ADJUSTING THE DUPONT ANALYSIS TOOL WITHIN A SUSTAINABILITY CONTEXT

by

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Submitted in partial fulfilment of the requirements for the degree

Master of Commerce in Financial Management Sciences

in the

Faculty of Economic and Management Sciences

at the

University of Pretoria

Supervisor: Prof. D.G. Gouws

November 2012

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

University of Pretoria

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ACKNOWLEDGEMENTS

It is with immense gratitude that I acknowledge the support and help of my Professor Daan Gouws during my studies. I am furthermore indebted to my family and friends who offered their support throughout. Without the support and encouragement of the people close to me, I would not have been able to complete this degree. Finally, a special thanks to the University of Pretoria who offered me excellent facilities within which I was able to perform meaningful research.

ABSTRACT

The importance of relationships can be interpreted on a macro scale and understood as the link between any two or more variables or entities and how they affect each other. Determining this can be a very extensive task, considering that the solution could require an infinite amount of pages to explicate. Wheatley (2006) argues that the power in an organisation is created merely by the relationships within the company, and therefore the quality or potency of the power of an organisation is dependent on the quality of these relationships. The question could be asked whether one ought to attend more acutely to the relationships companies have, rather than brush them aside because of a misplaced sense of hegemony, and if there is not a moral responsibility companies have to attend to and mend these relationships.

This dissertation proposes five E's of sustainability: earnings, employee equity, social equity, economy, and environment. It is argued that the relationship a company has with these various stakeholders directly coincides with the ability of a company to ultimately become sustainable in the long-term. The DuPont system of analysis is utilised and expanded to create a new model. By applying the suggested modified model, which indicates the quality of the relationships companies has with its stakeholders (i.e. the five E's), a measure of sustainability can be obtained and employed to improve current business practises.

KEY WORDS:

Corporate Governance, DuPont Tool of Analysis, Sustainability.

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1 INTRODUCTION

Relationships are not limited to people, but also includes the relationship that people and an organisation have with its environment. Earlier research (Bateman & Zeithaml, 1993:193) demonstrated that the majority of the United States of America (U.S.A.) believes that it is essential for companies to consider its environment. It begs the question of what an organisations' ethical corporate responsibility is, and how important is it really to have sound relationships with stakeholders? Is there an argument to be made that having healthy relations with your environment is imperative for long-term sustainability? Kulshreshtha (2005:396) argues that even in an ideal market, companies could fail to engage in ethical social goals, such as environmental protection or providing voluntary support. Philanthropic responsibilities therefore become important and require a philosophical approach in order to determine what is *the right thing to do* when making business decisions if one wants to fundamentally accommodate your environment and in the process improve relationships as well as the organisation's profitability.

Corporate social responsibility is important and advocates of this philosophy argue that ethical corporate decision-making yields benefits in the long term (Balmer, Fukukawa & Gray, 2007; Bateman & Zeithaml, 1993:171; Gottlieb & Sanzgiri, 1996). There is not a single recognised definition or model for what corporate social responsibility exactly is (Clarkson, 1995:92). Consequently, organisations generally do not know how to develop, improve or maintain relationships with its environment. This research will aim to define arguments that will aid financial managers to better understand relationships within a corporate environment and see if better interaction with the environment and communities cannot contribute to longer lasting prosperity and sustainability.

1.1 PROBLEM STATEMENT

Organisations are engaged in a reciprocal relationship, first with its community and second, with its environment (Balmer *et al.*, 2007). The philosopher Aristotle argued that as a being or organism, one is indivisible from your surroundings and environment. He further states that surroundings are crucial for the make-up of a moral being. Aristotle wrote: *"Anyone who cannot form a community with others, or who does not need to because he is self-sufficient, is not part of a city-state – he is*

either a beast or a god" (Aristotle, 1998:4-5). The literature on *"the good citizen"* by Aristotle coincides with the theory that corporate identity is formed by the perception of a company's surroundings. The perception of a company is primarily formed by its financial statements and how stakeholders interpret these statements. It can also be argued that the long-run wellbeing of a company is extremely dependent on the health of its surroundings (i.e. economy, natural environment and social equity). However, are companies even concerned about this? And if they are, how do companies communicate its relationship with the environment to stakeholders through its financial statements?

There are perhaps no clear boundaries regarding the extent of responsibilities corporations have towards its surroundings (i.e. environment, society and economy) and to what extent companies incorporate it within its financial statements. The qualitative part of the study will revisit literature in the field in order to establish what the general school of thought is with regard to environmental connectedness, while the quantitative part will utilise all the financial statements of companies to determine the extent of the reciprocal relationship between corporations and its surrounding environment and various stakeholders.

The relationship a company has with its environment is significant to the survival of the organisation considering that companies and its environment develop concurrently (Wheatley, 2006:88). This research will aim to determine how actively companies are involved within its communities and if it cannot improve its social connectedness. This study will further investigate and discuss quantum physics, ecology and psychology in order to attempt to determine the importance of stakeholders and what role relationships play within a corporate environment. The question this study deems necessary to answer, is *how do contemporary financial statements reflect or represent earnings, employee equity, social participation, economic involvement, and environmental practices of companies?*

1.2 PURPOSE STATEMENT

The main purpose of this study is to investigate two South African companies' attitudes and relationship with their environment and to what extent do they communicate this to stakeholders by means of financial statements. Furthermore, it is important to evaluate the financial prosperity of the companies as sound financial

statements offer authority with regard to current business practices. However, sound financial results do not guarantee perpetual growth and prosperity. It is important to research and identify exactly how and to what extent the sample group is active within South Africa in order to determine if the companies are leading the way in environmental, communal, and economic consciousness as two corporate giants. The challenge thus lies in pinpointing the degree of social, environmental and economic responsibility corporations would have to comply with to be a good corporate citizen, not only in a practical sense, but also on philosophical and moral fundamentals. The enormity of modern corporations has created a situation where ethics are (to a large extent) decided by the organisations (Gottlieb & Sanzgiri, 1996). It is thus vital to determine if companies' financial statements reflect an ethical culture.

Leaders in business ethics in South Africa, argue that in order to be ethical, one always has to consider three factors: *self, other,* and *good* (Rossouw & van Vuuren, 2004:3). Therefore, one should not only contemplate what is morally acceptable for oneself, but also for others. Rossouw and van Vuuren further argue that the relationship between oneself and others needs to be good. If this is neglected, it cannot meet the criteria of being ethical. It thus forms a triangle (see Figure 1.1 below) where each element is imperative for ethical behaviour. Similarly, companies must not only consider themselves, but also others and ensure that these relationships are sound and healthy if they seek an ethical culture.

Figure 1.1: Ethical Triangle

Source: Adapted from Rossouw and van Vuuren (2004:3).

The past two decades have proved to be challenging for modern society. Questions have been raised regarding the impact of pollution on the environment and the significance of global warming. Economies are stressed and large corporations have been liquidated. South Africa faces many social dilemmas such as corruption, crime, and unequal distribution of wealth. The concept of environmental benign practices has entered into our collective consciousness and an urgency to change has been inscribed into our psyche. Sustainability becomes a vital issue within a turbulent economy. However, Wheatley (2006:19-21) suggests that disorder becomes a source of new order, and that growth only takes place under disequilibrium, and not balance. Companies are thus challenged to adapt and improve their current business practices in order to survive, grow, and strive toward sustainability. This study will aim to determine how companies integrate the economy, environment, earnings, employee- and social equity within its business model in order to attain greater longevity.

1.3 RESEARCH OBJECTIVES

The study will be guided by the following specific research objectives:

- To determine the key to long-term sustainability.
- To establish the significance of relationships companies have with various stakeholders.
- To analyse how companies disclose relationships with various stakeholders.
- To identify shortcomings within the sample groups' financial statements.
- To offer suggestions how companies could improve its corporate identity.

1.4 IMPORTANCE AND BENEFITS OF THE PROPOSED STUDY

The relationship between organisational behaviour and ethics is unclear (Gottlieb & Sanzgiri, 1996). There is clearly conflict with regard to what the role of corporations is within its surrounding communities (Bateman & Zeithaml, 1993:171-174). Two companies will be analysed to determine how these market leaders engage with the environment, economy and social equity. According to Jenkins (2001: 11, 25), the only method to validate if companies do actually meet particular ethical criterions, is

by sovereign verification and effective monitoring. As far as could be determined, there has not been research done on the significance of the role stakeholders play in the selected sample group.

This study could contribute to the understanding of what the role of a financial manager is within a business and how companies could improve its approach to environmental commerce dilemmas and scenarios. The companies will be assessed in order to determine if they engage in sound community development. The study's aim is to aid companies when they attempt to interpret social challenges and if sound environmental practices could contribute to the competitiveness of a company. If the study provides evidence that a company can still be profitable while engaging in environmental benign practices, it could aid financial managers in the business decision-making process. The next section will discuss the delimitations of the study. The delimitations will define the scope and boundaries of the research. It will describe the limitations the study will have to abide by. Only by establishing these permutations can one's research be effective and offer a meaningful contribution.

1.5 DELIMITATIONS AND ASSUMPTIONS

1.5.1 Delimitations

The delimitations describe the boundaries, characteristics and permutations of the proposed study. It offers insight into the constraints the study will follow.

1.5.1.1 Geographical Delimitations

The study will only focus on South African companies and the impact they have within South African borders.

1.5.1.2 Sector Delimitations

The first and most distinct delimitation of this study is the fact that it concerns itself with two different South African companies from different sectors of the economy who are in the current Johannesburg Stock Exchange (JSE) Top 40 companies. The sectors that have been selected are:

(a) Telecommunication sector; and

(b) Oil and Gases sector.

1.5.1.3 Time Horizon

The study will utilise the financial end-year results from 2007 to 2011. The time frame has been selected to provide the most recent financial results in order to benefit from the most relevant data available. However, there will be no time constraint placed on the literature to be reviewed.

1.5.1.4 Sample Group

The two companies selected were based on size, market share, and competitiveness within their sector. However, there are many companies who meet such criteria; therefore, it was decided to select two of the most sought after employers in South Africa. According to Magnet Communications (2011:10) in South Africa, MTN Group Limited and Sasol Limited are ranked 19th and 4th, respectively. Consequently the selected sample is:

(a) MTN Group Limited (hereafter MTN); and

(b) Sasol Limited (hereafter Sasol).

The first company is MTN, who is currently one of the main leaders within the Telecommunication sector in South Africa. Second, is Sasol who is also one of the leaders in petroleum in South Africa and listed under the oil and gases sector of the Johannesburg Stock Exchange (JSE). It was also decided to select companies from different industries to determine if there might be similarities in behaviour with regard to the different relationships organisations have with their surroundings. Only two companies were selected to keep the study as detailed as possible.

1.5.2 Assumptions

Leedy and Ormrod (2005:5) consider an assumption as a *"condition that is taken for granted, without which the research project would be pointless."* The proposed research is subject to a few basic assumptions. The study assumes that:

(a) All data and financial statements concerning the companies in question are accurate and maintain their integrity;

(b) A study of financial statements provides *significant* data that could be applied to the research.

1.6 RESEARCH DESIGN AND METHODS

1.6.1 Description of Inquiry Strategy and Broad Research Design

This study will attempt to identify what kind of relationship companies in South Africa have with its environment and different stakeholders. The general descriptor that will be used is textual (i.e. qualitative data) and the study of financial statements (i.e. quantitative data). This would be the most appropriate approach considering that the study is partly conceptual and relies on qualitative and quantitative data to argue findings. Each company's financial statements are presented differently. By utilising data obtained from financial statements of South African companies, the research will aim to explore the focus companies have, in terms of different initiatives and data disclosure, and offer recommendations of how it can be improved.

1.6.2 Data Collection

This study will be divided into two parts. First, various literature will be reviewed with a firm focus on sustainability. This is the abstract and most conceptual part of the research. In the second part of the research, greater attention will be given to the sample companies. The method of data collection would be by means of critically analysing the financial statements of the selected companies. Various components of the financial statements will be analysed to identify key figures which would aid the research in order to determine the companies' communal involvement and effectiveness of their initiatives. It is critical that the integrity of the financial data and calculations ought to be honoured in order to provide meaningful and significant discoveries. Furthermore, much quantitative data will be obtained from the McGregor BFA database. This is to minimise distortions in comparative figures.

1.6.3 Research Method

This research will be done by means of a *content analysis*. A content analysis typically inspects a body of knowledge in great detail in search of biases, themes, and patterns (Leedy & Ormrod, 2010:144-145). Human communication is usually the point of focus in a content analysis study. Below is a list of the characteristics of the study:

(a) The main body of material that will be used is the financial statements of each company and the transcriptions of speeches delivered by the top management of the companies. In order to determine how companies reflect the social participation, economic involvement, and environmental practices within its financial statements, the most recent (i.e. 2011) published statements will be utilised.

(b) Five main characteristics will be evaluated. They are:

- *Social participation.* The financial statements will be thoroughly examined in order to determine if the selected companies are involved in local community development projects and initiatives.

- *Economic involvement.* This element focuses on prosperity, jobs and wealth creation. It will be determined if the companies are deliberately engaging in wealth and job creation opportunities.

- *Environmental benign practices.* This component of the research will examine the impact the companies have on the natural environment and if they are contesting its negative effects. An example of this would be investing large amounts of capital in finding alternative renewable resources to fuel operations.

- *Employee equity.* This section will determine the significance of the relationship employees have with a company.

- *Financial prosperity (earnings).* The final part of the study will determine if the companies in question are delivering sound financial results, regardless of its economic, social, and environmental involvement. This will be done by means of utilising, but also modifying, the DuPont system of analysis.

(c) The indicators that will be examined through the study are different for each element. They are listed below:

- Social participation focuses on how companies are involved in its surrounding communities. Are they involved in volunteering work? Do they offer donations or education to underprivileged communities?

- Economic involvement focuses on how the company generates wealth within the economy. It is necessary to determine if the companies indicate how many jobs they create and supply the economy with and if they are willing to engage in developing policies and regulatory requirements with other sectors and governing bodies.

- Environmental benign practices will focus on the impact the companies have on its surrounding environment. The carbon emissions of each company will be determined and evaluated. It is necessary to establish if the companies are engaging in satisfactory environmental practices, and if not, how they plan to rectify the situation.

- The financial prosperity of each company will be evaluated by means of the DuPont system of analysis. The financial prosperity of the companies will be determined by focusing on financial ratios for the past five years (i.e. 2007 – 2011). The financial ratios that will be inspected will be the net profit margin, total asset turnover, return on total assets, financial leverage multiplier, and the return on equity. The return on equity will receive greatest attention considering that it reflects al the before mentioned ratios. Furthermore, attention will be given to the Cash Conversion Cycle (CCC), Economic Value Added (EVA™), EVA Momentum, Sustainable Growth Model, and the intrinsic value of the share.

- In order to determine the employee equity of the companies, the amount of employees is very important. Determining the sales per employee, cost per employee and net cash flow per employee will be the indicators utilised in this section.

1.7 DEFINITION OF KEY TERMS

There are various key terms used throughout this study that will be used. Below is a list of each key term followed by an applicable definition.

Barnsley Fern: When a formula is fed onto itself, it creates an exponential amount of patterns that creates a similar larger structure (Wheatley, 2006:127).

Cash Conversion Cycle (CCC): The Cash Conversion Cycle is used to determine the time it takes a company to convert cash outflows, to cash inflows based on the company's usual flow of operations (Richards & Laughlin, 1980:34). It thus illustrates the time period a company has invested money in working capital (Moss & Stine, 1993:25).

Categorical Imperative: *"Act only according to that maxim whereby you can, at the same time, will that it should become a universal law"* (Kant, 1993:30). This means that whenever a person is considering an act, that person must consider if what they are about to do would be considered generally acceptable (Verboven, 2009:19-20). It is thus a moral guide to test if a contemplated action would be universally ethically acceptable.

Chaos Game: Wheatley (2006) explains that the chaos game is when a mathematical function is repeated onto itself to create a larger organised pattern.

Corporate Citizenship: See *Corporate Social Responsibility.*

Corporate Social Responsibility: It is basically the ability of corporations to distinguish between right and wrong in order be a good corporate citizen. Furthermore, it is the action of identifying and addressing stakeholder groups within the community that is affected by the actions of the corporation by integrating sound social principles (Smith & Perks, 2010:71-72). A further explanation is when companies voluntarily engage with communities in order to improve them through social projects and initiatives, by means of utilising company resources (Kotler & Lee, 2005:3).

Corporate Identity: The corporate identity of a company is *"…the reality and uniqueness of the organization, which clearly expands the area of potential academic inquiry and theory development"* (Balmer *et al.*, 2007).

Dissipative Structures: It simply states that the primary condition for a system to grow is disequilibrium (Wheatley, 2006:95).

Dividend Discount Model (DDM): The DDM is used to evaluate the appeal of the stock market, or a single stock, by determining return estimates (Farrell, 1985:16).

Economic Value Added (EVA™): EVA™ is a method used to determine the value creation of a company by means of subtracting the cost of capital from the after tax profits of a company (Mouritsen, 1998:463). It is thus a performance measure which is used to match the shareholders interest and that of the managers of a company (Lovata & Costigan, 2002:215).

Economic Value Added Momentum: The EVA Momentum is a performance measure that is calculated by determining the change in economic profit over a specific time period, which is then divided by the amount of sales in the preceding period (Stewart, 2009:75).

Fischer-Tropsch Synthesis: *"…Fischer-Tropsch synthesis (FTS) is the key technology for converting synthesis gas (mixture of CO and H_2) to liquid fuels"* (Bayat, Rahimpour & Moghtaderi, 2011:555).

Golden Rule: The Golden Rule simply states that one ought to treat others in the same way you expect others to treat oneself.

Inattentional Blindness: It can be defined as a phenomenon that *occurs "when observers are focused on some other object or event, they often fail to notice salient and distinctive objects"* (Simons, 2000:147).

Shareholders: Shareholders is an institution or person who owns a portion of a company, by means of legally owning shares in the company.

Shareholder Model: The shareholder model states that the sole purpose of a company is to maximise profits and satisfy the needs of the shareholders (Verboven, 2009:25-26).

Stakeholders: According to Smith and Perks (2010:76), stakeholders are *"…groups or individuals who have an interest in the actions of an organisation and the ability to influence it."*

Sustainable Society: *"A sustainable society is one that can fulfil its needs without diminishing the chances of future generations"* (Brown, 1982 as referenced by Capra, 2007:10).

Triple Bottom-line Reporting: Triple bottom-line reporting attempts to report on the three components with regards to sustainability. They are: environmental, social and economic (Smith and Perks, 2010:73).

Utilitarianism: Utilitarianism simply states that an action can be adjudged as fair if the outcome benefits the majority of all parties involved.

Weighted Average Cost of Capital (WACC): WACC is the after tax weighted average cost of a company's equity and debt (Bodie, Kane & Marcus, 2009:614).

Table 1.1 below offers a list of abbreviations used throughout this study.

Table 1.1: Abbreviations used in this document

Abbreviation	Meaning
AIDS	Acquired Immunodeficiency Syndrome
CCC	Cash Conversion Cycle
CEO	Chief Executive Officer
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COGS	Cost of Goods Sold
COP	Conference of the Parties
CSI	Corporate Social Investment
CSR	Corporate Social Responsibility
DDM	Dividend Discount Model
ETI	External-to-Internal
EVA™	Economic Value Added
GHG	Greenhouse Gas
GIZ	Gesellschaft für Internationale Zusammenarbeit
$GtCO_2e$	Gigaton Carbon Dioxide Equivalent
HIV	Human Immunodeficiency Virus
ICT	Information and Communications Technologies
IWF	Internet Watch Foundation
ITE	Internal-to-External
JSE	Johannesburg Stock Exchange
MMS	Multimedia Messaging Service

Abbreviation	Meaning
$MtCO_2e$	Metric Ton Carbon Dioxide Equivalent
RFR	Risk-free Rate
ROE	Return on Equity
SIM	Subscriber Identity Module
SMS	Short Messaging Service
USA	United States of America
WACC	Weighted Average Cost of Capital
WAP	Wireless Application Protocol

2 LITERATURE REVIEW

2.1 INTRODUCTION

This section of the dissertation will discuss the reviewed literature. Works of various disciplines was consulted in order to fully understand the theoretical arguments of the study. The study will, however, stress the organisational and philosophical aspects of the argument. First, the significance of information will be discussed followed by investigating the meaning of relationships and the role leadership should play when attending to these relationships. This will be followed by greater in-depth research into the importance relationships play within any entity. The King III report will be discussed and state general guidelines to which companies ought to abide by, in a modern economy. Finally, systems theory will be debated followed by the discussion into what sustainability means to companies.

2.1.1 The Importance of Information

When one is confronted with data, old or new, it can only be classified as information when it contributes to something new (i.e. it *informs* you). If change is not possible from new data observed, it is not information but merely meaningless data. Information is dependent on the effectiveness of the observer's intellectual capital. It is argued that the entire universe is comprised of (relevant) information, and that the challenge is for us as individuals, companies and organisations, to recognise the information by creating a purpose for it and applying it to ourselves and our environment for greater wellbeing (Wheatley, 2006).

In an organisational environment, management ought to identify the ever-changing information around them and act in the most purposeful way possible. Information changes daily and ensures that a company can never be safe or feel comfortable, and thus be in equilibrium. The worst thing managers of a company can do is to assume the position of the company (financial or otherwise) is sound and to ignore any new information, if it is market related or otherwise. If financial managers do not attempt to interpret and act on new information, the company will not be sustainable in the long term. The role of the manager is not to achieve perfection, but rather to continually strive towards it. For when a company believes it has achieved its' equilibrium, the company is ultimately doomed. Ilya Prigogine has developed what

he calls *dissipative structures* (Wheatley, 2006:79). It simply states that the primary condition for a system to grow is disequilibrium. In essence it becomes a journey without a destination of finding order in a chaotic world. Information is thus crucial for the construction of new order, while order in essence, is created by a web of relationships (Wheatley, 2006:95).

The theoretical physicist Werner Heisenberg described modern physics as one that is not divided into different objects, but rather different connections (as referenced by Wheatley, 2006:72-73). He further states that the kinds or types of connections are significant. Organisations should be managed similarly by creating and maintaining a healthy set of connections or interactions. Organisations should further halt the obsession of finding the perfect business model for its organisation and rather embrace change, turbulence and disequilibrium, however odd it may seem. The physical chemist and Nobel Laureate, Ilya Prigogine states in his *dissipative structures theory* that disequilibrium is imperative for a system's growth (Wheatley, 2006:79). When an organisation knows what it wants to accomplish and how it wants to achieve it, only then can it react positively to changes in its environment that contribute to a shift within disequilibrium.

This study argues that there are various elements that are imperative within an organisation that contributes to its development. These are the identity of the organisation, the relationships with the system and lastly the information the organisation utilises. These elements contribute to an organisations' ability to create value for stakeholders.

2.1.2 Understanding Relationships

There is often a lack of appreciation when it comes to the understanding companies have of its environment. A company ought to first identify what its strengths and goals are, and only then can they respond astutely to its ever changing environment (Wheatley, 2006:86). When a company acts on changes in its environment (which is inevitable), it also affects the environment in return. The relationship can be viewed as a co-dependent partnership where both (i.e. organisation and the environment) are role players in a game and thus engage in *co-evolution*. The organisational theorist, William Starbuck, believed that the co-evolution of organisations and its

environment is moving toward a more sound and accommodating space where both benefit (Wheatley, 2006:88).

As Wheatley (2006:39) states "*Power in organizations is the capacity generated by relationships. It is an energy that comes into existence through relationships.*" It is thus evident that the quality of these relationships is crucial for the overall success of the company. Mitchell, Agle and Wood (1997:867) argue that the relationship a company has with its stakeholders is undeniably critical. It is therefore necessary to caringly attend to these relationships. Any entity can be reduced to its parts. If the parts of a company are unhealthy, the company as a whole will not be able to function efficiently. People find themselves in a fractal world and environment, and if they choose to disregard the qualitative factors and solely focus on the quantitative elements, they will only doom themselves to frustration (Wheatley, 2006:125). It thus may become imperative to consider stakeholders within a business model and consider what role it plays in an organisational environment.

If each individual in an organisation engages in ethical relational behaviour, it could ultimately contribute to the success of the organisation as a whole. It must be remembered that human beings are not mechanical entities and ought not to be utilised as such. People possess qualities such as love, hate, fear, and eagerness that a machine does not. It is thus crucial to treat people as human beings and not feed them a set of codes that they should follow to deliver a specific output. People are fundamentally flawed, and this is also true on an organisational level. It is therefore essential to consider people when making business decisions or else the organisation will suffer a massive backlash because human beings have been excluded from the process (Wheatley, 2006). This may underline the importance of employees within the company and how the success of a company is dependent on its employees.

Another field of science where the significance of relationships can be emphasised, is in quantum physics. In fundamental quantum physics, electrons orbit a densely filled nucleus of an atom. The negative electrons are attracted to the positive protons in the nucleus. There is an invisible and intangible relationship between the nucleus and the electrons as the electrons are continuously attracted by an electromagnetic force which contributes to the existence of the atom. The collection of atoms forms

further molecules. The relationship between the electrons and nucleus is imperative to the creation of a larger molecule (Wheatley, 2006). Similarly organisations have an intangible relationship with its environment and maintaining a healthy relationship is imperative to existence. In modern organisations, companies do not know how to build and maintain relationships in an organisational and environmental sense (Wheatley, 2006). There may be a research gap regarding the approach financial managers should follow if they wish to engage with their environment and what level of connectedness is acceptable. This study will attempt to explore this phenomenon in order to determine if the research gap can be, at least partly filled.

2.1.3 The Role of Leadership by Creating Meaning within an Organisation

Traditionally companies have a hierarchical management structure. It is logical that it is necessary for somebody to take control and make difficult decisions. However, this system has become a victim for abuse. Chief Executive Officers (CEO's) of organisations seldom discover the true potential of their employees due to a communication gap and dubious management styles. If managers connect with their workers, the organisation as a whole could benefit and it fundamentally improves the business. There is often a gap or space between workers and managers which leads to confusion, frustration and even redundancies. Management should thus fill this gap with comprehensive and positive matter. As Wheatley (2006:55) states: *"I am positive that in each (store) where customers felt welcome, there was a leader who, in word and deed, filled space with clear and consistent messages about how customers were to be served."* This may emphasise the importance of having sound relationships with the employees of a company in order to promote employee equity.

