5
Government regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gaps in many Enterprise Resource Planning (ERP) systems;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A desire for better reporting metrics; and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The imperative to become and remain competitive as stated in the university's strategic plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Rate the levels of capability in the use of business intelligence at your institution. 1=Poor to 5=Excellent

	1	2	3	4	5
Organizational memory (storing information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insight (analyses and scenario planning)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Presentation (information presented in user-friendly fashion)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. List the BI technologies (e.g. dashboards, scorecards, simple MS Excel reports etc.) employed by your organization for providing information to the following levels of management:

Strategic	<input type="text"/>
Tactical (middle management)	<input type="text"/>
Operational	<input type="text"/>

22. In the space provided below, please provide examples of the business intelligence tools used by your institution

23. Choose a description from the list below that best describes the information culture in your institution.

- Functional culture – Information is used as a basis for exerting power and influence. Information is not freely available and shared
- Sharing culture – characterized with trust in information systems
- Enquiry culture – characterized by search for better and more information by both Managers and staff.
- Discovery culture – characterized by innovation.

24. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about Business Intelligence (BI) reports in your university.

	1	2	3	4	5
Formats of the reports are Pre-determined.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The frequency of development and distribution of the reports is Pre-determined.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The reports are generated on an ad-hoc basis depending on request	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BI reports are made available to all relevant users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BI reports are availed only to information requesters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Users are encouraged and empowered to access BI reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. STRATEGIC PLANNING

Strategic planning in your department is done using the following cycle

- 3 years
- 5 years

Other (please specify)

26. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about your institution.

	1	2	3	4	5
Strategic planning at my institution is aligned to the budgeting processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The prioritisation of resource allocation is guided by the strategic plan at my institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Intelligence (BI) tools are used to report on progress made in implementing its strategic plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The strategic planning process is consultative and relevant stakeholders contribute in the strategy development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is lack of sector specific (Higher Education) reporting sustainability reporting guidelines.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The university should have tools to monitor the implementation of its strategy plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainability reporting will be boosted if the institutional strategy plan is monitored	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information sources and information users are well known and documented for purposes of reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. From the list below, choose the mechanisms that your institution uses to monitor progress made in meeting targets set in its strategic plans?

- Regular reports on performance against targets in institutional plans such as Strategic plan
- Budget monitoring
- Employee performance management
- Achievements contained in the annual report

Sustainability reporting - A case for NMMU's Vision 2020

This survey forms part of DBA studies at the Nelson Mandela Metropolitan University (NMMU) Business School. The study is about Sustainability Reporting Practices in Higher Education. A Sustainability report is an organizational report that gives information about economic, environmental, social and governance performance. This survey focusses on sustainability reporting as it relates to Vision 2020- NMMU's strategic plan.

This survey should take approximately 15 minutes to complete.

Your participation in the survey is voluntary and will be greatly appreciated. Enquiries can be directed to the email address: Samuel.bosire@nmmu.ac.za

*1. Faculty / Branch

Other (please specify)

2. School, Department or Division

Other (please specify)

3. Email address (if you would like to receive results from this survey)

4. STRATEGIC PLANNING

On a scale of 1=None to 5=Extensive, rate the extent to which you are familiar with contents of the following institutional Vision2020 plans:

	1	2	3	4	5
4.1. NMMU Strategic Plan (Vision 2020)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2. NMMU Academic Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3. NMMU Research and Innovation Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4. NMMU Financial Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.5. NMMU Human Capital Management Plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.6. NMMU Transformation and equity plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.7. Your School/Department/Division's annual plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about reporting on Vision2020:

	1	2	3	4	5
5.1. The requirements for reporting on NMMU Vision 2010 are well understood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.2. The process of developing Vision 2020 was consultative and inclusive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.3. Vision 2020 is at a very high level and hence does not lend itself to reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.4. The key activities undertaken by my department/unit/faculty are not reflected in Vision 2020	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.5. My Faculty/branch/department is on track in meeting Vision 2020 targets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.6. I get feedback on progress with implementing Vision 2020.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. On a scale of 1=None to 5=Extensive, indicate your role in relation to sustainability reporting (reporting on economic/financial, social, environmental, and governance performance):

	1	2	3	4	5
6.1. Information gathering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.2. Information analysis and integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.3. Report compilation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.4. Presentation of reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. On a scale of 1=None to 5=Extremely important, rate the importance of information on strategic plans for the following stakeholders

	1	2	3	4	5
7.1. Current and prospective employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.2. Current students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.3. Prospective students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.4. Alumni	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.5. Donors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.6. Local community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.7. Service providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.8. Government regulators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about Planning at NMMU.