It is inherent in human nature to search for meaning in their work (Pannenberg, 1970). If we cannot identify the purpose of an act, we will have difficulties completing the task full-heartedly. If managers invest time into creating belief and meaning within their companies, workers would not have to be told what to do or be ordered around. They will engage in any necessary activity which will contribute to the completion of a task and thus satisfy *meaning*. Such an organisation would not need bosses, but only leaders who guide the company in a direction rather than force changes (Wheatley, 2006:166-181). It may therefore be essential that employees are

always considered within the business model seeing that they are perceived as key stakeholders.

If managers succeed in creating a culture within the company where everybody understands the meaning of their work, they will tirelessly produce fruitful and constructive output which will contribute to a pattern of ethical behaviour. It is therefore essential for leaders to have substantial emotional, intellectual and social capabilities in order to be effective and cope with a complex organisational environment (Schneider, 2002:217). There is a similar theory in quantum physics called the *chaos game.* In the chaos game, a fern is created by continuously repeating the same function and pattern and it consequently creates a large fern. If each individual in an organisation acts similarly, the company as a whole will portray a healthy picture (Wheatley, 2006:127).

2.2 CORPORATE SOCIAL IDENTITY AND RESPONSIBILITY

Everything in the universe has an identity that is created by means of its characteristics and the perceptions of other external observers that are moulded by those specific character qualities. Corporations are no exception to the rule with each company earning a tag or identity. Balmer *et al.* (2007:10), states that it is important to remember that one's identity is not only formed by oneself, but also by the perceptions of others. The mission and vision statements of a company, or the codes of conduct they have implemented, is not what creates a corporate identity. However, it may offer a significant contribution to the holistic perception of the entity. The corporate identity may be formed by what stakeholders perceive the company to be and act.

A second aspect that is vital to the corporate identity is the ethical responsibilities of companies. The ethical corporate identity concerns itself with the philanthropic responsibilities that are based on what benefits the community as a whole, and thus encourages companies to contribute in increasing the welfare of communities (Balmer *et al.*, 2007:10). Some companies, known as *proactive* companies, believe that there are certain values and morals that should be upheld regardless of any economic consequences (Bateman & Zeithaml, 1993:174). It is thus apparent that there is a critical relationship between a corporation and its environment, or rather stakeholders.

A problem with ethical corporate identity and responsibility is that everybody is not always in accord regarding the ethical responsibilities companies face. Milton Friedman, who won the Nobel Prize for economics, believes that the main goal of managers is to maximise the bottom line (Friedman, 1970; Verboven, 2009:25). This school of thought argues that the interests of the shareholders of the company should be preferred and that it is the primary goal of corporations to satisfy their expectations (Bateman & Zeithaml, 1993:171-172). Organisations in a capitalistic environment have become so powerful that they influence corporate ethics and the definition thereof (Gottlieb & Sanzgiri, 1996:1276). Therefore each company treats stakeholders differently. If a company is in search for a sound corporate identity, it should broaden its business model to accommodate a greater amount of stakeholders.

2.3 FROM A DIFFERENT PERSPECTIVE

In Margaret Wheatley's book '*Leadership and the New Science: Discovering Order in a Chaotic World',* she discusses various interesting concepts concerning natural sciences that can be applied to modern organisations. She has delivered various insights regarding Newtonian laws and how it is still applicable in an organisational and environmental sense. She identifies the significance of relationships within a corporate environment and states that the power that is generated within a company is due to the strength of its relationships. It is thus evident that it is vital to attend to these relationships as dearly as possible in order to become prosperous.

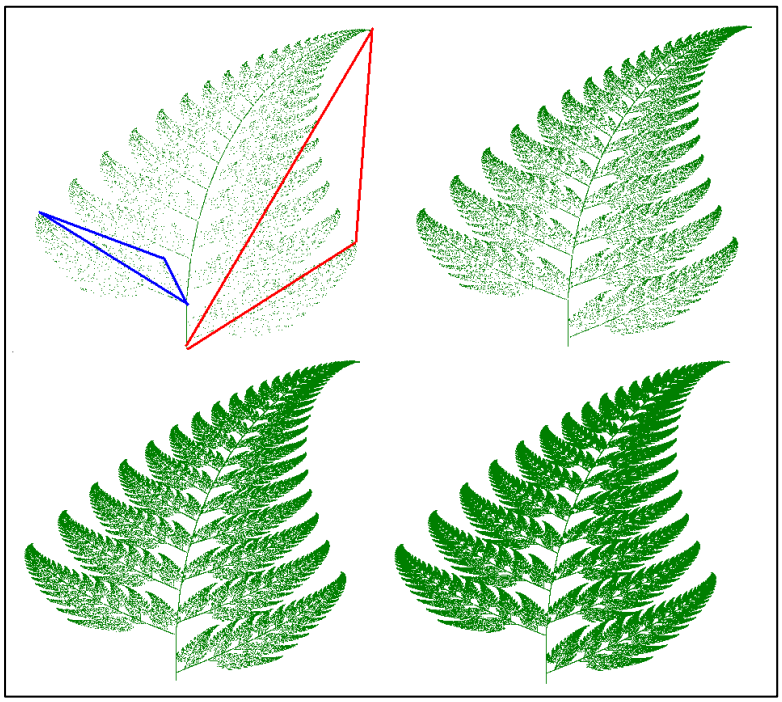
When a company does not attend to the relationships it has with its employees, community and natural environment, it is possible that the company will not be economically sustainable. The entire organisation can be thought of as a spider's web. The web represents the internal and external relationships a company has. If a certain part of the web is weak, the other links fixed to it will support it. Each entity supports each other inside and outside of the company. When the entire company maintains healthy relationships, the company as a whole will flourish as a result. Imagine four jazz musicians: a guitarist, a bassist, a drummer, and a pianist. When each of them plays alone, it is merely a partial success with only a few sounds to be heard. However, when all of the musicians play in accord, they create something beautiful, what we call music. Only by working together can they achieve such

greatness. The relationship musicians have with each other when performing a masterpiece, is similar to the relationship a company has to have with its surroundings when it strives for organisational excellence.

When a company maintains a web of good and sound relationships, the company will create *meaning* within each personal life involved. Leaders within the company should be able to create an environment where everybody (i.e. employees and customers) feel motivated and happy. Wheatley (2006:55-56) states that she has visited various retail stores, and that she could feel a certain atmosphere within some of the stores that made her feel welcome. She argues that she is certain that a strong leader was behind each of those stores who invested time and energy in the company to create belief and meaning for the employees and that it had filtered down to the customer. When leaders in a company invest time and energy for all the workers in an organisation, the company will start to function by itself. Employees should think globally and act locally. When each worker consistently produces pure and fresh output, the company will start to create a healthy trend.

The British mathematician, Michael Barnsley, shows in his work known as the Barnsley Fern (see Figure 2.1), how beautiful a system can be when a formula or pattern is repeated onto itself (Wheatley, 2006:127-129). In Figure 2.1, the blue triangle transforms to the red triangle as a formula is fed onto itself, and it creates an exponential amount of patterns that creates a similar larger structure. Similarly, each small act of healthy output, will contribute to a bigger system of overall healthy output in an organisation. As the much respected philosopher Aristotle (1998) said: *"We are what we repeatedly do. Excellence, then, is not an act, but a habit."* Similarly, if companies create a culture where each stakeholder is considered in the business process, each small generous act will ultimately lead to a healthier organisation when viewed in its entirety.

Figure 2.1: Barnsley Fern



Source: DSP-user (2010).

The co-evolution between an organisation and its environment (or stakeholders) is so vital for the survival of both. The organisational theorist William Starbuck argued that organisations, partnered by its respective environment, are moving towards a better fitness for each other (Wheatley, 2006:88). Do MTN and Sasol develop with their environment? Are they returning an equal amount of gratitude to that which nature supplies them with? It will offer great value if the relationship these companies have with its stakeholders can be better understood. A comparison should be drawn between the corporate liability these companies bestow on the environment, and by what means are they returning the favour. The companies should be separately evaluated in order to see if they are indeed in a partnership with its stakeholders and not only dictating the terms of the transaction.

This brings the discussion to ethics. Ethics, sometimes called *moral philosophy,* can broadly be defined as the science of morals and how moral principles should be applied in order to do the *right* thing. Verboven (2009:19) discusses in his book entitled *"Tussen Moraal en Winstmaximalisering",* that one should make a distinction between four different types of ethics. First, is *normative ethics* which focuses on the result of an action, and compliance with moral rules. An example of such normative

ethics would be the Ten Commandments in The Bible. Second, is *applied ethics*, wherein business ethics lie, is the application of normative ethical theories (i.e. Immanuel Kants' *utilitarianism*), on everyday life. Third, *descriptive ethics* concerns itself with specific human insights and views on morals (such as etiquette). Last, *meta-ethics* is the study of linguistic judgments.

When one further investigates the meaning of ethics, it is preordained that you will come across the *Golden Rule* (Verboven, 2009:19). The Golden Rule states that one should treat others in the same way you expect others to treat oneself. This definition forms the corner stone of Christianity and is complemented in the works of philosophers such as Aristotle and Isocrates. It is thus reasonable to suggest this as the common or universal definition of ethics. A further investigation into the understanding of ethics, leads to the study of *deontological ethics.* Deontological ethics complements the principles of the Golden Rule. It was advocated or argued by the German philosopher, Immanuel Kant. Kant introduced the *categorical imperative* of ethics (Allen, 1985). He believed that one's morality can be reduced to one definitive imperative. Such hypothetical imperative would be for instance: if you wish to quench your thirst, you should have something to drink. It is thus an absolute moral obligation that a person is binding in all circumstances without being subject to the purpose of an action. Simply put, it is a moral or ethical guide for determining if a contemplated action is ethically acceptable.

This crucial vocal point in ethics should be applied to modern commerce. This study suggests that companies ought not to utilise its stakeholders at the expense of its desired outcome. Companies (i.e. people) must not sacrifice another for a higher goal, but rather treat everyone as an end in itself (Verboven, 2009:19-20). Do companies stay true to the principle of the Golden Rule? Do they treat their stakeholders the same way they expect the stakeholder ought to treat them? However, it is extremely difficult to apply this in practise considering that it can become impossible to make decisions. Organisations face a great amount of diverse and unique challenges on a daily basis and to apply deontological ethics on every decision is simply not viable. The responsibility thus rest on companies to do the best they can under the circumstances and determine which decisions would benefit most parties involved.

Identifying an ideal outcome can prove difficult or impossible. This idea is championed by the theory of *utilitarianism* in ethical philosophy (Verboven, 2009:20-22). Utilitarianism simply states that an action can be adjudged as fair if the outcome benefits the majority of all parties involved. It is thus a moral calculation where one has to weigh up the *pros* and *contras* of a situation before a decision can be made. However, this is not easy within an organisational environment, especially if a specific outcome is unpredictable. Of course one could argue that companies always make decisions that would benefit most shareholders, however, it begs the question how many companies consider other stakeholders in such decisions. This raises the issue of corporate social responsibility (CSR). Traditionally, companies did not disclose its corporate social investment initiatives due to a fear of communal scrutiny of it being seen only as an act of publicity (Xulu & Steyn, 2001:72). Corporate social responsibility is defined as the voluntary engagement within the community in order to improve it by utilising corporate resources (Kotler & Lee, 2005:3). It can also be seen as forfeiting a certain amount of a company's profits for a developmental social cause. This is the way a great amount of companies act in order to accommodate its stakeholders, however, it is uncertain if they are doing enough to promote stakeholder engagement.

The identity of a company is a fundamental part of the organisation. Balmer *et al.* (2007:8) suggest that corporate identity is more than the image of the company and rather the relationship an organisation has within its community. It is thus necessary for managers of companies to practice more reflexivity within their organisations. There are four distinct elements of corporate identity, namely: the *actual, communicated, desired,* and *ideal* identity (Balmer *et al*., 2007:8). The *actual* identity is the image that is perceived by the outside world. It is thus a summary of philosophical, organisational and structural elements. The *communicated* element of corporate identity is the identity an organisation helps to create by means of communication or disclosure to its stakeholders. This is done by means of the media, word of mouth and its financial statements. The *desired* identity is the realistic goal management want their organisations' identity to be. The *ideal* identity is the identity external analysts want or believe the organisation should have. It is thus the ability of a company to cope with outside pressure and other internal and external

factors. In the next chapter it will be investigated how the corporate identity of the sample group is formed and what do they do to promote their corporate image.

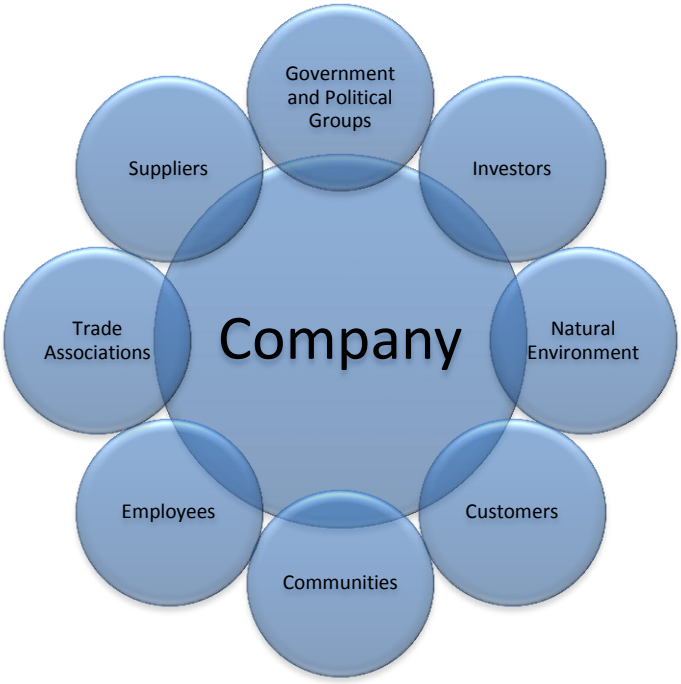
The corporate identity becomes an ethical issue in which managers have to ask difficult questions. There are four questions corporations should ask themselves. They are: (1) Who are we? (2) How do we communicate our identity? (3) How is our identity conceived by others? (4) How are we to understand identity as a holistic phenomenon (Balmer *et al.*, 2007:8-9)? These are questions that cannot be easily answered due to the lack of understanding when it comes to ethical corporate identity. An organisation should follow *external-to-internal (ETI)* thinking, but act *internal-to-external (ITE).* When a company manages to understand identity (the fourth question asked), only then can they start the process of creating an identity. If an organisation can determine how it would like its company to be perceived by the outside world (i.e. question number 3), only then can it act internally. It is therefore necessary for management to decide how they would like the company to be perceived by its stakeholders and thus the type of relationship they want with the surrounding community. A company may only start changing or improving its identity once it understands how the external stakeholders perceive the organisation to be. That will be determined in the third chapter.

Organisations ought to ask the critical question of how it *is* communicating its identity and how it *should* communicate its identity. This is when managers must follow an ITE approach where they decide how they could positively influence the company at a fundamental level. That is why it is so crucial for management to understand what the outside world really thinks of the organisation and how they can act internally to influence these perceptions on an ethical basis which will benefit the company and its stakeholders.

Organisations thus ought to implement and maintain a philanthropy etymologically company ethos. Communities and external parties could benefit from an organisation's business activities. Companies thus have a social ethical responsibility to preserve its natural environment. However, organisations must be cautious to avoid a paternalistic relationship with its environment which can be simplified to conventional management strategies. An active relationship could be maintained where all parties will benefit. This school of thought is similar to Freeman

and McVea's *stakeholder's theory* where he states that the stakeholders are *"… any group or individual who is affected by or can affect the achievement of an organization's objectives"* (Freeman & McVea, 2001:[4]). The modern stakeholder model does not hold preferences in terms of the importance of the different stakeholder groups (Phillips & Freeman, 2003:28). However, Lantos (2001:626) challenges this view and suggests that employees and customers are the most important stakeholders. It will thus be determined, at least to a certain extent, how contemporary financial statements reflect these stakeholder groups. Figure 2.2 below indicates different stakeholders companies are subject to.

Figure 2.2: The Stakeholder Model



Source: Adapted from Donaldson and Preston (1995:69).

The corporate identity is not merely the mission and vision statement on the website of a company. It is also, and more importantly, the perception that the outside world has of the company. Some companies, often in the alcohol and tobacco industry, commonly carry negative perceptions by stakeholders seeing that it is considered as entities who offer harmful products to people. The corporate identity of a company must be understood as a great network of stakeholders and considered in a larger social context (Buchholz & Rosenthal, 2005:139). Furthermore, the state of the economy is dependent on the state of our natural environment (Balmer *et al.,*

2007:11). Companies are unsure of what its corporate identity ought to be and often do not realise to what extent its responsibilities lie. Balmer *et al.* (2007:13) identified ethical corporate identity as the openness, responsiveness, critical reflexivity and social connectedness. This study will aim to determine how companies strive for and maintain ethical corporate identity.

Milton Friedman (1912 – 2006) identified the theory of the *shareholder model.* The shareholder model states that the sole purpose of a company is to maximise profits and to satisfy the needs of the shareholders (Verboven, 2009:25-26). According to Friedman, if a company pursues social development initiatives, it is immoral considering that the company's capital in principle belongs to the shareholders. However, it is important to note that Friedman was not against philanthropy, social and community development, but he believed that it is hypocritical when a company does this purely on the basis of altruism (Verboven, 2009:25-26).

If one applies Kants' Categorical Imperative on the principles of the shareholder model, some thought-provoking ethical questions arise (Verboven, 2009:19-20). If satisfying shareholders is the sole imperative, does the means justify the end? If a company follows a pure shareholder model, they would probably not be concerned about the surrounding environment during the process of profit realisation. It thus becomes a race of the survival of the fittest at the expense of other parties (including the environment). Some companies would gladly make unscrupulous decisions and in the process harm the stakeholders. When companies focus on a sole objective, it often misses value creation opportunities around them. This phenomenon is also inherent within people. It is therefore necessary to determine how corporate giants in the modern economy act and if they act in such a way that the ends justify the means, or do they consider a greater amount of stakeholders?

In psychology there is a human characteristic known as *attentional capture.* Attentional capture is categorised into two categories; *implicit attentional capture* and *explicit attentional capture*. Implicit attentional capture is defined as an occurrence *"when a salient and unattended stimulus draws attention, leading to awareness of its presence"* (Simons, 2000:147). On the other hand, explicit attentional capture, also known as *inattentional blindness*, can be defined as a phenomenon that occurs *"when observers are focused on some other object or event, they often fail to notice*

salient and distinctive objects" (Simons, 2000:147). It is important to note that inattentional blindness is linked to the perception of the beholder. Simons (2000:150) points out that *"The implicit paradigms explore how well observers can ignore something they expect but know to be irrelevant, whereas in explicit attentional capture, the critical question is how likely subjects are to notice something that is potentially relevant, but that they do not expect."* This coincides with the argument that companies often make the same mistakes considering that a company is essentially people.

When a stimulus is expected to appear, the possibility that attention is paid to that stimulus cannot be ignored. However, if a stimulus is unexpected, this possibility is less likely. A stimulus that is perceived to be irrelevant to a primary task will be ignored as one recognises that it will not improve performance. Similarly, in companies managers focus on a key objective(s) and subconsciously often fail to recognise other external factors that may have contributed to the success of the organisation. This failure to identify potential value creation prospects is partly due to their inattentional blindness. One may pay attention to a stimulus, consciously recognise it, but forget it by the time one is questioned about it.

Inattentional blindness is also believed to be caused by the failure to encode what is perceived. This is known as *inattentional agnosia*. Thus, one could observe a stimulus but will not be able to recall it as it was not fully encoded. In practise people believe that they will observe important information (Simons, 2000:154). This, however, is not necessarily true due to the *metacognitive error* inherent in the human brain. The metacognitive error occurs when one does not realise the extent to which one is blind to unattended and unexpected stimuli, as one believes that important occurrences will automatically draw attention away from a primary task (Simons, 2000:154; Levin, Momen & Drivdahl, 2000:408).

It is argued that this inherent psychological human error is exemplified in practise. As mentioned earlier a company is comprised of humans, and humans are prone to make mistakes. When managements' sole focus is to satisfy shareholders, a great amount could be lost to the company. Managers, and the organisation, could benefit if they focus on a greater amount of goals and objectives and aim to satisfy various stakeholders. Deliberate strategies should be implemented to minimise a company's

collective attentional blindness. This exemplifies the need to determine how financial statements reflect shortcomings with regards to information companies failed to encode.

2.4 THE KING III REPORT

The King III report is a vital element of this study, because it provides guidelines which provide significant insights into the operations of a company. The King III report ought to be seen in context of the Companies Act which has been effective since 2010 (SAICA, 2009). The King Committee, chaired by Mervyn King, compiled this report without receiving any form of remuneration, and finally there is an ever growing focus on the need for comprehensive reporting (SAICA, 2009:1). The King III report focuses on three areas. These areas are *leadership, sustainability* and *corporate citizenship*. The report places a great deal of emphasis on social change and environmental awareness.

The sustainability section of the report is related to business ethics and the role ethics play within the community. Natural environmental issues are becoming an ever increasing topic of debate. In South Africa, the Minister of Environmental Affairs reports that greenhouse gas (or CO_2) emissions of the country will quadruple by the year 2050. This could contribute to South Africa becoming a pariah nation in the world (SAICA, 2009:3). According to Muller (2011:24-25), the King III report demands that companies should disclose how they have affected the economic life of communities by means of integrating reporting.

The success of modern companies depends heavily on the political system, global economy, social environment and finally natural environment. One of the first things the King III report addresses is the need for companies to utilise suppliers from previously disadvantaged backgrounds (SAICA, 2009). South Africa cannot afford to endanger the survival of local suppliers by replacing them with importers. The economy is in need of stimulation and the responsibility partly rests on South African organisations. They should capitalise on the abundance of untapped labour in the country. Da Piedade and Thomas (2006:67) argue that the success of an organisation equally depends on capital and production facilities, as it depends on the relationship with its suppliers.

The King III report promotes ethical conduct and states that the board of directors should ensure that integrity permeates in all segments of the organisation. A further important point (stated in Principle 1.3 of the report) is that ethical conduct should be evident in the relationship companies have with its environment (SAICA, 2009:6). Furthermore, sound ethical structures and standards should be followed in all areas of a company. It is necessary to see if the sample companies consist of boards that have implemented, or are planning to implement, structures which promote such behaviour. Boards are encouraged to employ a CEO who will establish a sound ethical climate within the company. The communicated ethos of the respective companies will be discussed later in the study; therefore the detail will be deferred until then.

The King III report places much emphasis on corporate citizenship, leadership, integrity and responsibility. The report suggests that companies should act in such a manner that it is perceived as a good corporate citizen (SAICA, 2009:3). It further identifies another term that is vital for corporate governance. It is the *triple bottom line* which consists of three elements namely *economic, social,* and *environmental* factors. These are three of the five main indicators used in the content analysis when analysing the sample groups' financial statements.

By focusing on these areas, and not only operating performance, the company improves its reputation and identity. It thus promotes the relevance of the organisation within its natural environment and community. Some of the responsibilities that are imperative to the good corporate citizen are that companies ought to invest and enhance the social wellbeing of the community or society, and also further contribute to natural ecology. A further important element is that companies work in partnership with each other in order to develop society as a whole. Hamman (2003:249) argues that South African companies have to engage in broader social developmental programs due to the fact that Apartheid restricted development in many of the rural areas during its regime. Development in South Africa was further constrained due to the fact that multinationals were encouraged to disinvest in the country during the 1970's Apartheid government (Hamman & Acutt, 2003:258).

All of these elements form part of Principle 2.1 of the King III report. MTN and Sasol should be analysed to determine to what extent they are engaging in activities which honour the values of the King III report as well as its ethical responsibilities. It would be thought-provoking to see how each of the companies approach these elements and what they could learn from each other. Contrary to the “add-on” approach, companies ought to identify its role within society and engage in projects and a company ethos that offers a better wellbeing for everybody. The King III report suggests that the good corporate citizen should enable an environment where relationships between stakeholders and employees are open and clear (SAICA, 2009:19). This allows for the individuals involved in the company to align their personal values to that of the company.

SAICA (2009:19) asserts that Principle 2.2 of the King III report states that tangible programmes and results are being adopted in South Africa – which coincides with the indicators used to analyse the financial statements in this study. They are as follows:

- Transformation,
- Human rights,
- Human capital,
- Social capital,
- Safety, and
- Health.

In order for companies to engage and sustain such activities, it requires leaders who are capable of manifesting a culture within the company that thrives on stimulating its environment and society. The chosen companies should be thoroughly investigated to establish the intentions and strategies of the leaders within the company and how the different sectors could benefit from each other. The onus of the implementation of ethical standards rests on the board of directors. It is necessary to determine how effective the boards of the chosen companies are and how they could improve.

2.5 SYSTEMS THEORY AND THINKING

Systems theory is certainly not a new concept, however, it still maintains difficulty in formulating a single definition for the concept. Boulding (1956:197) was one of the first academics to write about the systems theory and argued that *"It studies all thinkable relationships abstracted from any concrete situation or body of empirical knowledge."* Boulding's definition coincides with the fact that systems are an integral part of studying the relationship between companies and its stakeholders. Systems theory can therefore be applied directly to how these systems (or relationships) are reflected in contemporary financial statements. A branch within systems theory is cooperative systems. Barnard (1938:65) defined a cooperative system: *"A cooperative system is a complex of physical, biological, personal, and social components which are in a specific systematic relationship by reason of the cooperation of two or more persons for at least one definite end."* He stressed that it is vital for organisations to investigate and consider outside elements within the organisational decision-making process. Organisations are categorised as cooperative systems. The environment (i.e. physical, biological, and social elements) is imperative to the sustainability of the organisation and is simply too significant to ignore (Ferguson & Ferguson, 2007:32-35).

Sustainable societies can be built if modelled on nature's ecosystems (Stone & Barlow, 2005:19-20). It thus becomes imperative to better understand the environment and ecosystem before sustainability can be achieved. The environment is comprised of a great number of living systems. Every living entity, from the smallest fungus to all plants, animals and humans is a living system on its own. Additionally, the parts of these living systems contain further living systems within themselves. Communities of human social systems are also considered as living systems (Stone & Barlow, 2005:19-21). Such systems include schools, churches and families.

Systems' thinking is a difficult concept to comprehend according to (Stone & Barlow, 2005:20; Kast & Rosenzweig, 1972:454). They argue that there are two main reasons for this phenomenon. First, living systems are networks and are thus nonlinear, while people's entire scientific belief is constructed on linear thinking (i.e. chains of cause and effect). Linear thinking is straight forward – if something works

well, it will continue to work well if the same formula is applied and multiplied. For instance, if a company has sound financial results, it would reflect perpetual economic or financial growth. However, fruitful living systems are greatly nonlinear. They optimise their variables rather than maximise them (Stone & Barlow, 2005:20-21). The onus thus rest on sustainability and not efficiency.

Second, Stone and Barlow (2005:20) argue that systems thinking is challenging because it does not coincide with our culture where we are materialistic in our view of society. Scientists would claim that the quintessence of life lies in the matter of a molecule. However, systems theory challenges this idea and rather states that the essence of life can be seen as the patterns and relationships these molecules form with each other over time. There is a significant difference. Life is not static and cannot be confined to a single motionless entity in a certain point of time. Webs of relationships rather reflect the essence of life.

Stone and Barlow (2005:20-22) identified six perceptual shifts we have to apply if we are to be successful for a better understanding of ecological systems:

(a) *From the parts to the whole*. Living systems cannot be reduced to its parts; it should always be valued as a whole. The sum of the parts is not equal to the whole because the whole possess relational properties that a selected part does not.

(b) *From objects to relationships*. Ecosystems are communities of interconnected entities. An example in practise would be a company which relies on consensus in a decision-making process. Relational properties thus become vital in such an organisation.

(c) *From objective knowledge to contextual knowledge.* Contextual or relative thinking should be favoured to methodical thinking. Any sample entity can only be understood within the environment of the whole.

(d) *From quantity to quality.* Society is conditioned to believe that only pure statistical data is to be trusted in scientific models. We are naturally sceptic to acknowledge contextual information and often fall back on empirical evidence. The problem, however, with relationships is that it

cannot be measured or quantified, and thus does not attract the necessary attention.

(e) *From structure to process.* Living systems cannot be reduced to a single point in time. It is a continuing process of growing, dying, and renewing entities. The understanding of evolution and transformation thus become imperative to understanding living systems.

(f) *From contents to patterns.* Emphasis should rest on the configurations of relationships which continuously repeat. These repetitions are called patterns and offer greater understanding of living systems.

These perpetual shifts can be applied to modern organisations in how they approach environmental issues and how they communicate this through their financial statements. The systems theory paradigm is often used in the study of relationships between organisations and its surrounding environment, however, the predicament is that it is still too sophisticated to fully comprehend and predict (Kast & Rosenzweig, 1972:458). In a study, Kast and Rosenzweig (1972:459-462) compared two organisation types with each other. They compared a mechanistic/stable/closed organisation with an organic/adaptive/open organisation. Table 2.1 below reports their findings:

Table 2.1: Matrix of patterns of relationships between organisation types and system variables

Organisational Supra- and Subsystems	Continuum of Organisation Types	
	Mechanistic/Stable/Closed	**Organic/Adaptive/Open**
Environmental Relationships		
General nature	Placid	Turbulent
Predictability	Certain, determinate	Uncertain, indeterminate
Boundary relationships	Relatively closed; limited to few participants (sales, purchasing etc.);	Relatively open; many participants have external relationships; varied
Goals and values		
Organisational goals in general	Efficient performance. Stability, maintenance	Effective problem-solving, innovation, growth
Goal set	Single, clear-cut	Multiple, determined by necessity to
Stability	Stable	Unstable

Source: Adapted from Kast and Rosenzweig (1972:461).

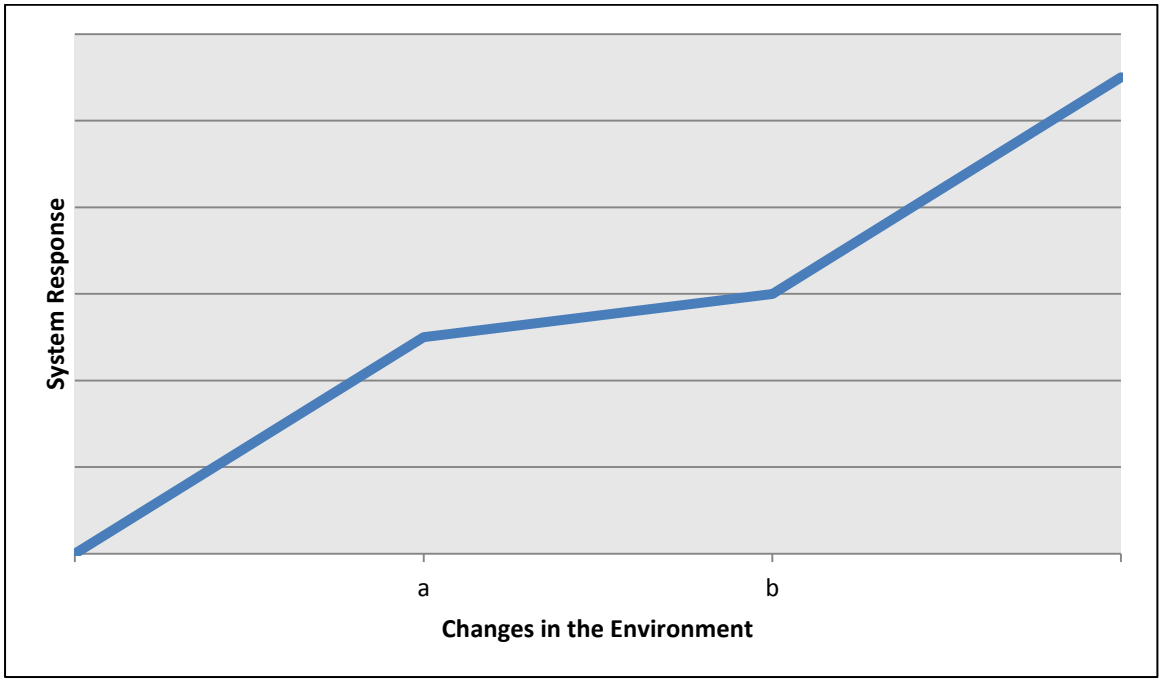
From Table 2.1 it is evident that organic and adaptive organisations are generally more tempestuous in nature. They are more unpredictable, however, they take a great deal of stakeholders into account. Furthermore, there is greater potential for growth and innovation. There is ever-increasing pressure on companies, regulatory and social, to take the environment into account. This causes great concern for managers, considering that it leads to a more uncertain or unstable organisation. Nonetheless, managers could capitalise on such demands by innovation and thus realise further potential growth prospects.

Systems theory is vital to comprehend or understand organisations. It is, however, not a simple formula that can be applied to a company. There is no easy answer to ensure success and sustainability. Nonetheless, it offers great insight into the mechanisms of an organisation and could lead to more effective decision making and management practice (Kast & Rosenzweig, 1972:462). A greater understanding of systems offers people the opportunity to better understand the reciprocal relationship entities have with its environment and how this process stimulates co-evolution.

2.5.1 Simple Systems vs. Complex Systems

All systems are different, some more complex than others. A simple system would continuously reflect the changes within its surrounding environment. An example of such a simple system would be a bath filled with hot water. The temperature of the water will eventually converge with the temperature of the room it is in. A complex system would protect itself, to a certain extent, against changes in its environment. This is known as homeostasis and is prevalent in biological systems (Odum, 1975). For example, a human can survive in a certain range of temperature. If the temperature increases or decreases, above or below this range, one would simply die. The human body will adjust to the temperature of its surrounding. Figure 2.3 illustrates how homeostasis occurs in a system when the environmental impact changes.

Figure 2.3: Homeostasis



Source: Adapted from Saviotti (1986:781).

It is evident from Figure 2.3 that the relative change from *a* to *b* is much smaller compared to the relative changes below and above the boundaries (i.e. <*a* and >*b*). Companies can be seen as complex systems and use various strategies to shield itself from risk. They hedge against risk by means of call and put options, swaps, insurance, and other derivative instruments. Organisations often do not move in accord with its environment and could fail if the changes in the environment exceed its range of 'safety' (i.e. between *a* and *b* in Figure 2.3). It is therefore of grave importance for organisations to integrate its surrounding environment into their business practice as much as possible bearing in mind that its long term sustainability is dependent on it.

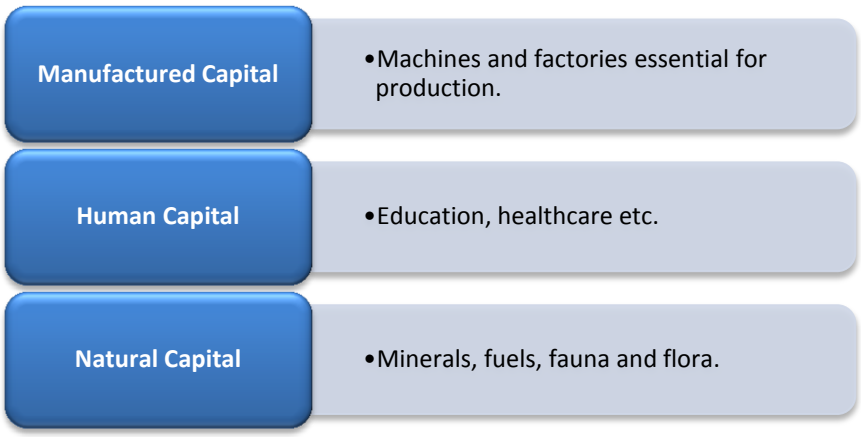
2.6 SUSTAINABILITY

Sustinere is the Latin word from which *sustainability* is derived. *Sus* is translated to 'up', while *tenere* can be interpreted as 'to hold'. The most basic definition of sustainability can thus be translated to uphold something or someone. However, the dictionary offers a great number of words such as endure, support, and maintain. Recently, words such as *resilience* and *robustness* are also used to describe a systems' sustainability (Ulanowicz, Goerner, Lietaer & Gomez, 2009:27). Over the

years, a plethora of definitions for sustainability have been used and the word in itself carries little substance (Marshall & Toffel, 2005:673). It is palpable that sustainability is crucial to the existence of any organisation and that the word sustainability, even though not truly understood, is just as important as terms like *justice* or *liberty*. A sustainable society is *"… one that can fulfil its needs without diminishing the chances of future generations"* (Brown, 1982 as referenced by Capra, 2007:10). Arrow, Dasgupta and Goulder *et al.* (2004:151), interpreted the definition of a sustainable society in a financial and economic framework by identifying a resource called *genuine investment* (or the change in society's *genuine wealth*). This basically states that the change of the collective utility of society's total consumption must be equal to, or greater than, zero (Gutowski, Sekulic & Bakshi 2009:1).

They divided genuine investment into three components (see Figure 2.4 below). This theory distinguishes between three distinctive components, namely manufactured capital, human capital and natural capital. Manufactured capital concerns itself with the factories and facilities that are necessary for production. Human capital entails the social components such as education and healthcare that should be upheld. Lastly, natural capital involves the natural resources such as minerals, fossil fuels, fauna and flora. It is argued that these components will have to be attended to and nurtured if one is seeking a sustainable society. Companies can therefore not afford to ignore these factors.

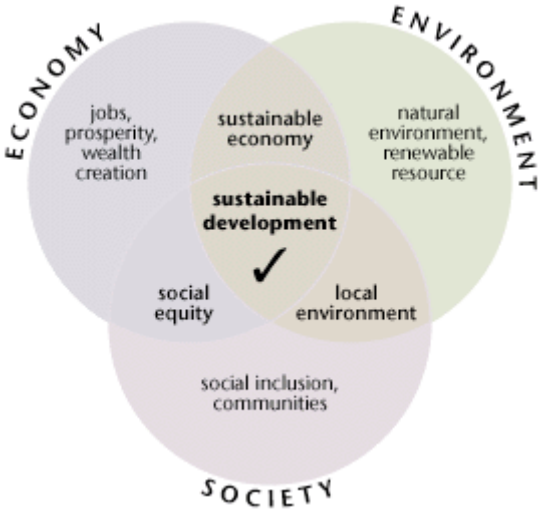
Figure 2.4: Components of Genuine Investment



Source: Gutowski *et al.* (2009:1).

The 2005 United Nations World Summit held on 24 October 2005, identified 'three pillars' or also known as the *Three E's* of sustainable development (United Nations General Assembly, 2005:11-12). The Three E's are; *economic* demands, *social equity*, and the *environment*. The three pillars are often referred to as the 'triple bottom line'. Over the years the triple bottom line has become a recognised benchmark to measure the quality of sustainability focused initiatives (Manning, Boons, von Hagen & Reinecke, 2011:8). Figure 2.5 below illustrates the relationship the three E's have with each other.

Figure 2.5: Correlation between the Three Pillars of Sustainable Development



Source: Great Britain Forestry Commission, 2012.

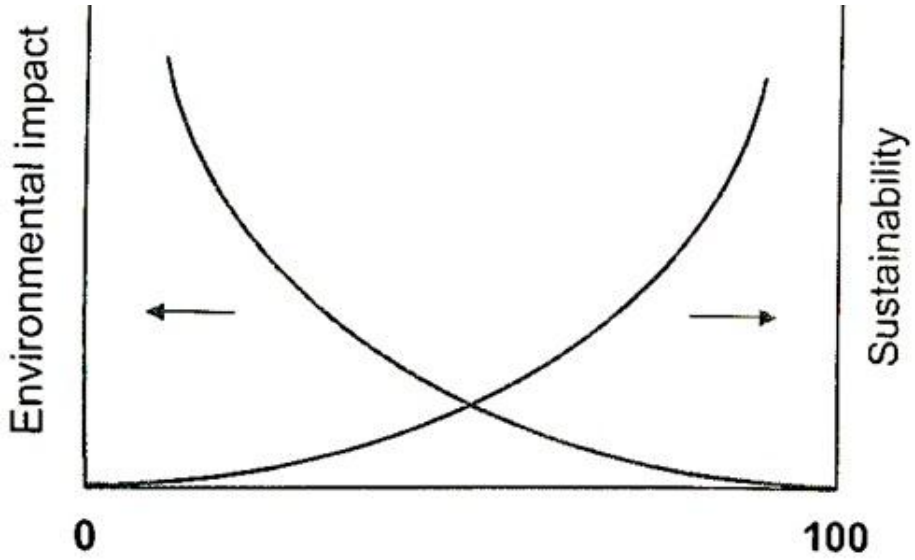
From Figure 2.5, it is evident that sustainable development can only take place when all three pillars are accommodated. It is important to note that the three elements in Figure 2.5 above are not mutually exclusive. In fact, if all three of these elements coincide, sustainability is reached. This raises questions with regard to how companies engage with the three pillars of sustainable development. Are companies creating wealth and jobs in the economy? Are companies including the surrounding communities within its business model? Are companies considering the natural environment? If the answer is yes, how do they communicate this in their financial statements? If they do not accommodate these pillars, the question has to be asked: why not?

2.6.1 The use of Exergy in Sustainable Energy

One of the methods to measure the efficiency of systems is by determining its *exergy*. Exergy is used to measure quality or value of a certain energy form (Rosen, Dincer & Kanoglu, 2008:129). More specifically, exergy measures the maximum amount of work a system can yield as it moves towards an equilibrium with its environment, whilst staying true to the principles of thermodynamics (Kotas, 1995; Rosen *et al.*, 2008:129). In other words, exergy is used to measure the potential output of a specific energy form. Companies can therefore utilise exergy analysis to minimise inefficiencies within the organisation. The United Nations indicated that in order to effectively protect the planets' atmosphere, companies in the energy sector should reduce its dependence on fossil fuels and focus more on increasing efficiency and utilising environmentally benign energy systems (Rosen *et al.*, 2008:132; Strong, 1992:492-493).

If exergy emissions are wasted, it could cause harm to the environment. Exergy represents the disequilibrium of energy with its environment, therefore waste exergy emission often damages the natural environment. For instance factories that dump their waste in natural water resources will in return eradicate any life within those resources. It is therefore important to note that exergy can contribute to a healthier environment or to the destruction of the environment if it is wasted. A problem with exergy is that it does not provide a solution for how companies can improve efficiency, but rather only points out the capacity of potential improvement. However, exergy analysis offers some indicators of where companies can increase efficiency, and thus create the opportunity for innovation in order to decrease inefficiencies (Rosen *et al.*, 2008:134). Figure 2.6 (below) indicates how the environmental impact decreases and how sustainability increases as exergy efficiency increases. Exergy is thus a useful tool to increase efficiency as it promotes benign environmental practises.

Figure 2.6: Qualitative illustration of the relationship between environmental impact and sustainability of a process, and its exergy efficiency



Source: Rosen *et al.* (2008:135).

From Figure 2.6, it is evident that environmental impact decreases and sustainability increases as the exergy efficiency of a certain process increases. As the efficiency of exergy increase to 100%, sustainability approaches infinity as the process is approaching reversibility. Environmental impact on the other hand moves towards zero, considering that exergy can only be transformed from one form to another by means of waste emissions or internal consumption. Contrariwise, when exergy efficiency moves toward 0%, sustainability will also move towards 0%, considering that resources are utilised without producing any useful output. Environmental impact, on the other hand, approaches infinity as an ever increasing amount of resources are needed to be utilised due to the fact that a fixed product or service has to be delivered whilst the production process is producing enormous amounts of waste (Rosen *et al.*, 2008:134-135).

2.6.2 The Spiral of Relational Meaning

In order to achieve, or rather pursue sustainability, indicators will have to be identified in this study. Only once specific indicators have been recognised, can the degree of sustainability be measured. The Three E's offers indicators against which companies can be compared in order to establish sustainable efforts and initiatives.

However, this study suggests that the Three E's should be expanded to the Five E's of sustainability, by including *earnings* and *employee equity.*

First, it is argued that a company must have sound financial results (i.e. positive earnings) if it wishes to be sustainable in the future. This is the most central element of organisational sustainability. Second, it is of the opinion that companies ought to consider its employees' welfare (i.e. employee equity) when striving toward long term sustainability. Third, is social equity and how companies engage in social and communal activities. It is believed that if an organisation does not participate in social interaction, that sustainability will be compromised in the long run. Fourth, is the economy. It is argued that if a company aims to achieve perpetual sustainability, then they will have to be active role-players in the economy and cannot simply sit back rely on economic stability. Finally and probably most importantly, is the environment. If any entity ignores its environment, it will become increasingly difficult to sustain oneself in the long term. The environment can be considered as the fundamental element which ought to be respected if one wishes to achieve ultimate sustainability. Figure 2.7 below illustrates the relationship these stakeholders have with each other.

Figure 2.7: Relationship between the Five E's of Sustainability

It is important to remember that companies will not be able to make any long-term profit if it is not sustainable (Capra & Pauli, 1995:vii). Current business practices are

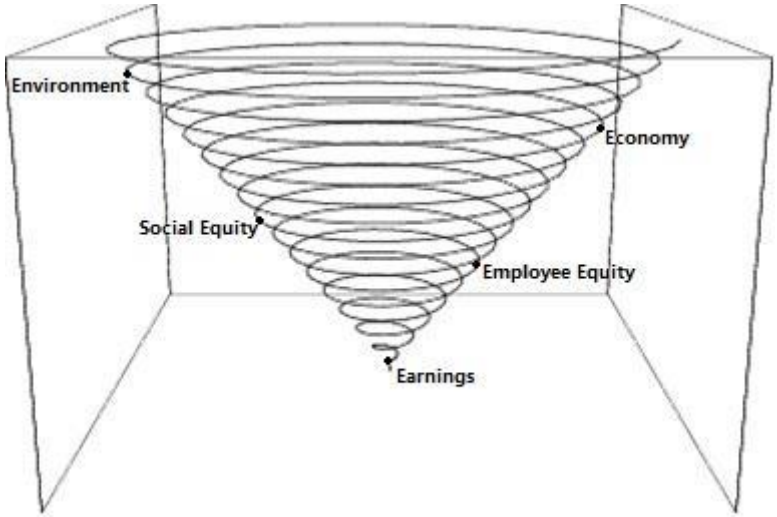
destroying the planet and our natural environment before our eyes (Hawken, 1993:3). The need to recognise the vital role companies have to play in order to secure a sustainable future for humanity is imperative, considering that the contrary could lead to an environmental and socio-economic disaster (Ackers, 2009:2; Eccles, Pillay & de Jongh, 2009:22). Currently, many organisations are working against nature and not in harmony. Some maintain that by focusing on efficiency, sustainability can at least be partly fulfilled (Rosen *et al.*, 2008:129). Others support this argument by adding that decreasing energy consumption, emissions and waste contribute to greater sustainability (Anon., 2010:27).

Ecological economist Herman Daly identified three conditions that will have to be met if a society is to be sustainable (Meadows, Randers & Meadows, 2004:254). These conditions are:

a) *Its rate of use of renewable resources does not exceed their rates of regeneration;*
b) *Its rate of use of non-renewable resources does not exceed the rate at which sustainable renewable substitutes are developed*; and
c) *Its rate of pollution emission does not exceed the assimilative capacity of the environment.*

In theory these principles make sense, however, can a company meet these conditions? And how do companies reflect such efforts in its financial statements? Financial statements will have to account for each of the identified five pillars if it wishes to be sustainable. This modified model of sustainability can be viewed as a spiral that expands and accommodates more stakeholders as it spreads out. The relationship the Five E's have with each other is imperative for ultimate sustainability, and only once all of them have been accommodated can an organisation persist and be prosperous. As discussed earlier, the Five E's can be thought of as a spiral that is ever-expanding. From its smallest point where earnings is the fundamental element on an operational level of a company that needs to be healthy in order for a company to survive, right up to the point where the environment is considered, within the business model, on the path to absolute sustainability. Below, in Figure 2.8, is an illustration of The Spiral of Relational Meaning discussed above.

Figure 2.8: Graphical illustration of The Spiral of Relational Meaning



Source: Adapted from Weisstein (n.d.).

The Spiral of Relational Meaning will be the model used to engage in the content analysis of the sample groups' financial statements. The five E's (i.e. earnings, employee equity, social equity, economy, and environment) will be the main indicators used when scrutinising financial statements. Further indicators will be established in order to determine if the sample group is in accord with the five pillars of sustainability. The next chapter will explore the practical implementation of the model.

3 A QUALITATIVE ANALYTICAL STUDY OF TWO SOUTH AFRICAN COMPANIES

3.1 PRACTICAL IMPLEMENTATION OF THE SPIRAL OF RELATIONAL MEANING

In the previous chapter the importance of relationships was discussed. It was argued that any entity has to have a healthy continuing relationship with its environment (natural or otherwise) if it wishes to achieve ultimate sustainability. Five elements, introduced as the Five E's, were identified and will be used as indicators to determine how contemporary financial statements accommodate these elements. The Five E's in ascending are*: Earnings, Employee Equity, Social Equity, Economy* and *Environment.*

The DuPont system of analysis, first used by the DuPont Corporation in the 1920's, is a widely recognised tool that is used to analyse a company's financial performance by dissecting its financial statements and understanding the driving factors of the return on equity (ROE) of an organisation (Gitman, 2006:75; Firer, Ross, Westerfield & Jordan, 2008:67). It utilises a combination of elements in the income statement (i.e. net profit margin) and elements of the balance sheet (i.e. financial leverage multiplier and total asset turnover) to evaluate a company. Ultimately the goal of the DuPont system of analysis is to determine the return on equity for a company. It further allows the analyst to determine which segments of the company is performing well and which sectors are underperforming.

Traditionally, the DuPont system of analysis is only used to determine the profitability of a company. However, this research suggests that it can be modified and expanded to accommodate many more stakeholders into the model. This dissertation argues that by expanding the DuPont model, one will not only determine the profitability of a company, but will also realise a measure of sustainability. By adding the other four E's of sustainability to the DuPont model, it is expanded to create *The Spiral of Relational Meaning*. The 'spiral' indicates the expanding motion in which stakeholders impact and influence a company. While the 'relational meaning' point toward the critical relationship each stakeholder has with each other and a company.

Under each of the Five E's, further indicators were selected in order to conduct a thorough content analysis on financial statements. These indicators serve as the elements which collectively form The Spiral of Relational Meaning. These indicators are as follow:

1. Earnings:

    a. *Return on Equity (ROE):* The ROE is one of the most important profitability ratios analysts use when valuing a company. It measures the return stockholders earn on their investment (Gitman, 2006:69). The DuPont system of analysis's ultimate objective is to calculate the ROE of a company. It is therefore an essential profitability ratio that should be considered when appreciating a company.

    b. *Cash Conversion Cycle (CCC)*: The CCC is a liquidity measure of a company's funds bearing in mind that it determines the length of time it takes a company to convert cash outflow (i.e. the purchase of stock) to cash inflows (Gentry, Vaidyanathan & Lee, 1990:90; Moss & Stine, 1993:25; Richards & Laughlin, 1980:34). Earnings will explore various indicators to determine the overall financial state of the company. Each segment of the financial statements will have to be utilised in order to produce an accurate reflection of the financial position of the two companies. The CCC will utilise the Statement of Financial Position to determine the liquidity of the sample group.

    c. *Economic Value Added (*EVA™*)*: EVA™ (which is a registered trademark of Stern, Stewart, & Co.) is a method to determine if a company is creating wealth for the investors. It is calculated by subtracting the cost of capital from the after tax profits of a company of both debt and equity (Chen & Dodd, 1997:318). Rogerson (1997:771) argues that the EVA™ offers a more accurate technique of measuring income, due to the fact that it weighs the costs to benefits up against each other. Therefore, EVA™ was included in The Spiral of Relational Meaning model. However, according to de Villiers (1997:286) one of the limitations of EVA™ is that it depends on accounting profits which is generally a flawed proxy for economic profit.

d. *Sustainable Growth*: Sustainable growth is simply the yearly percentage increase of a company's sales that is consistent with its financial policies (Higgins, 1977:7). It is argued that if a company strives toward long term sustainability, it ought to at least have some level of growth. In the absence of growth, a company will not be able to adapt to its changing environment in order to counter from stagnating.

e. *Dividend Discount Model (DDM):* The DDM is also known as the Gordon Growth Model. The model was developed by Myron J. Gordon in 1959 (Gordon, 1959). By discounting the sum of a company's future dividend payments, one can determine what the stock is essentially worth. It is calculated by multiplying the most recent dividend by one plus the growth rate, and dividing the result by the difference between the cost of capital and the growth rate. It is calculated as follow:

$$P_0 = \frac{[D_0 \times (1 + g)]}{k - g}$$

Where:

P_0 = Current value of the share;

D_0 = The most recent dividend;

g = The projected growth rate; and

k = The cost of capital.