	1	2	3	4	5
8.1. Strategic planning is aligned to the budgeting processes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.2. The prioritisation of resource allocation is guided by the strategic plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.3. There is a mechanism for reporting on the progress the university is making with Vision 2020.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.4. Strategy planning processes are consultative and stakeholders participate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.5. The university should have tools to monitor the implementation of its strategy plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.6. Sustainability reporting will greatly be enhanced if reporting is done on the institutional strategy plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.7. The university has identified its information sources and information users for purposes of reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. On a scale of 1 = None to 5 = extensive, rate the impact of the following factors on the introduction of reporting on the performance on the strategic plan at the NMMU:

	1	2	3	4	5
9.1. Lack of clearly defined reporting metrics and standards for reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.2. Use of many reporting sources and lack of information integration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.3. Lack of awareness of Vision 2020	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.3. A disconnect between strategy development and implementation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.4. Lack of Management buy-in and support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. From the list below, choose the mechanisms that your department employs to monitor progress made in meeting targets set in its strategic plans?

- 10.1. Regular reports on performance against targets in institutional plans such as Strategic plan
- 10.2. Budget monitoring
- 10.3. Employee performance management
- 10.4. Achievements contained in the annual report

11. SUSTAINABILITY REPORTING

Indicate if you agree with the following statements on sustainability reporting taken from the King III report? 1=Strongly disagree to 5=Strongly agree

	1	2	3	4	5
11.1. There is a positive relationship between good governance and compliance with the law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.2. Strategy, risk and sustainability are inseparable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.3. Failure to manage risks can have disastrous effects on the implementation of strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Does your department report on the following?

	Yes	No
12.1. Financial performance	<input type="radio"/>	<input type="radio"/>
12.2. Performance against Vision 2020 Key performance indicators	<input type="radio"/>	<input type="radio"/>
12.3. Compliance with legislation	<input type="radio"/>	<input type="radio"/>
12.4. Impact of its activities on the environment	<input type="radio"/>	<input type="radio"/>
12.5. Corporate social responsibility and NMMU engagement activities	<input type="radio"/>	<input type="radio"/>

13. Rate your knowledge on reporting guidelines from the sources below and the extent to which your Department uses them

	Your level of knowledge 1=Poor ... 5=Excellent	Extent to which used by your institution 1=Not ... 5=Extensive
13.1. Global Reporting Initiative	<input type="text"/>	<input type="text"/>
13.2. King III Report on Corporate Governance	<input type="text"/>	<input type="text"/>
13.3. Government legislation and regulations	<input type="text"/>	<input type="text"/>

14. What impact will the following factors have in advancing sustainability reporting at the NMMU ? 1=None to 5=Severe

	1	2	3	4	5
14.1. Government Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.2. Pressure from other bodies such as the media and society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.3. Expected positive spin offs such as enhanced reputation in the eyes of stakeholders and funding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.4. institutions, attraction of quality staff etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. On a scale of 1=none to 5 = Severe, indicate the impact that the following aspects have on the implementation of sustainability reporting at NMMU.

	1	2	3	4	5
15.1. The voluntary nature of sustainability reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.2. Lack of sector specific (Higher Education) reporting standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.3. Lack of basis for making comparison.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.4. Lack of standards to audit sustainability reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. On a scale of 1=none to 5 = extensive, estimate your understanding of the following internationally recognized sustainability reporting guidelines.