The WACC will be used as the cost of capital in this study. The DDM is thus a useful method to value a company's shares by means of actual and projected variables. Consequently, it was selected as the fifth indicator that will be used under *Earnings.*

f. *Economic Value Added Momentum:* EVA Momentum is a performance measure, developed by Stewart (2009), which determines the change in a company's EVA™ relative to its sales. It is calculated as follow:

$$EVA\ Momentum = \left(\frac{EVA_{T_1} - EVA_{T_0}}{Sales_{T_0}}\right)(100)$$

Where:

EVA_{T_1} = Economic Value Added in time period 1;

EVA_{T_0} = Economic Value Added in time period 0; and

$Sales_{T_0}$ = Sales in time period 0.

g. The EVA Momentum is expressed as a percentage in order to determine if the company is experiencing growing, decaying, or static economic profit. The EVA Momentum thus offers a simple measure of determining economic profit. If the EVA Momentum is positive, the company is creating value. Conversely, if the EVA Momentum is negative, the company is destroying value. When the EVA Momentum is zero, it indicates that the company is simply realising expected shareholders profit and is thus neither creating nor destroying value (Stewart, 2009:76-77).

2. Employee Equity:

a. *Sales per employee*: The sales per employee are a ratio that will be used to determine how much sales each company is generating per employee. By comparing historical values, it ultimately offers an indication of how valuable an employee, on average, is to the company. It is calculated by dividing the sales for a specific financial year, by the amount of employees in the company.

b. *Cost per employee*: The cost per employee is a ratio that offers the inverse of the sales per employee. It determines what each employee, on average, cost the company in terms of operating expenses. This ratio

is calculated by dividing the costs the company accrued, by the amount of employees in the company.

c. *Value per employee:* The value per employee is an indicator used to determine what an employee is worth to the company. This is derived by subtracting the cost per employee (see b.), from the sales per employee (see a.). This ratio offers a method to determine how much value an average employee creates for the firm, and subsequently for the shareholders.

d. *Net cash flow per employee*: The net cash flow per employee utilises the cash flow statement of a company in order to determine what the cash flow an employee generates on average is. This ratio is determined by dividing the net cash flow of the company by the amount of employees.

e. *Salaries and wages per employee:* This ratio is used to determine what the average salary is of an employee. It is calculated by dividing the total salaries and wages by the number of employees.

f. *Employee equity ratio*: This ratio offers an indication of whether employees are sufficiently rewarded for the value they add to the company. It is calculated by dividing the value per employee (see c.), by the salaries and wages per employee (see e.).

3. Social Equity:

a. *Percentage social investment in net profit*: This ratio offers the percentage the company has invested in the surrounding communities. This is calculated by dividing the net profit by the amount invested in social developmental projects. It will offer an indication of how much the company is sacrificing in order to stimulate social equity.

b. *Social involvement*: This is a qualitative indicator to determine what the company is doing to promote social development. An example of social involvement would be volunteering projects and initiatives.

4. Economy:

    a. *Yearly change in the amount of employees*: The yearly change in the number of employees is to determine if the company is stimulating the economy by increasing its workforce. If for instance there is a significant increase in employees from the previous year to the current year, it could be due to the fact that the company is purposefully trying to stimulate the economy by better utilising the workforce. It is calculated as follow:

$$E_{\%\Delta} = \frac{E_1 - E_0}{E_0}$$

Where:

$E_{\%\Delta}$ = The percentage change in employees;

E_1 = The number of employees in time period 1; and

E_0 = The number of employees in timer period 0.

    b. *Economic involvement*: Economic involvement is another qualitative indicator which will be used to determine what a company is doing in order to stimulate or improve the economy. This could offer a clearer indication if the company is actively pursuing greater economic growth and stability, or are they completely dependent on external macro-economic factors.

5. Environment:

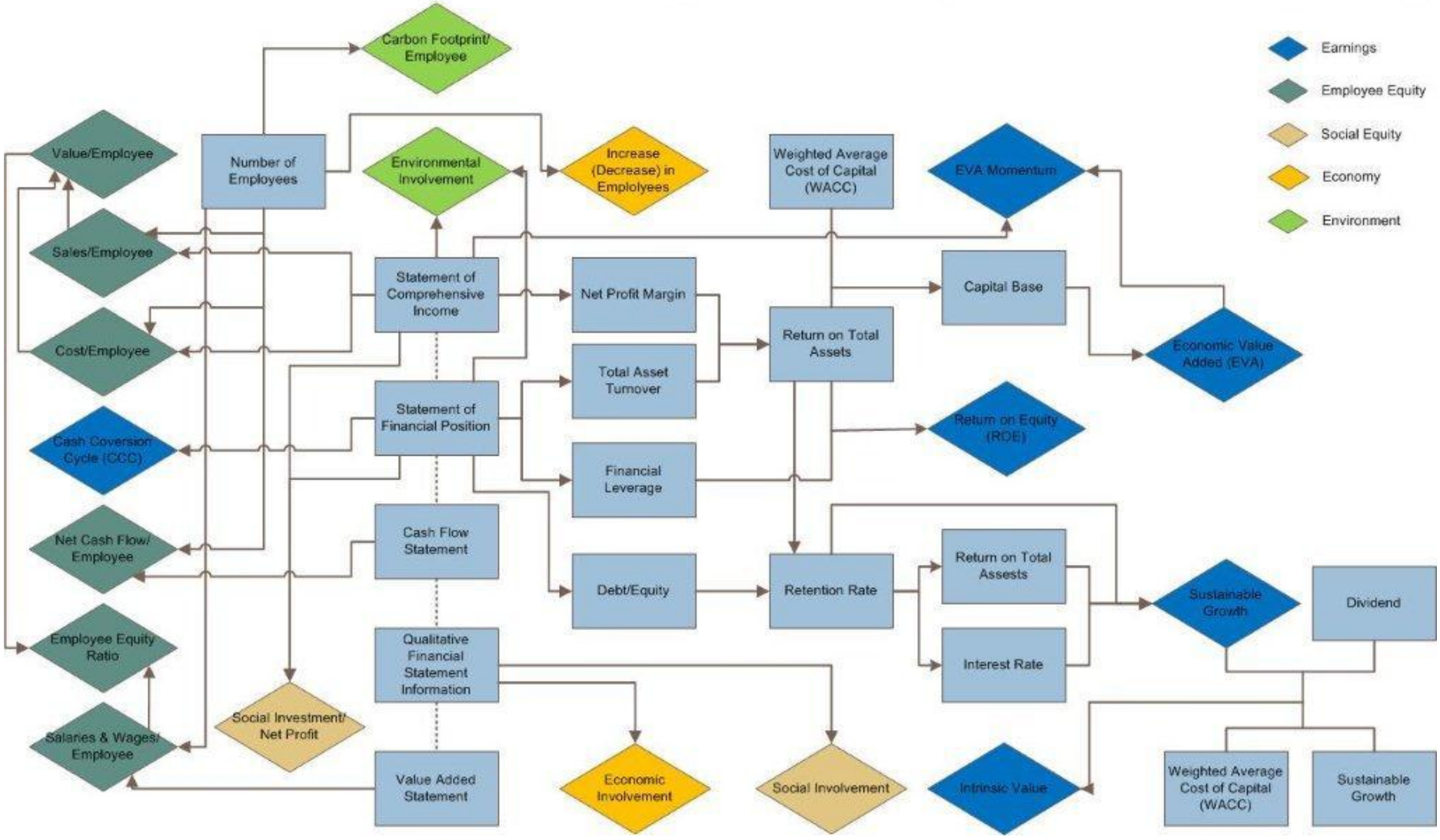
    a. *Environmental involvement:* Environmental involvement is a qualitative indicator. By analysing the financial statements of the company, it can be determined what impact the company has on the environment and what the company is doing to improve its current situation.

    b. *Carbon footprint per employee*: Companies vary in size and therefore it is difficult to determine if a company's carbon footprint is high or not. Therefore, this indicator was developed to establish what the carbon foot print of the company is relative to its size. This will be calculated by

dividing the total CO_2 emissions of the company, by the number of employees.

All of the main- and sub-indicators that will be used for this study have been described above. This forms The Spiral of Relational Meaning. Where earnings is the first imperative when seeking sustainability, the spiral expands to include (in ascending order) employee equity, social equity, the economy, and the environment. Figure 3.1 on the next page is an illustration of the suggested model and its activity flow.

Figure 3.1: The Spiral of Relational Meaning



It is evident from the suggested model, *The Spiral of Relational Meaning* (see Figure 3.1), that it is much more complex than the conventional DuPont triangle. It offers an analyst greater insights into the company, not only in terms of financial results, but rather provides one with a holistic image of a company. This is an open model, unlike the DuPont triangle, and is open to alteration by an analyst. This is, however, a good indication of the relationship stakeholders have with each other and the significance it offers in terms of long term sustainability. The model can thus be expanded to include as many stakeholder relationships as possible.

3.2 MTN GROUP LIMITED

3.2.1 Background

MTN Group Limited (hereafter MTN) was incorporated in 1994 and is a telecommunications company who offer voice and data communication services and products to businesses and individuals (MTN, 2010). They possess Global System for Mobile Communications (GSM) licenses in twenty-one countries across Africa and the Middle East. Furthermore, they provide internet services in thirteen countries spanning over three continents. By the end of 2011, MTN had a total of 164,5 million subscribers over various continents which realised a profit of R121,9 billion. During the last couple of years, MTN has made great investments in fibre optic cables for improved internet services. The ultimate goal MTN aims to achieve is to become the leaders in telecommunication in emerging economies. They pride themselves on employee diversity and boasts of approximately 35 000 employees from fifty-five nationalities and offer services in five different languages (MTN, 2010). Their headquarters are situated in Johannesburg and they are listed under the share ticker “MTN”. Before the companies can be thoroughly dissected, its corporate governance structures ought to be discussed in order to obtain a clearer culture of each company.

3.2.1.1 Corporate Governance

MTN indicated that they focused on reviewing the corporate governance framework of the MTN Group (MTN, 2011a:1). With the help of independent advisors, MTN focused on three main areas, namely: the King III report, JSE Listings Requirements, and the Companies Act (MTN, 2011a:1). MTN identified a few key compliance achievements. The first of these achievements was to establish a Social and Ethics

Committee. Their inaugural meeting was held in the first quarter of 2012 and their terms of reference were approved by MTNs' board (MTN, 2011a:2). Furthermore, MTN engaged in reviewing their governance policies, one of which was the code of ethics. It was revised and will likely be implemented in 2012. In accordance with MTNs' aim to strive for excellence, they implemented a program to coach their directors, prescribed officers and other significant staff with regards to the King III report, JSE Listings Requirements and the Companies Act. MTN has seven main committees. Below, in Figure 3.2, is a list of all the committees and their respective members.

Figure 3.2: MTN board committees and members

Source: Adapted from MTN (2011a:3).

The Social and Ethics Committee is a point of interest for this specific study. It is a new committee established in accordance with the Companies Act 2008 in terms of Sections 72(4), (5) and in line with regulation 43 of the Companies Regulations, 2011 (MTN, 2011a:7). The purpose of the committee is to identify and comply with any relevant legislative or legal requirements with regard to environmental and social

development issues (MTN, 2011a:7). In order to truly analyse the Social and Ethics Committee, it is necessary to dissect the committee and its members. MTN (2011a:3) states that the members are:

KP Kalya: Kalyan, also serves on the Risk Management, Compliance and Corporate Governance Committee.

NP Mageza: Mageza, simultaneously serves on the Audit Committee and the Risk Management, Compliance and Corporate Governance Committee.

MLD Marole: Marole, concurrently works for the Risk Management, Compliance and Corporate Governance Committee.

JHN Strydom: Strydom, is a member of the Audit committee, Remuneration and Human Resources Committee, and the Risk Management, Compliance and Corporate Governance Committee.

J van Rooyen: Van Rooyen, also serves on the Audit Committee and Risk Management, Compliance and Corporate Governance Committee.

It can quickly be identified that the Social and Ethics Committee consists of five of the six members of the Risk Management, Compliance and Corporate Governance Committee. It begs the question whether this is the most effective manner to exploit the maximum potential of an ethics committee. The King III report places great prominence on the inevitability of sovereign directors who can uphold impartiality in perplexing circumstances. However, MTN claims that they do comply with King III requirements. The current board of directors has implemented a policy which states that any non-executive director who have served for the duration of a nine-year period will be obligated to undergo an arduous re-appointment process if he or she seeks further re-employment (MTN, 2011a:5). Nevertheless, it is questionable whether pure neutrality can be maintained when a board consists of eighty-percent of a different board within the same company.

3.2.2 A Qualitative Analytical Study of MTN Group Limited by Means of Applying The Spiral of Relational Meaning

3.2.2.1 Earnings

The first of the five E's that will be discussed is *Earnings*. First, the ROE will be determined by means of the DuPont system of analysis. This is also the basis from which The Spiral of Relational Meaning is formed. Second, the Cash Conversion Cycle (CCC) will be calculated. Third, the Economic Value Added (EVA™) of MTN will be established. Forth, the sustainable growth of the company will be determined. Fifth, the Gordon Model will be used to calculate the Dividend Discount Model (DDM) of MTN. Finally, the Economic Value Added Momentum of each company will be calculated.

There are three main formulas that need to be considered when conducting a full DuPont system of analysis review. Net profit margin and return on total assets are profitability ratios, while the third important figure is the financial leverage of the company. Each of these three affects the ROE in a unique manner. The operational efficiency of the company is measured by the profit margin, while the asset use efficiency is measured by the total asset turnover, and the financial leverage is measured by the equity multiplier (Firer, *et al.,* 2008:69). The next few sections will focus on each of these elements.

The net profit margin is the percentage of profit a company realises after all costs and expenses have been deducted from sales. It is an easy method for managers and investors to see how profitable the company is. Similarly for the gross profit margin, stakeholders seek to maximise this figure. The net profit margin is a simple calculation. It is simply derived by dividing net profit by sales as seen below.

$$Net\ Profit\ Margin = \frac{Net\ Profit}{Sales}$$

Table 3.1 below states the net profit margin for MTN from 2007 till 2011.

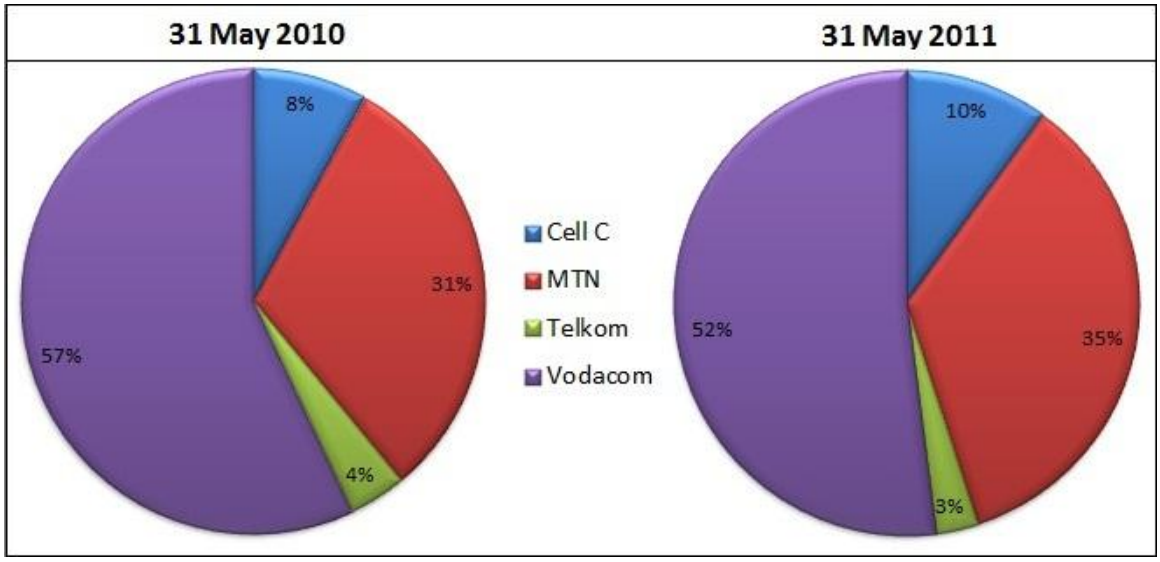
Table 3.1: Historical net profit margin for MTN

Year	2007	2008	2009	2010	2011
Net Profit Margin	14.50%	14.94%	(5.50%)	12.47%	17.13%

Source: McGregor BFA (2012a).

As seen in the table above, 2011 delivered the highest net profit margin in the past 5 years. The increase in profits for the 2011 financial year could partly be attributed to the fact that MTN gained market share. According to Blue Label Telecoms (2011:9), both MTN and Cell C gained market share from 2010 to 2011, whilst the Telkom Group Limited and Vodacom both lost market share, as seen in Figure 3.3 below.

Figure 3.3: Prepaid airtime revenue per network (with more than 1% market share)



Source: Blue Label Telecoms (2011:9).

The total asset turnover is used to determine how efficiently the organisation utilises its assets in order to generate profit for the company. The total asset turnover is easily calculated by dividing sales by total assets. It is therefore logical that companies with a large number of assets will have a lower total asset turnover. Similarly, companies with high sales will achieve a high asset turnover. One of the criticisms against the use of total asset turnover is the fact that it does not take the age of the asset into account. New assets will cause the ratio to decrease due to a

high purchase price compared to previously depreciated assets that deliver the same level of output.

$$Total\ asset\ turnover = \frac{Sales}{Total\ assets}$$

Table 3.2 below presents the total asset turnover for MTN calculated by using the balance sheet figures of 2007 till 2011.

Table 3.2: Historical total asset turnover for MTN

Year	2007	2008	2009	2010	2011
Total Asset Turnover	0.95x	0.82x	0.93x	0.92x	0.83x

Source: McGregor BFA (2012a).

Companies, who have high profit margins, often have a low total asset turnover, and *vice versa*. MTN's total asset turnover seems consistent in the medium to long-term. It is evident that the high net profit margin is complemented by the low asset turnover. Even though the total asset turnover could be considered as low, it is not a cause for great concern.

Financial leverage is used when a company utilises debt to finance its operations. Each company should decide that the debt and equity ratio of their company should be concurrent with their strategic policies. An aggressive risk-seeking company would have more than fifty percent debt and leverage most operations with borrowed money. The potential return for such a company is significantly higher than a company who implements only a small amount of debt, however so is the risk. The financial leverage of a company can be computed by dividing the total assets of a company by the equity of a company. By using McGregor BFA (2012a), it was possible to calculate the financial leverage for MTN for the 2011 financial year.

$$Financial\ leverage_{2011} = \frac{Total\ assets}{Equity}$$

$$Financial\ leverage_{2011} = \frac{R\ 146\ 868\ 000}{R\ 88\ 897\ 000}$$

$$Financial\ leverage_{2011} \approx 1.65$$

From the calculations above, it is evident that MTN utilised a relatively reasonable amount of debt to finance operations during 2011. MTN does not have excessive debt, however, still enough to make a significant contribution to the return on equity without being exposed to too much risk. MTN operates with significantly less financial leverage than Vodacom, who is arguably their biggest competition. Vodacom had a financial leverage ratio of 2.33 for the 2011 financial year (McGregor BFA, 2012b).

The ultimate goal of the DuPont system of analysis is to determine the return on the equity of a company. The return on equity will give investors, potential investors, analysts and management an idea of how the company has performed the past financial year. The return on equity is calculated by multiplying the net profit margin by the asset turnover, and finally the financial leverage. This is known as the DuPont system of analysis as seen below.

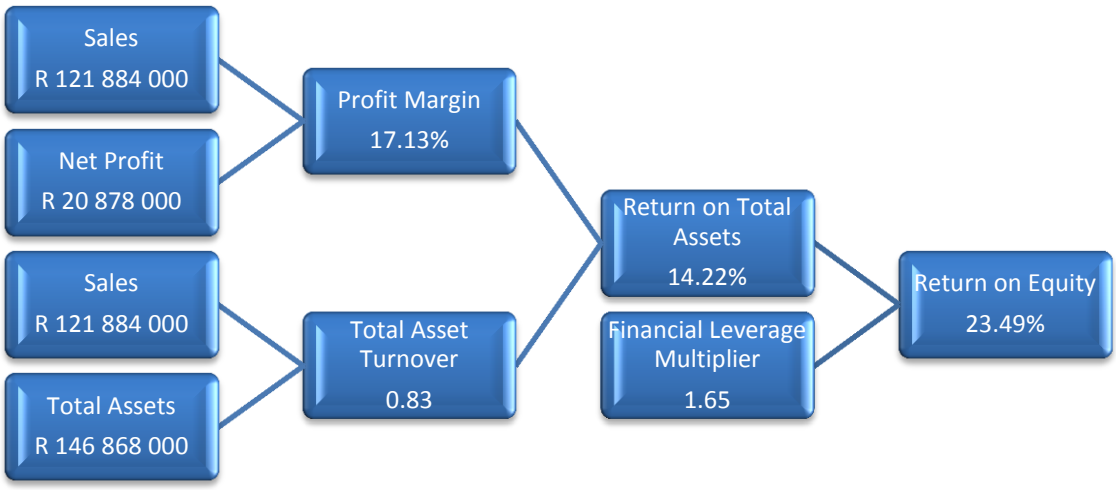
$$Return\ on\ equity = \frac{Net\ profit}{Sales} \times \frac{Sales}{Total\ assets} \times \frac{Total\ assets}{Equity}$$

If this formula is applied to MTN, the return on equity can easily be determined. Below is the ROE for MTN for the 2011 financial year.

$$ROE_{2011} = 17.13\% \times 0.83 \times 1.65$$

$$ROE_{2011} \approx 23.49\%$$

Figure 3.4: The DuPont system of analysis for MTN



Source: Adapted from McGregor BFA (2012a).

This basically means that MTN had a return on equity of 23.49% for the 2011 financial year, which is an attractive prospect. Any ROE above 20% is considered to be an excellent return on investment and it would have interested various analysts. Table 3.3 below summarises the ROE for MTN for the last five years.

Table 3.3: Historical return on equity for MTN

Year	2007	2008	2009	2010	2011
Return on Equity	22.42%	20.05%	(8.79%)	19.90%	23.49%

Source: McGregor BFA (2012a).

From Table 3.3 it can be established that MTN had impressive results in recent times. However, it should be noted that Vodacom still outperformed MTN during this period.

The second important indicator that will be discussed is the Cash Conversion Cycle (CCC). As discussed previously, the CCC offers a liquidity measure for analysts by determining the time it takes a company to convert cash outflows to cash inflows (Gentry *et al.*, 1990:90; Moss & Stine, 1993:25; Richards & Laughlin, 1980:34). The CCC for MTN was calculated by using the published financial statements from 2006 to 2011. Table 3.4 below illustrates the CCC for the past five years.

Table 3.4: Cash Conversion Cycle for MTN

Turnover Ratios	2007	2008	2009	2010	2011
Receivables (Sales/Avg. Receivables)	9.35	9.84	10.54	12.58	24.33
Inventory (COGS/Avg. Inventory)	43.89	38.09	41.66	51.76	36.79
Payables (Purchases/Avg. Payables)	8.87	8.32	9.77	16.75	14.35
Days Outstanding (365/Turnover Ratios)					
Days Sales Outstanding	39.04	37.09	34.63	29.01	15.00
Days Inventory Outstanding	8.32	9.58	8.76	7.05	9.92
Days Payable Outstanding	41.15	43.87	37.36	21.79	25.44
Cash Conversion Cycle (CCC) in days	**7**	**3**	**4**	**15**	**-1**

Source: Adapted from McGregor BFA (2012b).

The CCC for MTN has been fluctuating over the past five years, however, it has consistently been kept relatively low and was even negative in 2011. This means that MTN is collecting debt from customers before they pay their suppliers. This is an indication of the strict collection and payment policies of the company. The CCC of MTN can be considered good, however, such a low CCC is not always sustainable.

The next earnings indicator that will be assessed is Economic Value Added (EVA™). The EVA™ is the economic profit that a company realises (i.e. the profit after the cost of capital was deducted). In this study the R157 was used to calculate the WACC, considering that it is the most applicable risk-free rate (RFR). The EVA™ was calculated by using the McGregor BFA without adjusting the figures for inflation. Table 3.5 below indicates the historical EVA™ for MTN over the past five years.

Table 3.5: Historical EVA™ for MTN

	2007	2008	2009	2010	2011
WACC (%)	11.3155	11.3336	12.958	11.627	11.5373
Return On Capital (%)	19.1	19.74	24.55	22	22.46
EVA™	**R6,834,107.60**	**R10,717,199.40**	**R13,388,188.50**	**R11,763,313.20**	**R13,815,001.20**

Source: McGregor BFA (2012d).

From Table 3.5 above, it is evident that MTN has been experiencing steady growth in its EVA™. This is an indication that MTN is generating healthy profits above the cost of its capital. MTN is thus clearly creating value for its shareholders. The fourth indicator used to determine the earnings of MTN, is by determining sustainable growth. Higgins (1977:7) states that sustainable growth is the yearly percentage

increase of a company's sales that is consistent with its monetary policies. The sustainable growth is a very important indicator investors use to determine if a company is likely to be profitable in the future. Consequently, it has been included into this study. However, only the most recent sustainable growth measure is relevant considering that it is an estimate of the future and thus dismisses the importance of historical figures. According to McGregor BFA (2012b) the sustainable growth rate for MTN calculated for the 2011 financial year is 9,77%. This is a healthy growth rate considering that it is greater than the current inflation rate. The sustainable growth rate is attractive and would please shareholders.

The Dividend Discount Model (DDM), or the Gordon model, is a method to discount a company's potential future cash flow relative to its cost of capital and estimated growth rate. By applying the DDM, an analyst obtains the intrinsic value of a share and can quickly determine if the share is overpriced, under-priced, or fairly valued. Similarly to sustainable growth, only the most recent DDM figure is of importance considering that it is a prediction of future value. For the calculation of the intrinsic value, the R157 bond was selected due to the fact that it is currently the most applicable bond. Furthermore, the expected market return is assumed at 12,77% based on the JSE All Share Index. The intrinsic value is calculated as follow:

$$P_0 = \frac{[D_0 \times (1 + g)]}{k - g}$$

Where:

P_0 = Current value of the share;

D_0 = The most recent dividend;

g = The projected growth rate; and

k = The cost of capital.

$$\therefore P_0 = \frac{[7.49 \times (1.0977)]}{0.1319 - 0.0977}$$

$$\therefore P_0 \approx R240.40$$

The BFA McGregor (2012b) database was used to obtain figures required for this calculation. The share yearly share price for MTN for the 2011 financial year was R141,65 (McGregor BFA, 2012b). This indicates that MTN's share price is greatly undervalued (i.e. R240,40 > R141,65). The intrinsic value is attractive and would satisfy shareholders. Finally, the 2011 EVA Momentum was calculated as follow:

$$EVA\ Momentum_{2011} = \left(\frac{EVA_{T_1} - EVA_{T_0}}{Sales_{T_0}}\right)(100)$$

$$EVA\ Momentum_{2011} = \left(\frac{R\ 13\ 815\ 001{,}20 - R\ 11\ 763\ 313{,}20}{R\ 114\ 684\ 000}\right)(100)$$

$$EVA\ Momentum_{2011} \approx 1{,}79\%$$

Due to the fact that MTN has a positive EVA Momentum, it is evident that MTN has created growth in its economic profit at a rate of 1,79% from 2010 to 2011. This is a positive prospect and an aspect of the company management would want to increase in the coming years.

3.2.2.2 Employee Equity

Employee equity is important indicator considering that it ultimately measures the value employees add to a firm. The first sub-indicator that will be used is the sales per employee ratio. The sale per employee ratio is simply calculated by dividing the amount of sales by the number of employees. Table 3.6 below offers the historical sales per employee over the past five years.

Table 3.6: Sales per employee for MTN

Year	2007	2008	2009	2010	2011
Sales per employee	R4 916 319	R6 231 826	R6 393 683	R6 435 690	R6 574 110

Source: McGregor BFA (2012b).

From Table 3.6 above, it is evident that MTN's turnover per employee has consistently increased over the past five years. This is an indication of increased efficiency and productivity of the company. The second ratio that will be looked at is the cost per employee. This will be calculated by dividing the Cost of Goods Sold

(COGS) by the number of employees. Table 3.7 below indicates the calculation of the ratio.

Table 3.7: Cost per employee for MTN

	2007	2008	2009	2010	2011
COGS	R 48,493,000	R 67,402,000	R 81,109,000	R 80,470,000	R 77,596,000
Number of Employees	14878	16452	17509	17820	18540
Cost/Employee	**R 3,259.38**	**R 4,096.89**	**R 4,632.42**	**R 4,515.71**	**R 4,185.33**

Source: Adapted from McGregor BFA (2012b).

The cost per employee increased from 2007 to 2009 however, from 2010 it has decreased. It could be due to the fact that MTN increased its efficiency and management to utilise resources more effectively. The next ratio that will be calculated is the value per employee. This gives an analyst the opportunity to determine what an employee, on average, is worth to the company. It is calculated by subtracting the cost per employee from the sales per employee. Table 3.8 illustrates the findings.

Table 3.8: Value per employee for MTN

	2007	2008	2009	2010	2011
Sales/Employee	R 4,916,319	R 6,231,826	R 6,393,683	R 6,435,690	R 6,574,110
Cost/Employee	R 3,259	R 4,097	R 4,632	R 4,516	R 4,185
Value/Employee	**R 4,913,060**	**R 6,227,729**	**R 6,389,051**	**R 6,431,174**	**R 6,569,925**

From Table 3.8 above, it is evident that each employee, on average, is very valuable for the company. In fact, the value has been increasing each year for the past five years. This stresses the importance of employee equity. A further indicator used to determine the value of employees, is by determining the cash flow per employee. This calculated by dividing the yearly net cash flow of the company by the number of employees. Table 3.9 below indicates the net cash flow per employee ratio.

Table 3.9: Net Cash Flow per employee for MTN

	2007	2008	2009	2010	2011
Net Cash Flow	R25,850m	R34,236m	R36,282m	R34,728m	R27,874m
Number of Employees	14878	16452	17509	17820	18540
Net CF/Employee	**R1 737 464**	**R2 080 962**	**R2 072 191**	**R1 948 821**	**R1 503 452**

Source: BFA McGregor (2012b) & MTN (2011c).

From Table 3.9 above, it can be determined that the net cash flow per employee is slightly volatile over the past five years. It is suggested that policies should be reviewed to determine why this is occurring. The fifth sub-indicator of employee equity that will be calculated is the average salaries and wages per employee. This is simply calculated by dividing the total amount of the salaries and wages by the number of employees. Table 3.10 below illustrates the findings.

Table 3.10: Salaries and wages per employee for MTN

	2007	2008	2009	2010	2011
Salaries and wages (Rm)	R 3,379	R 4,776	R 4,793	R 4,683	R 5,441
Number of Employees	14878	16452	17509	17820	18540
S&W/Employee	**R 227,113.86**	**R 290,299.05**	**R 273,744.93**	**R 262,794.61**	**R 293,473.57**

Source: BFA McGregor (2012b) & MTN (2011c).

By examining Table 3.10, it is evident that the annual salaries of MTN are fluctuating significantly. This can be attributed to the changes in the macro-economic cycle. The final sub-indicator that will be calculated is the employee equity ratio. This determines the percentage of the average salaries and wages relative to the average value created per employee. This offers insights into how much employees are compensated relative to the value they are creating for the company. Table 3.11 below illustrates the employee equity ratio.

Table 3.11: Employee equity ratio for MTN

	2007	2008	2009	2010	2011
Value/Employee	R 4,913,060	R 6,227,729	R 6,389,051	R 6,431,174	R 6,569,925
S&W/Employee	R 227,114	R 290,299	R 273,745	R 262,795	R 293,474
Employee equity ratio (%)	**4.62%**	**4.66%**	**4.28%**	**4.09%**	**4.47%**

Source: BFA McGregor (2012b) & MTN (2011c).

The employee equity ratio is the most important ratio when evaluating *Employee Equity.* It offers an indication of how much compensation employees are receiving relative to their value creation for the company. In 2011, MTN had an employee equity ratio of 4,47%. This means that for every R100 the average employee generates, he/she earns R4,47. Can this be considered as equitable? It is of the opinion that this is perhaps too low. There are understandably a great amount of factors that ought to be considered, however, it is suggested that the employee equity of MTN could be improved if it strives towards greater long term sustainability. It is argued that if MTN improves its employee equity, it would positively contribute to the level of commitment from the employees. This becomes a ripple effect where employees would increase their efficiency and productivity, and in return achieve greater profits for the company.

3.2.2.3 Social Equity

Social equity is the third indicator of the five E's. It concerns itself with all the social issues that the company participates in. It is argued that a company ought to consider its social environement if it strives towards ultimate sustainability. Companies can interact with its social environment by means of volunteering work, offering free or cheap education and aiding empovered areas. In other words, social equity concerns itself with any social or communial activity that a company chooses to engage in. The two sub-indicators that have been selected are *percentage social investment in net profit* and *social involvement.*

The percentage social investment is a simple ratio that is utilised to determine how much of profits the company is willing to sacrifice for social involvement. It is calculated by dividing the net income by the amount of capital invested in social

projects. Table 3.12 below indicates the percentage social investment in net profit for MTN.

Table 3.12: Percentage social investment in net profit for MTN

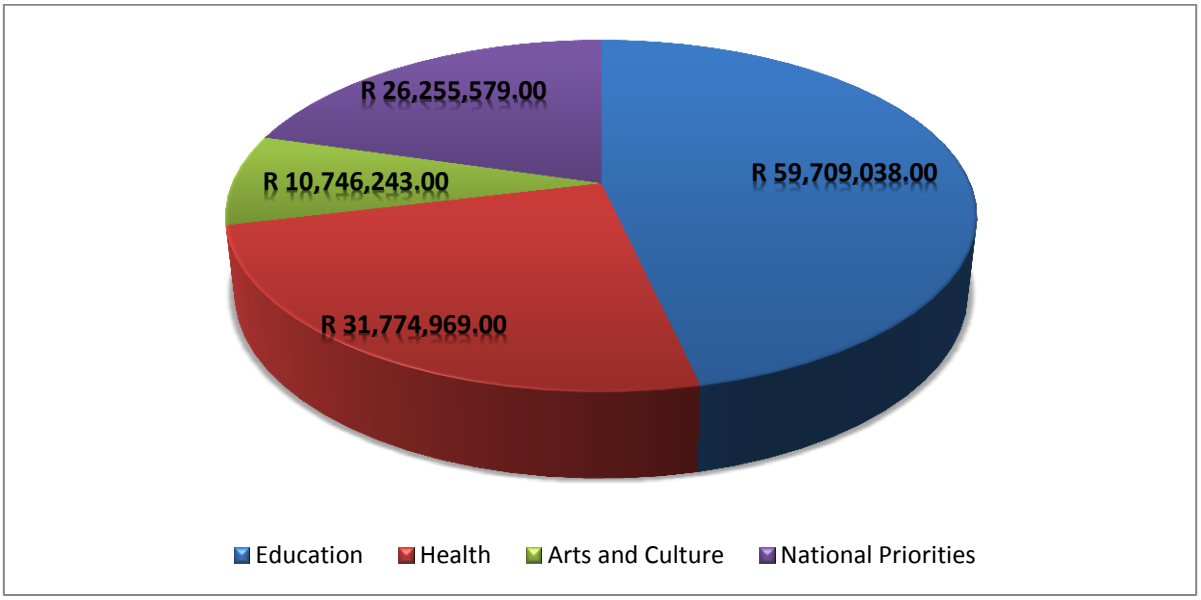
	2010	2011
MTN Foundations	R 154,665,000.00	R 124,970,000.00
Net Profit	R 14,300,000.00	R 20,878,000.00
Percentage Social Investment in Net Profit	**9.25%**	**16.71%**

Source: MTN (2011b:36) & MTN (2011c:114).

In Table 3.12 above, it is seen that MTN spends a great amount of money in social projects. MTN's percentage social investment in net profit increased remarkably from 2010 to 2011. It is evident that MTN is doing a great deal for social development. The next sub-indicator that will be analysed is the company's social involvement. This concerns itself with the projects and initiatives the company spent its capital on.

According to MTN (2011b:29), they engage in various community projects. The Internet Watch Foundation (IWF) is an organisation that monitors internet activity and publish the lists of websites which contain prohibited content. MTN supports the GSM Association, who assists such websites in preventing the publishing of unlawful content such as child abuse (MTN, 2011b). MTN has filter systems in place which monitors and blocks such websites by means of monitoring MMS, SMS and WAP content. MTN promises to set aside 1% of its yearly profit after tax for community development (MTN, 2011b:32). The company focuses on four main areas: education, health, national priorities, and arts and culture. The spending for each area is stipulated in Figure 3.5 below.

Figure 3.5: MTN Community Investment for 2011



Source: Adapted from MTN (2011b:32).

It is clear that MTN is spending a great amount of profits to stimulate surrounding communities. However, it should be noted that its investment in the foundations decreased from R 154 665m in 2010, to R 128 485m in 2011 (MTN, 2011b:32). The company justified this by claiming that socioeconomic unrest influenced the progress of some projects and that projects often run over multiple time periods after which payment is only made, therefore reporting is only done after completion of a project (MTN, 2011b:32). The company further states that it aims increase its spending of education to 80% over the next couple of years (MTN, 2011b:32).

MTN further engages in various other community development programs. One of these programs is the *MTN 21 Days of Y'ello Care Programme.* Once a year, employees of the company engage in community development which is designed around a theme. The theme for 2011 was on improving environmental sustainability consistent with the United Nations General Assembly declaration of 2011 which stated 2011 to be the *"Year of International Forests"* (MTN, 2011b:33). MTN managed to plant more than 66 000 trees in 2011 (MTN, 2011b:33).

It is evident that community development is a priority for MTN. The company engages in various community development projects and invests a great amount of capital for community development.

3.2.2.4 Economy

The forth *E* that will be discussed is the *Economy*. This indicator is used to determine what the company is doing (if anything) to stimulate the economy. It is argued that if a company seeks ultimate sustainability, it has helped to stimulate or improve its surrounding economy. A company is very dependent on the economy, and if companies do not actively try to stimulate the economy, it could stagnate in the long term. The first sub-indicator that will be determined is the yearly change in the amount of employees.

The yearly change in the amount of employees is meant to determine if the company has had a significant increase or decrease in employees. In Table 3.13 below, the yearly change in employees is illustrated from 2007 to 2011.

Table 3.13: Yearly change in the amount of employees for MTN

	2007	2008	2009	2010	2011
Number of Employees	14878	16452	17509	17820	18540
Change in Employees	**5.77%**	**10.58%**	**6.42%**	**1.78%**	**4.04%**

Source: Adapted from McGregor BFA (2012b).

From Table 3.13 above it is evident that MTN has been employing more people every year. However, there has been no significant increase apart from 2008 when MTN increased its staff by 10,58%. The yearly increase in employees is, however, insignificant if it wants to be argued that MTN has deliberately launched projects in order to stimulate job creation in the economy. The next sub-indicator that will be researched is economic involvement. Similar to social involvement, it is a qualitative indicator to determine what the company is actively doing to stimulate the economy.

MTN has set themselves a goal to support the growth of small to medium enterprises up to the point where the companies can be self-sustainable (MTN, 2011b:31). MTN is also actively stimulating various developing economies. MTN launched the *"MTN's Village Phone"* in Nigeria during 2007 in order to help develop, mainly woman-owned, vendors (MTN, 2011b:31). Furthermore, MTN provides more than 53 000 Nigerian retailers with finance material, sales material, and business ideas (MTN, 2011b:31). The company has further started a kinetic and solar energy project in Uganda to help recharge community phones. The company also employed a further

three hundred people in Liberia to assist with subscriber registration. Finally, in Iran, MTN has stimulated the economy by purchasing all of its recharge vouchers as well as all of the SIM cards (MTN, 2011b:31). MTN states in its sustainability report that it has spent R 117 218 389,87 on economic development (MTN, 2011b:31). Economic development is clearly a priority for MTN and the company actively engages in various initiatives in order to stimulate various developing economies.

3.2.2.5 Environment

The last of the five main indicators that will be discussed is the *Environment.* Environmental costs are very difficult to determine. The environmental cost of a product is determined by considering the costs of the suppliers, recyclers, dealers, and customers (Ansari, Bell, Klammer & Lawrence, 1997:7). When all of the members in the value-chain of a product work in partnership to reduce environmental costs, it will be more effective than any one company trying to decrease costs by itself (Ansari *et al.*, 1997:7).

Companies ought to classify its costs into four different categories, namely: *Prevention Costs, Assessment Costs, Control Costs,* and *Failure Costs* (Ansari *et al.*, 1997:9). Prevention costs deal with the costs incurred in order to prevent hazardous materials to damage the environment. Assessment costs are costs such as employee training for environmental awareness practices and assessment activities within the company (Ansari *et al.*, 1997:9). Control costs are the costs incurred in order to handle harmful materials. Failure costs are those costs such as regulatory compliance fines. These indicators are important when determining environmental costs, however, it is suggested that further research is required if it is to be applied to modern organisations. The two sub-indicators that will be used in this study is *environmental involvement* and *carbon footprint per employee*. Environmental involvement is a qualitative sub-indicator that is used to measure the company's environmental impact, whilst carbon footprint per employee is used to determine how much carbon emissions each employee in the company produces on average. First, environmental involvement will be explored.

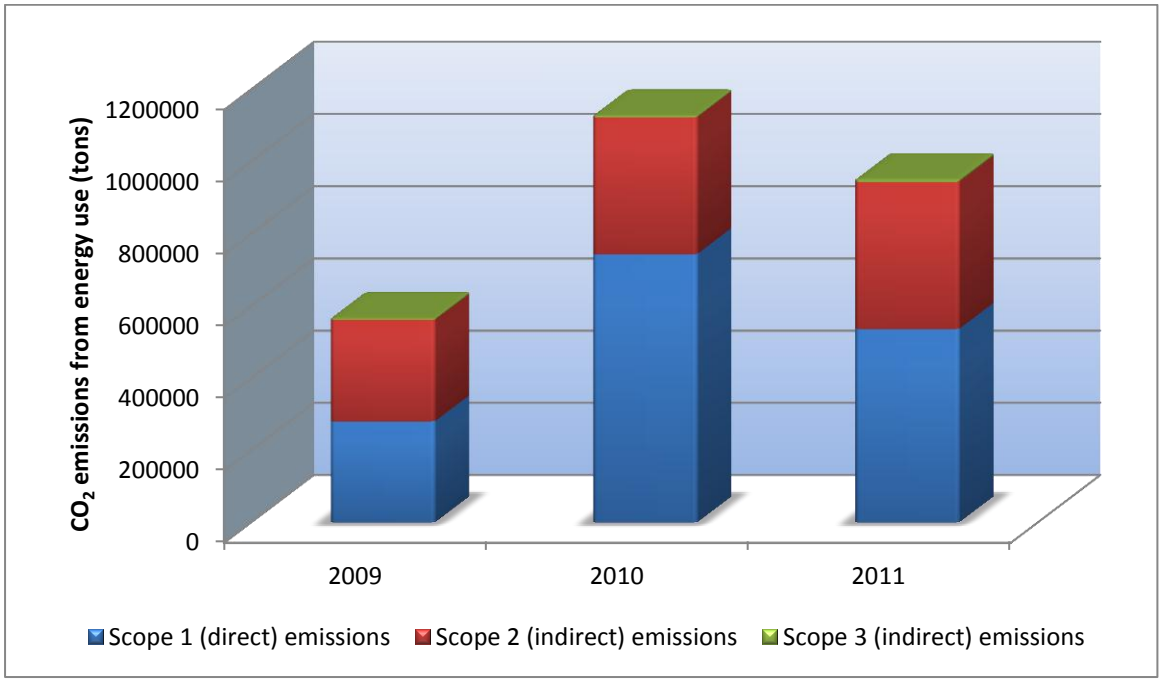
Environmental awareness is imperative for long term sustainability. As the MTN Group CEO, Sifiso Dabengwa said: *"Sustainability is at the core of our business. It is not only about managing risk, although this is a significant aspect. It is also about*

driving innovation and developing our business in a way that creates lasting value for all our stakeholders, inside and outside MTN" (MTN, 2011b:2). The CEO states that MTNs' sustainability programme has three main focus areas. They are: eco-responsibility; sustainable economic value; and advancing sustainable societies. Furthermore, in 2011 approximately 1% of their entire network was powered by alternate energy sources and they reduced their carbon emissions by more than 15% (MTN, 2011b:2). MTNs' clientele reside in emerging countries and economies. Therefore, it is vital to take into account environmental factors considering that climate change has the greatest impact on people living in countries like South Africa, Botswana, Ghana, Nigeria, Iran and Syria.

The fact that climate change occurs disproportionally in countries with emerging economies, was yet again confirmed by the UN Intergovernmental Panel on Climate Change Conference of Parties (COP) 17, which was held in Durban, South Africa at the end of 2011. It is therefore necessary to identify the key business areas that have the greatest deleterious impact on the environment. MTN has determined that their major consumers of energy are their switches and data centres, and radio access networks (MTN, 2011b:23). During 2011, MTN increased the amount of base transceiver stations and switches to improve their calculations with regards to their Scope 1 and Scope 2 carbon and energy calculations (MTN, 2011b:23).

During 2011, MTN accumulated a carbon footprint of 950 564 tons. This is 15,7% less than 2010. The reduction is due to deliberate efforts to convert to alternative energy use and thus minimising carbon emission. However, it should be noted that MTN Zambia was excluded in the latest carbon and energy assessment. It is argued that MTN Zambia contributes less than 8% of the overall carbon footprint and the exclusion is thus not noteworthy (MTN, 2011b:23). This exclusion is questionable and it is believed that it should have been included in the carbon footprint valuation. Figure 3.6 below indicates the carbon footprint of MTN from 2009 to 2011.

Figure 3.6: MTN carbon footprint from 2009 – 2011



Source: Adapted from MTN (2011b:23).

Information and Communications Technologies (ICT's) are utilised to reduce carbon emissions. By 2020, ICT's could contribute to €600 billion of savings or the equivalent of 7,8 $GtCO_2e$ (MTN, 2011b:24). As mentioned earlier, nearly 1% of MTNs' operations are dependent on alternative energy sources. According to their Sustainability Report, some of the methods used to reduce carbon emission is network modernisation, deep-cycle batteries, and better use of free cooling, weather monitoring and other power-saving features of radio apparatus (MTN, 2011b:24-25). MTN has identified their top three carbon climate related opportunities and risks. It is depicted in Table 3.14 below.

Table 3.14: Top three carbon and climate related opportunities and risks to MTN

Opportunities	Use ICT's to help other industries and companies reduce their energy consumption dematerialisation, thererby generating revenues for MTN.
	They can save on carbon tax penalties and access new sources of investment and innovative technology.
	They can save operating costs and improve their energy security position.
Risks	Increasing energy costs and uncertainties.
	Infrastructural performance and security risk due to increased temperature and flooding risk.
	Potential carbon taxes.

Source: Adapted from MTN (2011b:24).

Another significant issue MTN ought to address is the impact of electronic waste. Electronic waste or E-waste (i.e. discarded electrical and electronic devices that are of no value) is a significant problem that modern economy faces. There are a great amount of cellular phones being discarded by consumers which could harm the environment if they are not disposed of properly. MTN has recognised this and in an attempt to counter such potential threats, they have approached Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, and partnered them with a three year contract which started in 2011 (MTN, 2011b:27; MTN, 2011c:77). The aim of this pilot project is to create a link between consumers and manufacturers.

The Greenhouse Gas Protocol is an accounting tool used by companies around the world to quantify, understand and manage greenhouse gas emissions (GHG, 2012). It is divided into direct and indirect GHG emissions. Direct GHG emissions are those carbon emissions produced by the company or entity responsible for reporting. Indirect emissions are those emissions produced as a consequence of the reporting entities' activities, however, it is not controlled or owned by the reporting entity or company. A further distinction is made between Scope 1, Scope 2, and Scope 3 emissions. Scope 1 includes all direct GHG emissions. Scope 2 includes indirect emissions GHG from consumption of purchased forms of energy such as electricity or heat. Scope 3 includes other indirect GHG emissions which include the extraction and production of raw materials. Emissions from vehicles (which are not owned by

the reporting entity) transporting goods and electricity associated activities are examples of such Scope 3 GHG emissions (GHG, 2012). Table 3.15 below presents MTNs' Scope 1, 2, and 3 GHG emissions for 2010 and 2011.

Table 3.15: MTN Scope 1, 2 and 3 GHG emissions (in tons)

Year	Scope 1	Scope 2	Scope 3	Total
2010	743646	378869	4739	1127254
2011	536541	407492	6531	950564
Δ	207105	(28623)	(1792)	176690

Source: Adapted from MTN (2011b:23).

As mentioned earlier, MTNs' carbon emissions have reduced by 15,7% from 2010 to 2011. However, it should be noted that it was only Scope 1 (i.e. direct GHG emissions) that decreased from 2010 to 2011. It should be of some concern to MTN that the Scopes 2 and 3 emissions both increased over the time period. Perhaps MTN should implement strategies to counter Scopes 2 and 3 emissions. Reducing property, plant and equipment coupled with higher levels of productivity could be a strategy to reduce such emissions. MTNs' pilot project with GIZ should contribute to lowering Scope 3 emissions over the next few years.

Total revenue increased from R35 822m (2010) to R38 597m (2011). This is a 7,7% increase in spite of an overall decrease in CO_2 emissions. There is obviously a great amount of variables which have influenced the increase in profits, however, it should be noted that it is possible to increase revenues regardless of spending great amounts of capital on environmentally friendly initiatives. MTN attributed the increase in revenue to the fact that there was a strong growth in data revenue (MTN, 2011c:39). Currently MTN is completing its 2 MW tri-generation plan in Johannesburg and a 4 MW site in Pretoria in order to improve its business activities (MTN, 2011c:39).

The second sub-indicator that will be determined is the carbon footprint per employee. The carbon footprint of a company is difficult to calculate accurately, however, MTN calculated its total carbon footprint for 2011 as 950 564 metric tons of CO_2 emissions (MTN, 2011b:23). Consequently, the carbon footprint per employee

for MTN in 2011 was 51,27 metric tons of CO_2 emissions. This is very high relative to the average South African's carbon footprint. According to the United Nations Statistics Division (2010), the average South African produces approximately 8,8 metric tons of CO_2 emissions per annum. It should be remembered that you cannot compare an individual to an enormous organisation such as MTN, however, it is a good indicator of how much carbon emissions the company is actually producing. By comparing MTN with Sasol, a clearer comparison can be drawn.

According to the most recent rankings, MTN is the 4th greenest company in South Africa, and 166th in the world (Newsweek, 2012a). Each company is evaluated based on three variables: Environmental Disclosure Score, Environmental Management Score, and an Environmental Impact Score (Newsweek, 2012b). These scores are weighted 10%, 45%, and 45% respectively, to obtain a final an overall Green Score out of 100. The Environmental Disclosure Score considers the disclosure of the environmental impact companies communicate through its financial statements. The Environmental Management Score focuses on how companies manage its environmental impact by means of policies, initiatives, projects, certifications and so forth. The Environmental Impact Score is used to determine the impact a company has on the environment. Table 3.16 below states the Green Score for MTN.

Table 3.16: MTN Green Score

Company	World Ranking	Industry Ranking	Impact	Management	Disclosure	Green Score	2011 Green Score
MTN	166th	17th	71%	53%	74.1%	62.2%	64.5%

Source: Adapted from Newsweek (2012a).