	1	2	3	4	5
16.1. The Dashboard – developed by the United Nations commission on sustainability development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.2. The Human Development Index (HDI) that measures longevity, living standards and educational levels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.3. Millennium Development Goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16.4. Other (please specify)

17. Rate the challenges facing performance evaluation in Higher Education 1=None ... 5=Severe

	1	2	3	4	5
17.1. Unavailability of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.2. Non-existence of data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.3. Incompleteness of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.4. Lack of clear information management strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.5. Lack of integration in reporting systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.6. Limitations with data analytical capability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.7. Perceived lack of action on the information provided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.7. Staleness of information and unsuitability for decision making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.8. Poor information presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.9. Other (please specify)	<input type="text"/>				

18. On a scale of 1=Low to 5=very high, rate the the level of influence of the following factors in the introduction of integrated reporting in NMMU's Annual report.

	1	2	3	4	5
18.1. Need to integrate aspects of corporate responsibility in annual reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.2. Leadership considerations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.3. Following trends on reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.4. Improving the quality of reporting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Indicate to what extent you have received training on sustainability reporting and further training you require in this regard?

	Training received 1=None... 5=Extensive	Training required 1=None... 5=Extensive
19.1. Understanding Sustainability reporting	<input type="text"/>	<input type="text"/>
19.2. Using business intelligence tools	<input type="text"/>	<input type="text"/>
19.3. Developing reporting metrics	<input type="text"/>	<input type="text"/>
19.4. Use of technologies that enable presentation (e.g dashboards and balanced score cards).	<input type="text"/>	<input type="text"/>
19.5. Other (please specify)	<input type="text"/>	

20. BUSINESS INTELLIGENCE (BI)

From the list below, select the platforms that your department uses to disseminate its reports to stakeholders.

20.1. University website

20.3. Newsletters

20.2. Brochures

20.4. Published annual reports

20.5. Other (please specify)

21. Rate the importance of the following as drivers of business intelligence in your institution. 1=Not important ... 5=Extremely important

	1	2	3	4	5
21.1. Best practices such as the King III code in South Africa;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.2. Gaps in Enterprise Resource Planning (ERP) systems e.g ITS;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.3. A desire for better reporting;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.4. The imperative to become and remain competitive as stated in the university's strategic plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Rate the levels of capability in the use of Business Intelligence reports at the NMMU. 1=Poor to 5=Excellent

	1	2	3	4	5
22.1. Organizational memory (storing information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.2. Insight (analyses and scenario planning)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.3. Presentation (information presented in user-friendly fashion)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Select the BI tools that your School/ Department uses for preparing information to various levels of management:

23.1. Strategic

23.2. Tactical (middle management)

23.3. Operational

23.4. Other (please specify)

24. Choose a description from the list below that best describes the information culture in your institution.

- 24.1. Functional culture – Information is used as a basis for exerting power and influence. Information is not freely available and shared
- 24.2 Sharing culture – characterized by trust in institutional information systems
- 24.3. Enquiry culture – characterized by search for better and more information by both Managers and staff.
- 24.4. Discovery culture – characterized by innovation.

25. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate if you agree with the following statements about reporting at the NMMU.

	1	2	3	4	5
25.1. Formats of performance reports are Pre-determined.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.2. The frequency distribution of the reports is Predicatable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.3. The reports are generated on an ad-hoc basis depending on request	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.4. BI reports are made available to all relevant users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.5. BI reports are availed only to information requesters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.6. Users are encouraged to access BI reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.7. Users are empowered to access BI reports.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26. To what extent are the following technologies that enable presentation used by your university: 1=None ... 5=Extensive

	1	2	3	4	5
26.1. Visual analytics (use of computer graphics to create visual representations of large collections of information).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26.2. Performance dashboards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26.3. Balanced scorecards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26.4. Online analytical processing (OLAP) applications.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26.5. Other (please specify)					

27. On a scale of 1 = Strongly disagree to 5 = Strongly agree, indicate your level of agreement with the statements on sustainability at the NMMU.

	1	2	3	4	5
27.1. Through reporting on Vision 2020, NMMU will achieve targets set faster.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27.2. Vision 2020 is a strategic concept that does not lend itself for other use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27.3. Most information that is to be reported on is available, albeit in different format;	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27.4. A framework is needed for sustainability reporting at the NMMU.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>