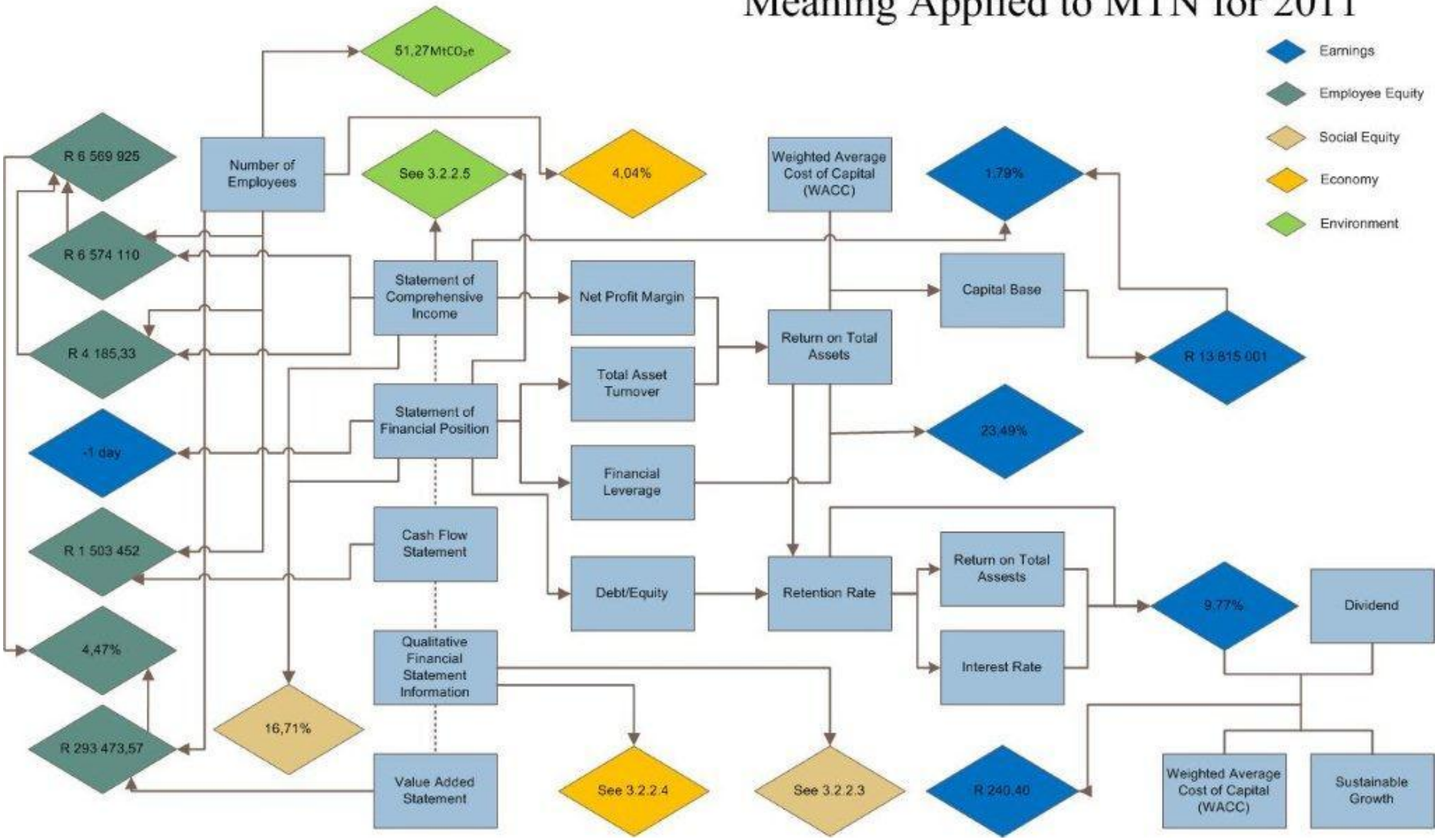
From Table 3.16 above, it is evident that MTN's management of environmental issues is its biggest concern. MTN is placed favourably in South Africa and the world, however, the company ought to better manage its environmental impact and launch more initiatives and projects to minimise its impact.

3.2.3 Conclusion

The MTN group clearly sees environmental change in a very serious light and have implemented governance structures and policies to stimulate ethical and socially acceptable behaviour. They implemented a Social and Ethics Committee and it seems that they are implementing sound corporate governance structures. However, there is some concern with regard to the neutrality of the board considering that the entire committee concurrently serves on the Risk Management, Compliance and Corporate Governance Board. MTN stress the fact that they comply with the King III report and the Companies Act throughout their financial statements.

MTN CEO, Sifiso Dabenga, places a high premium on sustainability and recognises the fact that the countries they operate in require unique solutions to challenging and diverse problems. MTN set clear and realistic goals with regard to moving to a 'greener' economy. They have sound long-term sustainability initiatives, impacting various operations within and outside the company. From the sustainability reports, it was evident that MTN has experienced a reduction in overall carbon emissions, however, Scope 2 and 3 emissions are still a worrisome factor. E-waste influences the environment greatly, and was identified by MTN as a vocal point. Partnered with GIZ, MTN is currently engaged in pilot projects to help minimise e-waste. Figure 3.7 on the following page illustrates The Spiral of Relational Meaning model when applied to MTN for 2011.

Figure 3.7: The Spiral of Relational Meaning Applied to MTN for 2011



MTN has produced satisfactory financial results which is complemented by a 15,7% reduction in carbon emissions and a return on equity of 23,49% for the 2011 financial year. MTN initiated environmentally friendly initiatives with confidence and delivered pleasing revenues. Even though MTN clearly indicates that the environment is of grave importance throughout their financial statements, they often resemble a company who only want to comply with environmental regulations and legislation, but do not appear to be the trendsetters when it comes to managing such issues. It is suggested that MTN should push the limitations of 'greener' business practices within emerging economies even further with more innovative and economically sustainable initiatives.

It is debatable if the employee equity of MTN is reasonable. It is suggested that employees are compensated more, relative to the revenue of the company, considering the amount of value they add to the organisation. MTN has experienced an annual increase in employees and seem to actively pursue economic initiatives to stimulate the economy. By applying The Spiral of Relational Meaning to MTN, it was concluded that the company has sound earnings with a satisfying predicted growth rate. The company's employee equity could be improved in order to compensate employees more for the value they add to the organisation. MTN engages in various social initiatives and projects to help struggling communities in various countries. Furthermore, MTN is actively engaging in various initiatives in order to stimulate economic growth. One of the most crucial projects is the MTN Business' MTN4SME project which supports a great number of small to medium sized businesses (MTN, 2011b:31). Finally, MTN has taken great strides to limit its carbon footprint and environmental impact, however, it is suggested that the company invests even more in the environment in order to strive towards greater long-term sustainability.

3.3 SASOL LIMITED

3.3.1 Background

Sasol Limited (hereafter Sasol), is a South African company involved in liquid fuels, gas, chemicals and energy (Sasol, 2009a). Sasol's name is derived from Afrikaans: *"Suid-Afrikaanse Steenkool en Olie".* They use the *Fischer-Tropsch process* to convert coal and natural gas to petrol and diesel. They produce the largest amount of synthetic fuels in the world and they are one of the largest corporate taxpayers in

South Africa (Sasol, 2011a:3-4). The company contributes substantially to the country's GDP, by employing more than 28 000 people and creating more than 200 000 indirect jobs. For the financial year ending June 2011, Sasol generated a turnover of R142 436 million and controlled R88 111 million of total assets (Sasol, 2011b:243-244; Sasol, 2011e:3). Some of the strategies they follow to obtain a competitive edge are to: improve their propriety coal-to-liquids and gas-to-liquids technologies; to grow their commercial portfolio; to exploit upstream hydrocarbon prospects; and to optimise their existing business performance (Sasol, 2009b). The corporate governance structure of Sasol will be explained more thoroughly in the next section in order to offer a more in-depth background of the company.

3.3.1.1 Corporate Governance

If a company is pursuing independent assurance, it should allow the corporate governance structure to be scrutinised while concurrently providing a system where the system and performance can be increased (Ackers, 2009:3). Sasol is committed to sound corporate governance structures and claim to pursue the best practices, reaching beyond normal regulatory, legislative or listing requirements (Sasol, 2012a). The company has various committees. The committee that will be focused on in this section is the Sasol Limited Nomination, Governance, Social and Ethics Committee. The committee, serving as a sub-committee of the board of directors, was appointed by Sasol management to monitor the activities of the company and to ensure it is in line with the company policy, mission and vision.

This section will borrow heavily on the Committee's Terms of Reference (Sasol, 2012c). Different areas, applicable to this research, will be mentioned and discussed. Attention will be given to: the Committee's membership; the functions of the Committee; remuneration; and the functions of the Committee in terms of regulation 43(5)(a)-(c) of the Companies act of 2008 (Sasol, 2012c).

The Committee has to consist of at least three independent non-executive directors appointed by the board of directors. It should be noted that all the members do not have to be independent non-executive directors, however, the majority of the Committee will have to be. The chairperson of the board will also be the chairperson of the Committee. Likewise, the company secretary will also be the Committee secretary.

The Committee will decide, at least once per annum, on the appropriateness and effectiveness of the mechanisms and if it still coincides with the developments within the company. Such developments would include changes in environment and corporate governance requirements. The Committee will acutely monitor the ethical conduct of the company, including ensuring top management is aligned with the approved Sasol Code of Ethics. It is also necessary for the Committee to identify and deal with any conflict of interest, such as material or potential material gain. The Committee will continuously review and recommend changes with regard to regulatory and legal matters to the board, after which they will have to report to the Audit Committee, which could influence the financial statements of the company. Furthermore, the Committee is responsible for governing the stakeholder's of Sasol and ensuring their needs are accommodated. The board of directors will determine the remuneration of the members serving on the Committee. The remuneration packages will, however, have to be approved by the shareholders of Sasol before it can be awarded to the respective members.

One of the specific legal and regulatory matters the Committee will have to consider is the Companies Act of 2008. The company underlines the importance of being a *good corporate citizen*. This includes developing communities in which Sasol operates and contribute in terms of donations, charitable giving or sponsorship. A further vocal point in the Companies Act of 2008 is that the company should consider the environment, public safety, health and the impact of the company's activities. Sasol also associates itself with The Ten Principles set out by the UN Global Compact in terms of labour, human rights, anti-corruption and the environment (Sasol, 2012c:6).

The three principles which are applicable to this study are principles 7, 8 and 9. According to (Sasol, 2012c:6), these principles are:

> Principle 7: *Businesses should support a precautionary approach to environmental challenges*;
>
> Principle 8: *undertake initiatives to promote greater environmental responsibility; and*

Principle 9: *encourage the development and diffusion of environmentally friendly technologies*.

It is evident that Sasol does take regulatory, legal and social pressure serious with regard to the environment. They are thorough with regard to the requirements they wish to abide by. The aforementioned committee should provide a sound basis for the company to monitor and improve its intangible operations and activities. However, it ought to be noted that the company should perhaps elaborate a bit more on specific issues rather than only briefly mentioning them.

3.3.2 A Qualitative Analytical Study of Sasol Limited by Means of Applying the Spiral of Relational Meaning

3.3.2.1 Earnings

Sasol demonstrated improved financial results from 2010 with an increased turnover for every business cluster over the past financial year. The turnover increased by approximately 16,5%, from R122 256 million in 2010, to R142 436 million for the 2011 financial year (Sasol, 2011e:3). Earnings per share also increased significantly (see Table 3.17 below). According to Sasol (2011e:13) the strong financial results can be attributed to the fact that the company focused on increasing operational efficiency and effectively realising its improvement and growth plans.

Table 3.17: Earning per share for Sasol

	2010	2011	Δ (%)
Basic earnings per share	R 26,68	R 32,97	23,58
Diluted earnings per share	R 26,54	R 32,85	23,78

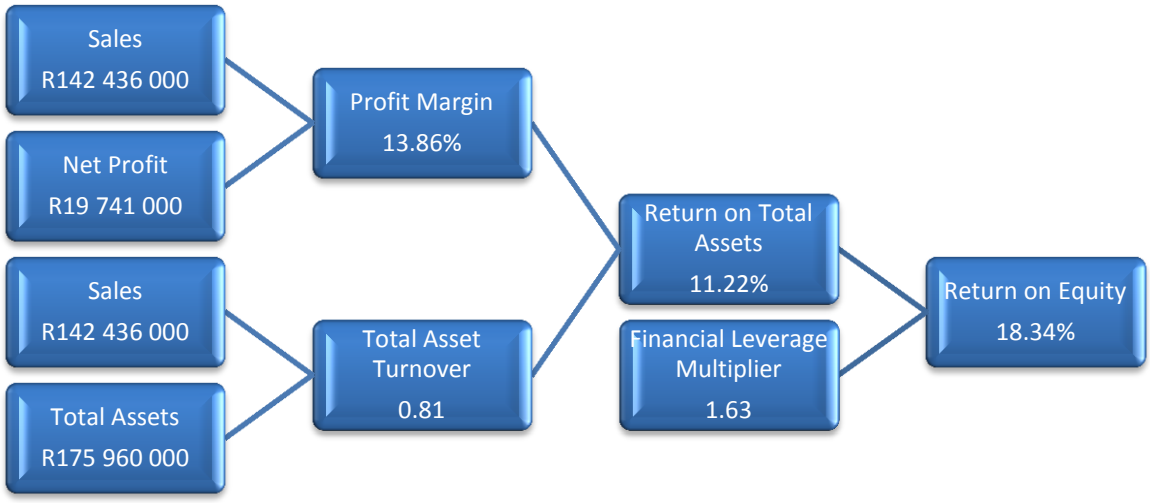
Source: Sasol (2011e:62).

The first sub-indicator of earnings that will be calculated is the DuPont ROE. The DuPont system of analysis is commonly used by managers as a performance measure for a company. As mentioned earlier, the DuPont system of analysis ultimately calculates one figure, namely the return on equity (ROE). The ROE of a company simply states how much return investors receive on the money they have invested within the company. It is thus logical that a high ROE is preferred. The ROE

can be broken down into three separate parts namely, the *operating efficiency*, the *asset use efficiency*, and the *financial leverage* of a company.

First, the *operating efficiency* is determined by the net profit margin. The net profit margin, as calculated previously, is the net profit of a firm divided by the sales. Second, the *asset use efficiency* is determined by the total asset turnover. The total asset turnover is calculated by dividing the sales a firm generated by the total assets of the company. Finally, the *financial leverage* is calculated by dividing the total assets of a company by its equity. After these three elements have been calculated, they are multiplied to derive the overall return on equity. This method of analysis is very useful as it clearly highlights the weaknesses in a company's operations chain. The return on equity for Sasol for 2011 was calculated and is presented in Figure 3.8 below.

Figure 3.8: The current DuPont system of analysis for Sasol



Source: Adapted from McGregor BFA (2012c).

In Figure 3.8 it is seen that Sasol has an attractive return on equity of 18.34%. This would please management and shareholders. It is evident that Sasol does not have excessive debt (similar to MTN), and the main contributor to the return on equity was the favourable return on total assets. The total asset turnover is perhaps an area of the company that could be analysed for possible improvements. Sasol has a great amount of assets relative to its sales which, in effect, restrain the overall ROE. However, it should be noted that Sasol is an industry where a great amount of property, plant and equipment is required to operate the company. The ROE of

Sasol was determined over a period of five years to see if it coincides with the current healthy ROE.

Table 3.18: Historical return on equity for Sasol

Year	2007	2008	2009	2010	2011
Return on Equity	27.64%	29.18%	16.29%	16.83%	18.34%

Source: McGregor BFA (2012c).

From Table 3.18 it is apparent that Sasol has been experiencing relative overall stability in its ROE over the past five years. Management, shareholders and potential investors would be extremely satisfied with the constant high and competitive return on equity for Sasol. The DuPont system of analysis has proven to be useful in determining the performance of the company by means of various perspectives over a time horizon of five years.

The second sub-indicator of earnings that will determine is the cash conversion cycle. As mentioned previously, the CCC is a measure of liquidity. It is calculated by adding the inventory conversion period and receivables conversion period, and subtracting the payables conversion period from the result. The CCC for Sasol is illustrated in Table 3.19 below for the past five financial years.

Table 3.19: Cash Conversion Cycle for Sasol

Turnover Ratios	2007	2008	2009	2010	2011
Receivables (Sales/Avg. Receivables)	6.791031	6.213801	6.723215	6.897182	6.783636
Inventory (COGS/Avg. Inventory)	5.356397	4.32824	5.104709	5.098548	5.171907
Payables (Purchases/Avg. Payables)	4.600468	4.037326	4.31599	3.974452	4.135823
Days Outstanding					
Days Sales Outstanding	53.75	58.74	54.29	52.92	53.81
Days Inventory Outstanding	68.14	84.33	71.50	71.59	70.57
Days Payable Outstanding	79.34	90.41	84.57	91.84	88.25
Cash Conversion Cycle (CCC) in days	**43**	**53**	**42**	**33**	**37**

Source: Adapted from McGregor BFA (2012c).

Sasol's CCC has been relatively stable over the past five years. It should be noted that it is considerably higher than MTN. It is not, however, uncharacteristically high. The CCC is a region of the business Sasol could improve in by implementing stricter payment policies and revising creditor policies. The next sub-indicator that will be

investigated is economic value added (or EVA™). The EVA™ is tool used to determine how much wealth is created by a company. It is determined by subtracting the cost of capital from the company's net profit after tax. Table 3.20 below indicates the EVA™ for Sasol.

Table 3.20: Historical EVA™ for Sasol

	2007	2008	2009	2010	2011
WACC (%)	12.1215	16.1785	15.65	15.8597	14.5462
Return On Capital (%)	20.68	25.63	15.98	17.63	18.2
EVA™	**R8,334,615.20**	**R10,411,821.00**	**R397,765.50**	**R2,303,159.40**	**R5,342,724.00**

Source: McGregor BFA (2012e).

It is evident that Sasol is creating value for its shareholders. Investors will be pleased about the economic value created by the company over the past five years. However, it is yet again inferior to that of MTN. Sustainable growth is the next sub-indicator that will be discussed. According to McGregor BFA (2012c), the sustainable growth for Sasol for 2011 was 8,43%. This is a favourable projected growth rate and would please shareholders. However, it is yet again inferior to that of MTN which is 9,77%. The final sub-indicator of earnings that will be investigated is the Gordon model, or the Dividend Discount Model (DDM). As discussed earlier, the DDM is used to determine a current value for a stock by discounting potential future dividends by the difference between the cost of capital and estimated growth of the company. Similarly to the calculation of MTN's intrinsic value, the R157 bond will be used for the RFR, and the market return is based on the JSE All Share yield, which is currently 12,77%. The intrinsic value is calculated as follow:

$$P_0 = \frac{[13.00 \times (1.0843)]}{0.1483 - 0.0843}$$

$$\therefore P_0 \approx R220.28$$

The closing share price for Sasol for the 2011 financial year was R355,98 (Sasol, 2011e:2). By comparing the 2011 closing share price to the calculated intrinsic value, it is evident that Sasol's shares are greatly overvalued by approximately R135,70 (i.e. R355,98 – R220,28). This implicates that the shares are worth a good deal less than what they are trading at. This would be a worrisome factor for shareholders. If

compared to MTN, Sasol was outperformed again. MTN's shares were undervalued (see 3.2.2.1) which would lead to a recommendation to buy shares, however, considering that Sasol's shares are greatly overvalued, it is suggested to sell the shares based on the calculated intrinsic value. The EVA Momentum for Sasol was calculated for the 2011 financial year as follow:

$$EVA\ Momentum_{2011} = \left(\frac{EVA_{T_1} - EVA_{T_0}}{Sales_{T_0}}\right)(100)$$

$$EVA\ Momentum_{2011} = \left(\frac{R\ 5\ 342\ 724{,}00 - R\ 2\ 303\ 159{,}40}{R\ 122\ 256\ 000}\right)(100)$$

$$EVA\ Momentum_{2011} \approx 2{,}49\%$$

The EVA Momentum for Sasol was calculated as 2,49% for the 2011 financial year. This indicates that Sasol increased its economic profit by 2,49% from 2010 to 2011. This is higher and more advantageous than the EVA Momentum which was calculated as 1,78% for 2011. Sasol will aim to increase this ratio in coming years.

3.3.2.2 Employee Equity

The employee equity is the next *E* of the five E's of sustainability or The Spiral of Relational Meaning. There are five sub-indicators that will be calculated in order to determine what the current state of Sasol's employee equity is, based on selected variables. These indicators are: sales per employee, cost per employee, value per employee, net cash flow per employee, salaries and wages per employee, and finally, the employee equity ratio. First, the sales per employee will be calculated. The sales per employee offer an indication of how much sales each employee generates on average. It is simply calculated by dividing the amount of sales for a specific year, by the number of employees the company had at the same time. Table 3.21 below indicates the sales per employee for Sasol over the past five years.

Table 3.21: Sales per employee for Sasol

Year	2007	2008	2009	2010	2011
Sales per employee	R 3 079 944	R 3 829 964	R 4 109 110	R 3 667 057	R 4 225 584

Source: McGregor BFA (2012c).

Sasol has pleasing sales per employee which has been relatively constant over the past five years. However, if compared to MTN, MTN outperformed Sasol in this ratio. MTN has produced significantly more sales per employee, than Sasol. The second sub-indicator that will be explored is the cost per employee. This offers an indication of how much operating costs per employee is accrued over each financial year. Table 3.22 below offers the cost per employee for Sasol.

Table 3.22: Cost per employee for Sasol

	2007	2008	2009	2010	2011
COGS	R59,997,000	R74,634,000	R88,508,000	R79,183,000	R90,467,000
Number of Employees	31860	33928	33544	33339	33708
Cost/Employee	**R 1,883.15**	**R 2,199.78**	**R 2,638.56**	**R 2,375.09**	**R 2,683.84**

Source: McGregor BFA (2012c).

Sasol experienced relatively stable costs per employee ratios over the past years. When compared to MTN, Sasol has lower ratios and thus more attractive ratios than MTN. Management and shareholders would be pleased about the fact that there has been no significant increase in the cost per employee for Sasol over the past five years. The third sub-indicator that will be calculated is the value per employee relative to the company's operations. It is calculated by subtracting the cost per employee from the sales per employee. Table 3.23 below indicates the value per employee for Sasol

Table 3.23: Value per employee for Sasol

	2007	2008	2009	2010	2011
Sales/Employee	R 3,079,944	R 3,829,963	R 4,109,110	R 3,667,057	R 4,225,584
Cost/Employee	R 1,883	R 2,200	R 2,639	R 2,375	R 2,684
Value/Employee	**R 3,078,060**	**R 3,827,764**	**R 4,106,472**	**R 3,664,682**	**R 4,222,901**

Source: McGregor BFA (2012c).

From Table 3.23 above, it is evident that each employee is extremely valuable to Sasol. The value per employee has been increasing over the past couple of years, with the exception of 2010. Even though the value per employee is impressive, it is still lower than that of MTN over the past five years. The forth indicator that will be determined is the net cash flow per employee. By utilising the cash flow statements of the company, the average net cash flow per employee can be determined. Table 3.24 below indicates the net cash flow per employee over the past five years.

Table 3.24: Net Cash Flow per employee for Sasol

	2010	2011
Net Cash Flow	R16,592,000,000	R 17,810,000,000
Number of Employees	33339	33708
Net CF/Employee	**R 497,675.40**	**R 528,361.22**

Source: Adapted from Sasol (2011e:64)

Sasol's net cash flow per employee is considerably lower than that of MTN. However, it has been relatively stable over the past two years and is an indication that Sasol's cash net cash flow is healthy. The fifth sub-indicator that will be calculated is the salaries and wages per employee. This is a simple method to determine what is the average salary or wage of an employee. Table 3.25 below indicates the salaries and wages per employee.

Table 3.25: Salaries and wages per employee for Sasol

	2007	2008	2009	2010	2011
Salaries and wages	R 11 695m	R 14 443m	R 17 532m	R 17 546m	R 18 756m
Number of Employees	31860	33928	33544	33339	33708
S&W/Employee	**R 367 074**	**R 425 695**	**R 522 656**	**R 526 290**	**R 556 425**

Source: Adapted from McGregor BFA (2012c).

From Table 3.25 above, it is apparent that Sasol's average salary has been increasing steadily over the past five years. Sasol's salaries and wages are significantly higher than that of MTN. It is evident that Sasol offer greater remuneration packages. One of the reasons is due to the fact that many of Sasol's activities require highly skilled labour, which in return requires higher salaries and wages. The final sub-indicator of *earnings* that will be calculated is the employee equity ratio. This ratio was designed to determine to what extent employees are compensated for the value they create. It is thus a measure of employee equity. It is calculated by dividing the salaries and wages per employee (see above), by the value per employee (also calculated above). Table 3.26 below indicates the employee equity ratio for Sasol over the past five years.

Table 3.26: Employee equity ratio for Sasol

	2007	2008	2009	2010	2011
Value/Employee	R 3078060	R 3827764	R 4106472	R 3664682	R 4222901
S&W/Employee	R 367075	R 425696	R 522657	R 526291	R 556426
Employee equity ratio(%)	**11.93%**	**11.12%**	**12.73%**	**14.36%**	**13.18%**

Source: Adapted from McGregor BFA (2012c).

The employee equity ratio for Sasol is much more attractive than the employee equity ratio of MTN. The employee equity ratio is more than double than that of MTN. It was suggested earlier that MTN ought to increase its employee compensation considering the amount of value the average employee generates for the company. Sasol is a great example that a higher employee equity ratio is feasible and economically sustainable.

3.3.2.3 Social Equity

The third indicator of the five E's of sustainability that will be explored, is social equity. Social equity concerns itself with what initiatives a company has taken in order to stimulate and improve the surrounding communities. Two sub-indicators will be calculated and explored. First, the percentage social investment in net profit will be calculated. Second, the social involvement of Sasol will be determined.

Sasol has a Corporate Social Investment (CSI) programme in place to support the sustainable development of communities (Sasol, 2011e:122-123). Sasol invested R 184 000 000 in 2011 in community development (Sasol, 2011e:122). Therefore the percentage social investment in net profit for 2011 can be calculated as follow:

$$Percentage\ social\ investment\ in\ net\ profit_{2011} = \frac{19\ 741\ 000}{184\ 000\ 000}(100)$$

$$Percentage\ social\ investment\ in\ net\ profit_{2011} = 10.73\%$$

Sasol invests substantially to social development by spending great amounts of capital in the community. However, this is low compared to MTN. It is argued that Sasol can improve in this regard by expanding its CSI programme even further. The second sub-indicator that will be explored is social involvement. This is a qualitative indicator that relies on the company's social development disclosure.

Sasol actively engages in initiatives to reduce poverty and offer commitment beyond economic support (Sasol, 2011e:122). From the R 184 million spent on CSI, 50% was invested in education (with a specific focus on technology and science). The company invested 20% of the funds on health and welfare (with a focus on HIV/AIDS). A further 5% was invested in sport, culture and arts development in order to stimulate the quality of life of underprivileged communities (Sasol, 2011e:122). Sasol also participates in the Inzalo Foundation which focuses on skill development for black South Africans. Some of the CSI Sasol engages in, is listed below:

1. *Osizweni:* This project is aimed at developing the education of school children by means of workshops and a science week. Science, mathematics and technology has been selected as the focus of the science week which underprivileged children attended (Sasol, 2012d).

2. *Boitjhorisong Resource Centre in Sasolburg:* It is a centre that also contributes to the education of school children. The director of education in the district, Mr. H M Mthombeni, was quoted saying that this project contributes greatly to education in the area (Sasol, 2012e).

3. *Sasol Techno X:* This is an exhibition initiative that offer tours, workshops, displays and activities for learners and students alike (Sasol, 2012f).

4. *Stop Gender Violence Helpline:* This is a toll-free helpline which provide free counselling and community support (Investoreport, 2012).

5. *Broken Dreams:* This is an initiative that provides life skill development programmes at Gauteng schools (Investoreport, 2012).

These are only five of Sasol's sustainability initiatives (Investoreport, 2012). Sasol engages in a huge number of community development projects and clearly realises the importance of social involvement.

3.3.2.4 Economy

The fourth indicator that will be discussed is the economy and what Sasol is doing to stimulate the economy. Similarly to social equity, there are two indicators that will be determined. First, the yearly change in the amount of employees will be calculated.

Second, the economic involvement of Sasol will be investigated. Table 3.27 below offers the yearly change in employees for Sasol.

Table 3.27: Yearly change in the amount of employees for Sasol

	2007	2008	2009	2010	2011
Number of Employees	31860	33928	33544	33339	33708
Change in Employees (%)	**1.27%**	**6.49%**	**-1.13%**	**-0.61%**	**1.11%**

Source: McGregor BFA (2012c).

There does not seem to be consistency in the number of employees Sasol has every year. This is worrying due to the fact that it points to poor job security of employees, and second, that the company is not actively participating in better utilising the workforce. The second sub-indicator that will be examined is economic involvement. Economic involvement is also a qualitative factor that is used to determine what a company is actively doing to support or stimulate the economy. Contrary to the yearly change in the amount of employees, Sasol stated in its integrated report that it has invested 20% of its CSI budget in job creation for marginalised groups such as children and women (Sasol, 2011e:122). This can be attributed to the fact that Sasol's job creation projects target job prospects outside of Sasol. Some of the job creation projects are:

1. *The Beekeeping Project:* This partnership between Sasol, the Agriculture Research Council, and Mondi, offers predominantly women the opportunity to be trained in beekeeping in order to become self-sustainable (Investoreport, 2012).

2. *The Sasol Bird Guide Development programme:* This programme offers unskilled and unemployed individuals the opportunity to be trained as a bird guide (Investoreport, 2012).

3. *Work readiness and entrepreneurship development:* Sasol is in partnership with Junior Achievement South Africa, in order to teach the youth entrepreneurial skills (Investoreport, 2012).

It is evident that Sasol does a great deal to create jobs however, it is still debateable if they are doing enough. A company the size of Sasol ought to utilise a great

amount of resources to stimulate the economy considering that they are one of the biggest corporate taxpayers in South Africa.

3.3.2.5 Environment

The final main indicator that will be explored is the environment. It is divided into two sub-indicators: carbon foot print per employee, and the company's environmental involvement. Sasol's total emissions for 2011 were 74 778 kilotons CO_2e (Sasol, 2011f:52). This total comprises of Scope 1 emissions, which were 65 470 kilotons CO_2e, and Scope 2 emissions, which were 9 308 kilotons CO_2e for 2011 (Sasol, 2011f:52). This is an extremely large amount of CO_2e emissions, however, it is in line with competitors in the industry such as Royal Dutch Shell who had carbon emissions of approximately 75 000 kilotons CO_2e in 2011 (Royal Dutch Shell, 2011:28).

According to McGregor BFA (2012c) Sasol had 33 708 employees in 2011. Therefore, the carbon footprint per employee for Sasol can be calculated as 2,22 kilotons CO_2e (i.e. 74 778 kilotons CO_2e / 33 708). This is extremely high if compared to MTN who has 51,27 metric tons of CO_2e (or 0,05127 kilotons CO_2e) per employee. It ought to be noted that the Scope 3 emissions were not included in the calculation of Sasol's carbon footprint. However, it is still exceptionally high compared to Shell who almost have three times more employees that Sasol with the same level of carbon footprint. It can therefore be concluded that the carbon footprint per employee for Sasol is not only high, but also higher than one of its greatest competitors.

The second sub-indicator that will be discussed is the environmental involvement of Sasol. It is inevitable that a company such as Sasol will become the subject of much scrutiny considering that in South Africa the transport, energy and industrial sectors account for more than 90% of the greenhouse gas emissions (Sasol, 2011c:3). During the COP 17 discussion held in Durban near the end of 2011 Sasol CEO David Constable, delivered speeches on three different occasions. During his speech on 5 December 2011, Constable identified three observations where he argues the importance of companies with regard to climate change (Sasol, 2011c:3-4). His first observation is that companies are too slow to react to policy developments and changes. Second, he states that because companies are so slow

to react to policy changes, they should take the lead in proposing climate change plans and strategies.

Companies often criticise policy changes, however, companies should rather apply their expert resources to work in tandem with policymakers. Finally, companies should work together with government when addressing issues such as climate change which has a fundamental impact on our natural environment (Sasol, 2011c:3-5). Some argue that if a company truly values integrity and wishes to continue being profitable, it has a duty to influence the economic structure within which economic competition is rooted in order to make ethical behaviour conventional, in principle, for others (Höver, 2004:122). He further argues that if this is not achieved, corporate ethical behaviour is likely to become an ideal rather than actuality.

Unfortunately, the reality is that South Africa's economy was built on coal as an energy source, with coal producing some of the highest carbon emissions of all energy resources (Sasol, 2011a:4). More than 70% of South Africa's energy consumption is attributed to coal. As Constable (Sasol, 2011a:4) mentions, this highlights our immense reserves of coal, while simultaneously pointing out our lack of gas and oil reserves. Switching to solar power is always an option considering the suitability of the South African climate; however, solar power technology is not yet economically viable and is currently not a suitable substitute for fossil fuels. It is thus evident that the process to implement environmentally friendly practises is a long route which will take years to understand and accomplish.

Sasol believes that emissions can be reduced by switching from coal to gas and to focus on energy efficiency (Sasol, 2011a:5). This is a realistic target for Sasol, considering that gas does hold various benefits. First, gas is a cleaner resource when burnt. Second, gas can be combined with other natural resources (such as wind) to generate energy. Third, by utilising gas the coal reserves of the country will be preserved longer. Finally, and probably most importantly, gas emits 40% less carbon emissions than coal for the same level of energy output.

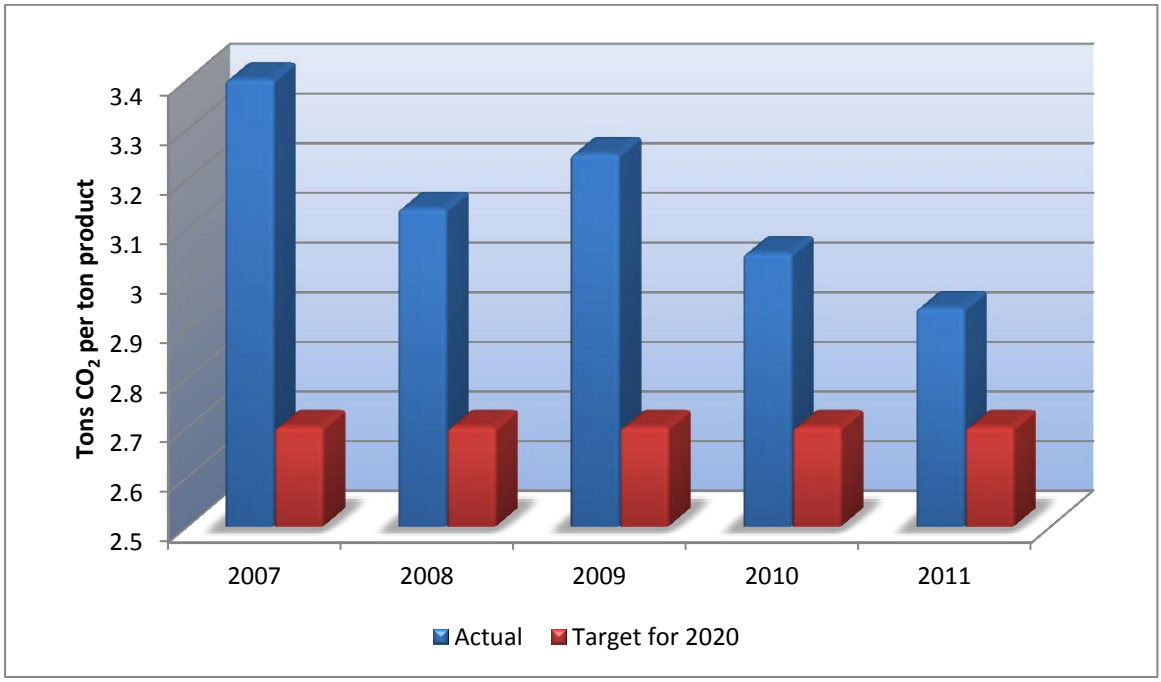
By implementing a combination of technological innovation and partnerships, Sasol has reduced its greenhouse gas emissions by 12% from 2004 to 2011 (Sasol, 2011a:5-6; Sasol, 2011d:4). This is a total reduction of 10 million tons. This is also

partly attributed to the fact that Sasol has invested over R12 billion in a natural gas conversion project since 1999 (Sasol, 2011a:6). The project provides gas through a pipeline from Mozambique to activities in Sasolburg and Secunda. The Sasolburg plant used to work with coal, however, the project ensured that gas is utilised as the primary feedstock for its operations. Second, the project enabled the Secunda plant to utilise gas as a supplementary feedstock to coal. These initiatives are a step in the right direction.

The communities surrounding the pipeline suffer from severe poverty. They rely on subsistence farming and agriculture for survival. Sasol has invested considerably into those communities. Sasol has contributed US$ 5 million to a social development project in Mozambique and contributed significantly to the community by building schools and clinics, sponsoring a care facility for disabled people, and they even sunk boreholes to provide communities with fresh drinking water (Sasol, 2011a:6). Sasol is also exploring opportunities such as utilising shale gas under the Karoo and coal-bed methane in Botswana, in order to limit greenhouse gas emissions.

Sasol has reached some significant milestones with regard to climate change. First, in July 2010 Sasol established an agreement with the Norwegian company Gassnova SF. This arrangement permits Sasol to take part in the European CO_2 Technology Centre Mongstad. They are constructing a carbon capture plant which should be in operation during 2012 (Sasol, 2011e:57). Second, Sasol has engaged in various research initiatives related to low-carbon electricity and clean energy projects. This aims to generate significant amounts of electricity from natural gas. Furthermore, they are contributing to electricity generation by means of concentrated solar power facilities (Sasol, 2011e:57).

Figure 3.9: Greenhouse Emission Intensity



Source: Adapted from Sasol (2011e:3).

Sasol has set the goal of reducing their emission intensity in all of their operations by 15% by 2020, based on a 2005 baseline (Sasol, 2011e:3,127). Figure 3.9 above presents the current emissions for the past five years relative to the 2020 target. As seen in the figure, Sasol is not close to their goal. The target would seem ambitious or optimistic, relative to the actual 2007 emissions, however, it is noteworthy that there is a steady decline in emissions for the past two years. This is an indication of sound climate change policies and strategies. By decreasing emissions and increasing energy efficiency, Sasol yields favourable exergy. Sasol aims to improve their energy efficiency for South African utilities by 15% per unit of production by 2015 (Sasol, 2011e:3).

Sasol experienced an increase in their global absolute GHG emissions from 75,4 million tons (in CO_2 equivalent) in 2010, to 75,0 million tons in 2011 (Sasol, 2011e:128-129). Before comparing Sasol's Scope 1 and Scope 2 emissions, it is necessary to consider the variables the company utilised in their calculations. Similar to MTN, Sasol uses the Greenhouse Gas Protocol of the World Business Council for Sustainable Development and the World Resources Institute to calculate their GHG emissions (Sasol, 2011e:128). The abovementioned emission figures include Scope

1 and Scope 2 emissions. The emissions considered were generated directly from business processes and their tanker fleets (i.e. Scope 1 emissions). Second, the calculation includes indirect emissions from Sasol's electricity imports and the transportation of goods and services (i.e. Scope 2 emissions). Furthermore, Sasol includes emissions for all activities under their operational control (Sasol, 2011e:128). Table 3.28 below offers a breakdown of the Scope 1 and Scope 2 emissions for the past two years.

Table 3.28: Sasol Scope 1 and Scope 2 GHG emissions (in kilotons CO_2e)

Sasol facilities by country	Scope 1 emissions		Scope 2 emissions	
	2011	2010	2011	2010
South Africa	61 374	61 065	8 895	10 439
Germany	604	538	126	136
United States	823	854	239	236
Others (Oryx GTL included 2010)	2 648	1 709	127	5
Total	**65 449**	**64 166**	**9 387**	**10 816**

Source: Adapted from Sasol (2011e:128).

The increase in emissions from 2010 to 2011 should be seen in the context that Sasol has increased their production levels over the time period in question. Table 3.28 above indicates that the emission levels are fairly constant, however, relative to the increasing production levels Sasol is making progress with regard to their target emissions. Newsweek rated Sasol as the 423rd 'greenest' company in the world, 4th in South Africa, and 23rd in its industry (Newsweek, 2012a). Newsweek rated the top 500 companies in the world in terms of their environmental impact, environmental management, and environmental disclosure with each score out of one hundred. By combining the three scores a 'green score' was determined. Newsweek rated Sasol's environmental impact 19,5/100; environmental management 67/100; and environmental disclosure 99,9/100 (Newsweek, 2012a). As argued in this chapter, Sasol has an enormous environmental impact which is supported by Newsweek's (2012a) findings. Even though Sasol has made great strides in reducing its

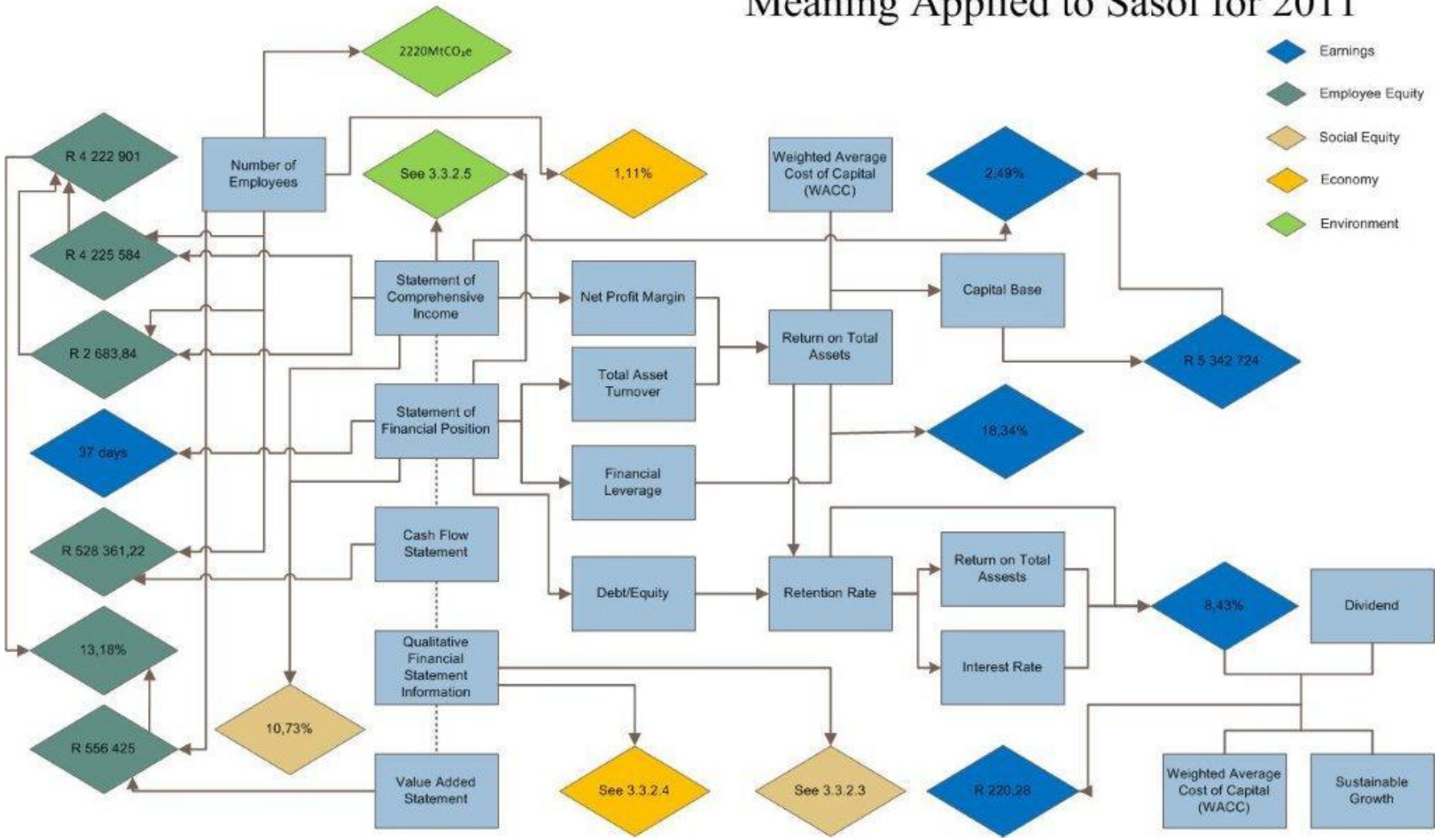
environmental impact, it clearly still has a long way to go if it strives towards long term sustainability.

3.3.3 Conclusion

A company in the energy sector will always be the centre of attention with regard to climate change. Sasol is an enormous company with facilities in various countries worldwide. Their carbon footprint is substantial and as mentioned earlier, the transport, industrial and energy sectors are responsible for more than 90% of the greenhouse gas emissions in South Africa. Sasol CEO, David Constable, clearly vocalised the company's concern with regard to climate change and feels they should lead the way to a cleaner environment. Sasol is clearly serious about developing 'greener' technology and increasing efficiency levels in order to limit harmful waste. Furthermore, they invest in the community and the environment. Sasol is even involved in a project to protect and conserve wildlife in South Africa by means of volunteerism (Sasol, 2012b).

Sasol has implemented strong corporate governance structures. The company established the Nomination, Governance, Social and Ethics Committee, which is responsible for monitoring the company's ethical behaviour and social interaction. Such a committee is vital to any organisation, however, Sasol would perhaps be better to disclose the activities of the Committee. With a company like Sasol which is constantly in the limelight, it is recommended that they offer more details of their environmental projects and make environmental change and development one of the key qualities of the company. Figure 3.10 on the following page is an illustration of The Spiral of Relational Meaning when it's applied to Sasol for 2011.

Figure 3.10: The Spiral of Relational Meaning Applied to Sasol for 2011



Sasol has proven to have sound financial results over the past five years and seem to be in a healthy state. Furthermore, the company is in line with the King III report and pays a great deal of attention to transformation, human capital, social capital, safety, health, and environmental issues. A company can only be successful in such matters if the organisation is run by sound and effective leadership. The CEO of Sasol clearly indicated on various occasions the important role the environment plays within the business world. However, even though Sasol states the importance of the environment, the targets they set themselves are still debateable. It is not clear if they are optimistic, pessimistic, or realistic, nevertheless, in the long-term they will have to depend to a great extent on renewable energy sources if they wish to be operationally sustainable, economically viable, and socially acceptable. The next chapter will summarise the findings of the study and offer a few possible recommendations of how the companies can improve its current business.

4 FINDINGS AND RECOMMENDATIONS

The aim of this research was to determine how significant different stakeholders are to the existence of an organisation or entity, considering that a great amount of companies and financial managers are still irresolute or uncertain on the matter. A thorough literature review was conducted in order to make a strong argument for the study. It was determined that considering one's natural environment and other stakeholders is imperative to the survival and long-term sustainability of any organisation. There is a definitive emphasis placed on the importance of creating a model where a company can be evaluated based on its relationship with the various stakeholders.

Throughout this dissertation the importance of relationships has been discussed (similar to systems theory). It was argued that a company cannot survive if it isolates itself from its surroundings and make profits its sole objective. The need for a more comprehensive model to evaluate these relationships was evident. Research was done on the DuPont system of analysis and how the model can be modified or expanded in order to accommodate more variables which will offer a better representation of the relationships a company has with its various stakeholders.

Five elements were determined in order to serve as indicators which a company can use as a measurement of sustainability. The commonly known three E's or three pillars of sustainability are well known. They are social equity, economy, and environment. It was suggested that this model ought to be expanded in order to accommodate two more E's: employee equity and earnings. This model was thus expanded to become the five E's of sustainability, or the five pillars of sustainability.

It is argued that the five E's can be viewed as a spiral. Earnings are at the heart of the spiral. It is the fundamental imperative for sustainability – if a company does not realise profits, it will not be sustainable. Following earnings is employee equity. This element of the model suggests that if a company is striving to ultimate sustainability, it will have to look after its employees and treat them fairly. If a company fails to accommodate the needs of its employees, the company as a whole would not be able to sustain itself. The next E is social equity. It is believed that a company ought to engage in community development if it wants to be sustainable. It is imperative

that companies attend to its relationship with its surrounding communities seeing that the company is ultimately dependent on communities to ensure its survival. The fourth E or indicator is the economy. Without a healthy and stable economy, companies cannot survive. Therefore, it is essential for companies to deliberately try and stimulate the economy which in return will aid the company to reach greater sustainability. The final E of the model is the environment. It is a vital element that needs to be considered for a company's survival, however, it is also one of the most difficult to accommodate. It is argued that if companies do not attempt to remedy its environmental impact, ultimately no company will be able to survive.

The final E (i.e. the environment) concludes the spiral. It is the largest element or indicator of the model. Where earnings can be seen as the start or core of the spiral, the environment is the last element that completes the spiral. The relationships a company has with the five E's of sustainability, lead to the creation of a new model. By expanding the DuPont system of analysis, an altruistic model of greater sustainability was designed, that is named The Spiral of Relational Meaning. This model was applied to both MTN and Sasol in order to determine how the two respective companies measure against these indicators or criteria.

4.1 MTN GROUP LIMITED

It was discovered that MTN values sound corporate governance as one of the top priorities in the company. The company reviewed and altered the governance structure during the 2011 financial year. Management placed an emphasis on the importance of having governance policies which coincide with the King III report, Companies Act of 2008, and the JSE Listing Requirements. This is, however, what is expected from a company of MTNs' stature. During its reviewing of its governance structure, MTN formed a new Social and Ethics Committee. This committee should contribute significantly to improving the corporate identity as well as the internal operations of the organisation. It ought to, however, be noted that the committee consists mostly of members who are also on other committees. This could compromise the integrity of the committee if not handled with the utmost sensitivity. This argument is supported by the King III report which stresses the significance of autonomous directors who can maintain neutrality in perplexing circumstances.

The financial performance of MTN was analysed. The DuPont system of analysis was expanded and applied. It was calculated that MTN achieved an overall return on equity of 23,49% for 2011. This is a healthy and attractive ROE which will certainly attract the attention of potential investors. It was also discovered that MTN realised attractive EVA™ for the 2011 which was calculated to be R 13 815 001,20. It was calculated that MTN has a predicted sustainable growth rate of 9,77% for the foreseeable future. It was determined that MTN has a favourable cash conversion cycle, however, it is debateable if such strict cash collection payment and receivable policies are viable. Finally, it was established that MTN's shares are undervalued considering that the calculated intrinsic value was R240,40 (compared to the 2011 closing price of R141,65). Furthermore, the EVA Momentum for MTN was calculated as 1,79% for 2011 – which would be an attractive prospect for investors. Therefore, it can be concluded that the earnings of MTN is satisfactory and MTN is sustainable in terms of its earnings.

The employee equity of MTN was the next indicator that was explored. The aim was to determine if MTN was treating its employees fairly and if its current employee relations can be considered as sustainable. First, it was determined that the sales per employee for MTN was R 6 574 110 for 2011. Second, the operating cost per employee was calculated at R 4 185,33. Third, the value per employee was established at R 6 569 925 for 2011. The net cash flow per employee was the fourth sub-indicator to be calculated. It was determined that MTN realised an R 1 503 452 net cash flow per employee. Fifth, it was calculated that the average salary and wages per employee stands at R 293 473,57 per annum. Finally, the employee equity was calculated by incorporating the abovementioned variables. The employee equity ratio was calculated as 4,47% for the 2011 financial year. Despite the fact that MTN's employee equity ratio seems high enough to be sustainable, it is suggested that the organisation reward its employee more substantially and relative to the amount of value they create for the company.

The third indicator, or third 'E', that was determined was social equity. It was calculated that the percentage social investment in sales stood at 16,71% for the 2011 financial year. Furthermore, a full content analysis was conducted to determine what social and community development projects MTN participates in. It was concluded that MTN realises the importance of community development. MTN does

a great deal for the community, however, considering the enormity of the company it is suggested that MTN can do more for struggling communities.

The fourth indicator to be determined was the economy. The aim was to determine if MTN actively tried to stimulate the economy, or are they completely dependent on the state of the economic climate. MTN employed 4,04% more employees in 2011 than in 2010. MTN is further doing a great deal for the economy. They are supporting small to medium enterprises and have launched deliberate initiatives to stimulate employment and economic growth. MTN is setting an example of how companies ought to go about improving the economy and is contributing to greater sustainability, not only for itself, but also for other companies in the economy.

The final indicator that was explored was the environment. First, the carbon foot print per employee was calculated. It was calculated as 51,27 $MtCO_2e$ (or 0,05127 kilotons CO_2e) per employee. This is relatively high compared to some of the company's competitors, however, it is reasonable considering the calibre of MTN. Second, the environmental involvement of MTN was researched. The CEO of MTN, Sifiso Dabenga, clearly outlines the importance of sustainability. He stresses the fact that the company has to move towards a 'greener' economy, and set various goals in order to achieve this. MTNs' GHG emissions have decreased from 2010 to 2011, and management attributed this to effective environmental initiatives. MTN is clearly concerned about its environmental impact, and considers it imperative to transform company operations if the company is to strive towards greater sustainability. The company has initiatives in place to reduce its impact on the environment, however, it is believed that there are a number of opportunities which ought to be investigated in order to reduce environmental impact even further.

4.1.1 Recommendations

A few recommendations are suggested that could perhaps aid financial managers in the decision-making process. The recommendations are listed below:

(a) MTN could engage in greater waste recouping projects. There is a great amount of waste generated, especially by discarded cellular devices, which could harm the environment. By engaging in recycling projects, the environment, communities and the company would benefit.

(b) The company should consider increasing its operational efficiency. As previously argued, by increasing exergy the company would strive toward lower environmental impact and greater long-term sustainability.

(c) By lowering its carbon emissions, the company would save large amounts of money on carbon tax penalties. These surplus funds could be utilised for various investments.

(d) By utilising MTNs' ICT's, the company could help other organisations and industries to lower its carbon emissions. MTN would thus receive remuneration in return.

(e) The company could consider the prospect of further communal development initiatives. Such initiatives or projects could be to offer education and training to disadvantaged youths. With the increasing concern about entry-level labour unemployment in South Africa, this could prove to be a very influential initiative.

(f) In certain cases it was concluded that MTN frequently focuses only on complying with regulatory requirements, and often fails to offer environmental issues much needed attention. It is suggested that MTN should disclose greater amounts of knowledge with regard to environmental and communal prospects, initiatives and completed projects.

(g) MTN should perhaps set more realistic goals for the next five to twenty years, what they aim to achieve with regard to environmental and social development.

(h) MTN could investigate strategies on how the company can sustain its current cash receivable and payable policies in order to maintain such a favourable cash conversion cycle.

(i) It is suggested that MTN offer greater remuneration packages for its employees considering that it is believed that the employees of the company are not compensated adequately in relation to the value they create for the organisation.

(j) MTN invests a great deal in the surrounding communities, not only in South Africa, but in various countries. However, given the favourable profit MTN realises, it is suggested that a greater amount ought to be invested in order to improve potential sustainability.

4.2 SASOL LIMITED

Sasol is a large company who converts coal and natural gas to petrol and diesel by means of the Fischer-Tropsch process. They produce the greatest volume of synthetic fuels in the world and are one of the prevalent corporate taxpayers in South Africa. The three strategies that Sasol utilises to gain a competitive advantage is by means of exploiting upstream hydrocarbon prospects; optimising its current business operations; and by refining its gas-to-liquids and coal-to-liquids technologies. This study concludes that Sasol possess sound corporate governance structures. It has formed a committee which directly addresses environmental and ethical issues. The committee meet regularly in order to determine if the company is in line with environmental regulations and ethical conduct.

After analysing the financial statements of Sasol and applying financial models, it was concluded that the company realised a ROE of 18,34% for 2011. This would please investors and shareholders. Sasol realised an EVA™ of R 5 342 724,00 for the 2011 financial year. Even though this is an attractive EVA™, it is almost half of the EVA™ MTN realised over the same period. Sasol has an encouraging projected sustainable growth rate of 8,43% for the foreseeable future. However, it is yet again less than the growth rate of MTN. Sasol's cash conversion cycle is acceptable, however, there is much room for improvement considering that it is currently at 37 days. Finally, Sasol's calculated intrinsic value is lower than the market value of its shares. This is worrying seeing that this could contribute to shareholders to avoid investing in the company. Nevertheless, overall the company seems to be in a good financial condition. Finally, the EVA Momentum for Sasol was calculated as 2,49% for 2011. This is a healthy growth rate in economic profit and would please investors and shareholders alike.

The next step was to determine the employee equity of Sasol. It was determined that the average sales per employee for Sasol was R 4 225 584,00 for the 2011 financial year. The operating cost per employee for Sasol was calculated as R 2 683,84 –

which is considerably lower than that of MTN. However, the value per employee for Sasol was noticeably lower than that of MTN at R 4 222 901 for 2011. Sasol's net cash flow per employee was R 528 361,22, which is almost a third of what MTN generated in 2011. The average salaries and wages of Sasol was calculated as R 556 425 per annum. This is almost double MTN's average salaries and wages. This can partly be attributed to the fact that many of Sasol's business activities require highly skilled labour. Finally, the employee equity ratio could be calculated. Sasol has an impressive employee equity ratio of 13,18%. This is significantly higher than that of MTN which is 4,47%. It can therefore be concluded that even though MTN out performed Sasol in terms of profit margins, Sasol has greater employee equity than MTN. Considering that employee equity is one of the elements of sustainability; Sasol would theoretically attract more employees than MTN in the foreseeable future, and thus be more sustainable in terms of its employee equity.

The third indicator, or 'E', that was determined was social equity. First, the percentage social investment in sales was determined to see how much Sasol is willing to sacrifice for community development. Second, Sasol's social involvement was determined. Sasol realised a percentage social investment in sales of 10,73% for 2011. This is almost 6% lower than MTN. Sasol regards social involvement as a very serious matter and is currently engaged in 87 corporate social investment projects (Investoreport, 2012). The company has spent a great amount of capital to develop and improve struggling communities.

The fourth element that was evaluated was the economy Sasol finds itself in. First, it was calculated that the current change in employees for Sasol is 1,11%. It was found that MTN had greater job security than Sasol. However, the amount of people Sasol employees each year is relatively constant. Second, the economic involvement of Sasol was determined. Sasol has various projects to improve the economy, however, it is arguable if they are doing enough as a company.

The final element that was explored was what Sasol is doing for the environment. First, the carbon footprint per employee of Sasol was calculated to be 2,22 kilotons CO_2e. This is an enormous carbon footprint and is so high that it cannot be compared to most companies. It should be remembered that Sasol is in an industry with the highest carbon footprint, however, it does not justify the amount of

emissions the company is producing on a continuous basis. Second, it was established what Sasol is doing to reduce its environmental impact. Sasol is doing a great deal to reduce its carbon footprint, however, there are still a great number of opportunities that can be exploited to minimise its negative environmental impact.

Sasol CEO, David Constable, stressed on various occasions the importance of environmental awareness. He recommends that companies should work together with policy makers in order to respond quickly to regulatory and policy changes. The company believes that emissions will be reduced if efficiency is increased whilst a greater amount of natural gas is utilised for fuel operations. From 2004 to 2011, Sasol has decreased its GHG emissions by 12%. The company has spent more than R12 billion since 1999 in gas conversion projects. Sasol is gradually converting its facilities in order to employ a greater amount of gas to fuel its operations. The research has proven that the initiatives are effective and carbon emissions have decreased over the past few years.

Sasol has clearly realised the importance of maintaining a sound relationship with its environment. It is engaged in various environmental benign projects whilst spending millions of Rand to fund these activities. Moreover, the company is actively researching methods to improve its fuel conversion technologies. Sasol has set some contentious targets for the future. Whether it will meet these targets is yet to be seen, however, there seems to be an undeniable urgency within the company to convert to renewable energy sources.

4.2.1 Recommendations

Below is a list of recommendations that Sasol should perhaps consider for the future.

(a) Sasol's carbon emissions are an enormous threat. The CO_2e emissions of Sasol are exceptionally high. Sasol should strongly consider that more of its facilities should be converted from coal, to using natural gas as its primary feedstock for its operations in the near future.

(b) Engage in further community development projects to improve the standard of living in rural areas. There are various strategies that can be followed to achieve this. One of them could be to offer educational sponsorship or training. An additional strategy could be to encourage and

invest in self-sustainable agriculture to help communities in severe poverty.

(c) The company could perhaps offer workshops and volunteer programs to employees in order to illustrate to their employees what the vision of the company is and to offer them an opportunity to engage and volunteer in such initiatives.

(d) Sasol should look into possible opportunities for offering small to medium sized contractor's tenders. Large companies, like Sasol, often only use large contractors on projects due to quality assurance and simplicity. However, by offering more small local companies the contracts, it will contribute to environmental development.

(e) Sasol ought to pay greater attention to its financial performance considering that the intrinsic value of its shares is lower than the market value.

(f) It is suggested that Sasol continue to offer its employees attractive compensation packages, considering that this is required if a company aims to be sustainable in the long term.

(g) It is suggested that the company revise its cash receivables and payables policies. Currently, the cash conversion cycle of Sasol is 37 days. By implementing more conservative policies, it would be possible to reduce the CCC and improve the company’s cash flows.

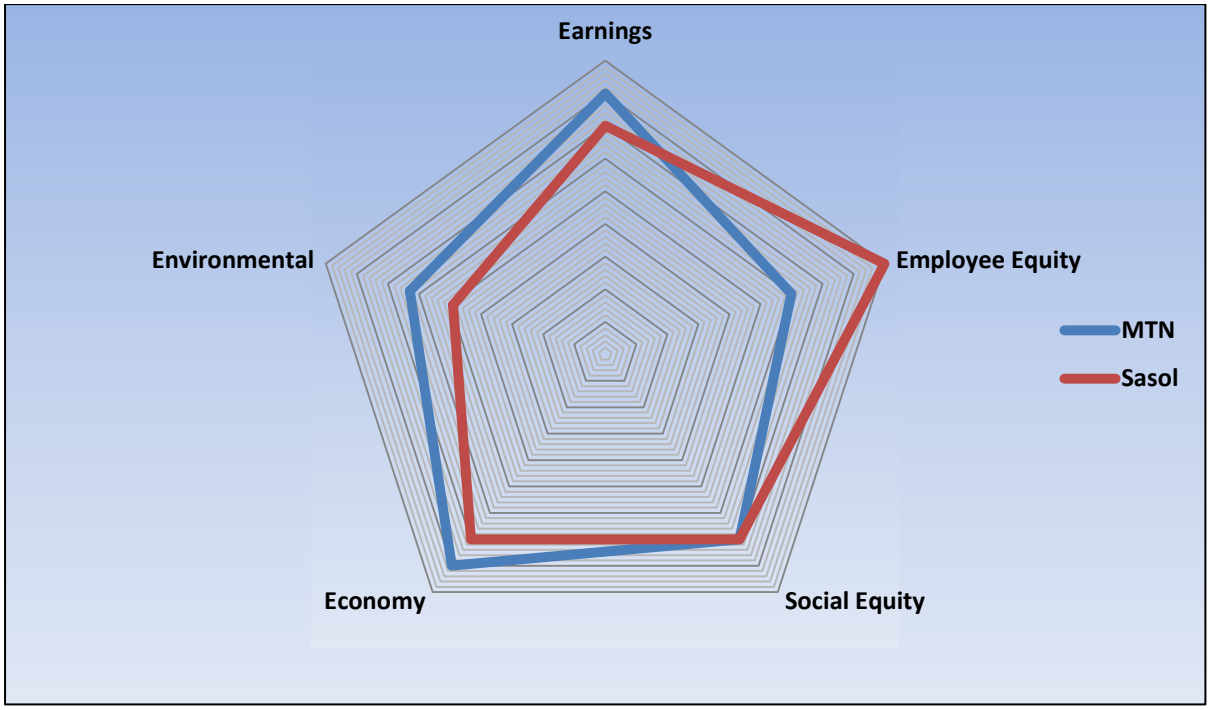
4.3 CLOSING REMARKS

This dissertation exemplified the importance of relationships and how companies can be viewed as an organic system. Systems theory was explored and attested demonstrating how everything in the universe is a system on its own. It was argued that in order for a company to be sustainable, it will have to attend dearly to the relationships it has with its various stakeholders. The ultimate goal of a company is to be sustainable and offer sustainable production in the future (De Ron, 1998:106). Therefore, the study continued by suggesting that if a company is aiming towards

ultimate sustainability, it will have to consider five different stakeholders and the relationships the company has with these various parties.

The five central stakeholders were introduced as the five E's of sustainability – which is an expansion to the well-known three E's of sustainability. They are: earnings, employee equity, social equity, economy, and the environment. It was argued that these five stakeholders can be perceived as a spiral where earnings are at the core of the spiral and the environment is at the end of the spiral (and is consequently the largest stakeholder). The DuPont system of analysis was expanded in order to accommodate all of the five E's. The DuPont model is the heart of the spiral and is subsequently how the first earnings indicator is calculated. This expanded model was named: The Spiral of Relational Meaning. The model was applied to the selected sample group (i.e. MTN and Sasol) in order to determine how the respective companies compare in this regard. Figure 4.1 below illustrates the comparison between the two companies.

Figure 4.1: Comparison between MTN and Sasol



Each of the five E's was given a rating out of ten based on how they performed during the content analysis. In Figure 4.1 above, it can be determined that MTN has a slight advantage over Sasol. Therefore it can be argued that theoretically, based on The Spiral of Relational Meaning model, MTN is more sustainable than Sasol.

However, the difference is not significantly different. Both of these companies are corporate giants in South Africa and both are setting an example for other organisations to follow. Nevertheless, there are still great opportunities to improve in order to achieve absolute sustainability. Even though it is very unlikely that a corporation will be able to achieve ultimate sustainability, it must always be seen as the target any organisation strives toward.

Through this study it was discovered that companies often do not realise what a significant impact the environment and various other stakeholders has on its business. This dissertation proposes the idea that investing in the environment and establishing and maintaining sound stakeholder relations, would benefit the organisation in the long run. It has been proven that companies can still make attractive profits whilst reserving capital for social and environmental investment. It is therefore in the best interest of companies to invest in such activities if they strive for unconditional sustainability. Some argue it is a waste of money to invest in non-profit projects, and that only the shareholders should be satisfied. However, the research conducted indicates otherwise and suggests that companies will ultimately fail if it isolates itself from the surrounding environment. An illustrious corporate identity can only be truly formed if a healthy reciprocal relationship with one's environment is present to encourage co-evolution with all relevant stakeholders. It can thus be concluded, that sound stakeholder relations is imperative for greater organisational sustainability.

Even though the model suggested in this dissertation (i.e. The Spiral of Relational Meaning) is not perfect, it is a foundation from which further research can be done in order to expand it and compare a greater number of companies. Further research is thus suggested to offer a simple implementation of the model which will provide analysts with a clear and simple indication of overall organisational sustainability.

5 LIST OF REFERENCES

Ackers, B. 2009. Corporate Social Responsibility Assurance: How do South African Publicly Listed Companies Compare? *Meditari Accountancy Research,* 17(2):1-17.

Allen, D. 1985. *Philosophy for Understanding Theology*. Louisville, Kentucky, United States of America:Westminster John Knox Press.

Anon. 2010. Does Greening Make Good Business Sense? *Graphix,* 9(2):26-27.

Ansari, S., Bell, J., Klammer, T., & Lawrence, C. 1997. *Measuring and Managing Environmental Costs.* (A Modular Series. Management Accounting: A Strategic Focus). United States of America: Richard D. Irwin, a Times Mirror Higher Education Group, Inc. company.

Aristotle, 1998. *Politics.* Translated by Reeve, C.D.C. Indianapolis: Hackett.

Arrow, K., Dasgupta, P., Goulder, L., Daily, G., Ehrlich, P., Heal, G., Levin, S., Mäler, K., Schneider, S., Starett, D., & Walker, B. 2004. Are We Consuming Too Much? *Journal of Economic Perspectives*, 18(3):147-172.

Balmer, J.M.T., Fukukawa, K., & Gray, E.R. 2007. The Nature and Management of Ethical Corporate Identity: A Commentary on Corporate Identity, Corporate Social Responsibility and Ethics. *Journal of Business Ethics,* 76(1):7-15.

Barnard, C.I. 1938. *The Functions of the Executive.* Cambridge, Mass: Harvard University Press.

Bateman, T.S. & Zeithaml C.P. 1993. *Management: Function & Strategy.* 2nd ed. Printed in the United States of America: Irwin Inc.

Bayat, M., Rahimpour, M.R., & Moghtaderi, B. 2011. Genetic Algorithm Strategy (GA) for Optimization of a Novel Dual-stage Slurry Bubble Column Membrane Configuration for Fischer-Tropsch Synthesis in Gas to Liquid (GTL) Technology. *Journal of Natural Gas Science and Engineering,* 3(2011):555-570.

Blue Label Telecoms. 2011. *Audited Results for the year end 31 May 2011.* [Online] Available from: http://www.bluelabeltelecoms.com/online_results/annual_results_2011/pdf/presentation.pdf [Downloaded: 2012-08-07].

Bodie, Z., Kane, A., & Marcus, A.J. 2009. *Investments.* 8th ed. Singapore: McGraw-Hill.

Boulding, K.E. 1956. General Systems Theory: The Skeleton of Science. *Management Science,* 2(3):197-208.

Brown, L. 1982. *Building a Sustainable Society.* New York: W.W. Norton.

Buchholz, R.A. & Rosenthal S. B. 2005. Toward a Contemporary Conceptual Framework for Stakeholder Theory. *Journal of Business Ethics* 58(1/3):13 – 148.

Capra, F. 2007. Sustainable Living, Ecological Literacy, and the Breath of Life. *Canadian Journal of Environmental Education*, 12:9-19.

Capra, F. & Pauli, G. (eds), 1995. Steering Business Toward Sustainability. Tokyo, Japan: United Nations University Press.

Chen, S., & Dodd, J.L. 1997. Economic Value Added (EVA™): An Empirical Examination Of A New Corporate Performance Measure. *Journal of Managerial Issues,* 9(3):318-333.

Clarkson, M.B.E. 1995. A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *The Academy of Management Review,* 20(1):92-117.

Da Piedade, L. & Thomas, A. 2006. The Case for Corporate Responsibility: An Exploratory Study. *SA Journal of Human Resource Management,* 4(2):65-74.

De Ron, A.J. 1998. Sustainable Production: The Ultimate Result of a Continuous Improvement. *International Journal of Production Economics*, 56-57:99-110.

De Villiers, J. 1997. The Distortions in Economic Value Added (EVA) Caused by Inflation. *Journal of Economics and Business*, 49(3):285-300.

Donaldson, T. & Preston, L.E. 1995. The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *The Academy of Management Review* 20(1):65-91.

DSP-user, 2010. *Barnsley Fern Fractals – 4 States.* [Online] Available from: http://0-en.wikipedia.org.innopac.up.ac.za/wiki/File:Barnsley_Fern_fractals_-_4_states.PNG#filelinks [Downloaded: 2012-08-16].

Eccles, N.S., Pillay, V. & de Jongh, D. 2008. Correlates of Corporate Accountability amongst South Africa's Largest Listed Companies. *South African Business Review,* 13(1):21-38.

Farrell, J.L. 1985. The Dividend Discount Model: A Primer. *Financial Analyst Journal,* 41(6):16-19+22-25.

Ferguson, S.D. & Ferguson, S. (eds) 2007. *Organizational Communication*. 2nd ed. New Brunswick: New Jersey Transaction Publishers.

Firer, C., Ross, S.A., Westerfield, R.W. & Jordan, B.D. 2008. *Fundamentals of Corporate Finance.* United Kingdom: McGraw-Hill Education (UK) Limited.

Freeman, E.R. & McVea, J. 2001. A Stakeholder Approach to Strategic Management, *Darden Business School Working Paper*, No. 01-02. [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=263511 [Downloaded: 2012-07-18].

Friedman, M. 1970. The Social Responsibility of Business is to Increase its Profits. *The New York Times Magazine,* 13 September:1-6.

Gentry, J.A., Vaidyanathan, R., & Lee, H.W. 1990. A Weighted Cash Conversion Cycle. *Journal of Financial Management,* 19(1):90-99.

GHG, 2012. *Greenhouse Gas Protocol.* [Online] Available from: http://www.ghgprotocol.org/ [Accessed: 2012-05-10].

Gitman, L.J. 2006. *Principles of Managerial Finance*. 11th ed. United States of America: Pearson Addison Wesley.

Gordon, M.J. 1959. Dividens, Earnings, and Stock Prices. *The Review of Economics and Statistics,* 41(2):99-105.

Gottlieb, J.Z. & Sanzgiri, J. 1996. Towards an Ethical Dimension of Decision Making in Organizations. *Journal of Business Ethics,* 15(12):1275-1285.

Great Britain Forestry Commission. 2012. *Sustainability.* [Online] Available from: http://www.forestry.gov.uk/forestry/edik-59fmzf [Accessed: 2012-09-20].

Gutowski, T.G., Sekulic, D.P. & Bakshi, B.R. 2009. Preliminary Thoughts on the Application of Thermodynamics to the Development of Sustainability Criteria. *IEEE International Symposium on Sustainable Systems and Technology*, 2009(07):1-6.

Hamman, R. 2003. Mining Companies' Role in Sustainable Development: The 'why' and 'how' of Corporate Social Responsibility from a Business Perspective. *Development Southern Africa* 20(2):237-254.

Hamman, R. & Acutt, N., 2003. How Should Civil Society (and the Government) Respond to 'Corporate Social Responsibility'? A Critique of Business Motivations and the Potential for Partnerships. *Development Southern Africa* 20(2):255-270.

Hawken, P. 1993. *The Ecology of Commerce*. New York: Harper Collins.

Higgins, R.C. 1977. How Much Growth Can A Firm Afford? *Journal of Financial Management,* 6(3):7-16.

Höver, H. 2004. Corporate Governance? Ethical evaluation of the Second King Report in the light of Peter Ulrich's Integrative Economic Ethics. *Dutch Reformed Theological Journal,* 46(1,2):114-128.

Investoreport. 2012. *Corporate Social Responsibility projects and other sponsorships.* [Online] Available from: http://sasolsdr.investoreports.com/sasol_sdr_2008/downloads/site_reports/Corporate_Social_Responsibility_projects_and_other_sponsorships.pdf [Accessed on 2012-10-31].

Jenkins, R. 2001. Corporate Codes of Conduct: Self-regulation in a Global Economy. *Technology, Business and Society,* Programme Paper No. 2, April. Geneva: United Nations Research Institute for Social Development.

Kant, I.; Translated by Ellington J.W. 1993. *Grounding for the Metaphysics of Morals: With on a Supposed Right to Lie Because of Philanthropic Concerns*. 3rd ed. United States of America: Hackett Publishing Co, Inc.

Kast, F.E. & Rosenzweig, J.E. 1972. General Systems Theory: Applications for Organization and Management. *The Academy of Management Journal,* 15(4):447-465.

Kotas, T.J. 1995. *The Exergy Method of Thermal Plant Analysis*. Reprint ed. Malabar, FL: Krieger Pub. Co.

Kotler, P. & Lee, N. 2005. *Corporate Social Responsibility: Doing the Most Good for your Company and Your Cause*. Hoboken, New Jersey: John Wiley & Sons, Inc.

Kulshreshtha, P. 2005. Business Ethics versus Economic Incentives: Contemporary Issues and Dilemmas. *Journal of Business Ethics,* 60(4):393-410.

Lantos, G.P. 2001. The Boundaries of Strategic Corporate Social Responsibility. *Journal of Consumer Marketing,* 18(7):595-632.

Leedy, P.D. & Ormrod, J.E. 2005/2010. *Practical Research: Planning and Design*. 8th/9th ed. Upper Saddle River, NJ: Pearson.

Levin, D.T., Momen, N. & Drivdahl, S.B. 2000. Change Blindness Blindness: The Metacognitive Error of Overestimating Change-detection Ability. *Visual Cognition* 7(1/2/3):397-412.

Lovata, L.M., & Costigan, M.L. 2002. Empirical Analysis of Adopters of Economic Value Added. *Management Accounting Research,* 13:215-228.

Magnet Communications, 2011. Top 30 Professionals' Ranking. *Destination the Future 2011*. ISSN: 2223-5043.

Manning, S., Boons, F., von Hagen, O. & Reinecke, J. 2011. National context matter: The co-evolution of sustainability standards in global value chains. *Ecological Economics,* Forthcoming. [Online] Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1752655 [Downloaded: 2012-09-20].

Marshall, J.D., & Toffel, M.W. 2005. Framing the Elusive Concept of Sustainability: A Sustainability Hierarchy. *Environmental Science & Technology*, 39(3):673-682.

McGregor BFA. 2012a. Research Domain: *Fact sheet MTN Group: McGregor BFA*. [Online] Available from: http://0-research.mcgregorbfa.com.innopac.up.ac.za/Station/XCel/XCelProcess.aspx?Token=VcbnENIwL3bL0WUxrDTmg%3d%3d&ClientID=85&MCGBFACompaniesID=3745 [Privileged student access: 2012-08-06].

McGregor BFA. 2012b. Research Domain: *Fact sheet MTN Group Limited: McGregor BFA*. [Online] Available from: http://0-research.mcgregorbfa.com.innopac.up.ac.za/Station/XCel/XCelProcess.aspx?Token=InseCJw5ZpOkXJCtHzTgFg%3d%3d&ClientID=85&MCGBFACompaniesID=25750 [Privileged student access: 2012-08-23].

McGregor BFA., 2012c. Research Domain: *Fact sheet Sasol Limited: McGregor BFA*. [Online] Available from: http://0-research.mcgregorbfa.com.innopac.up.ac.za/Station/XCel/XCelProcess.aspx?Token=rx7EpISTTNopFHlU8CCzfQ%3d%3d&ClientID=85&MCGBFACompaniesID=32 [Privileged student access: 2012-08-06].

McGregor BFA. 2012d. Research Domain: *Financial Models Report MTN: McGregor BFA*. [Online] Available from: http://research.mcgregorbfa.com/Station/FinancialModels/FinancialModelsDefault.aspx?Token=ciPL7Ui9ZAUTLkD3xhcuPw%3d%3d&FM_Report=1&FM_EH=1&UsersID=18974&ConModule=136&MCGBFACompaniesID=3745&InstrumentType=0&Ticker=MTN [Privileged student access: 2012-10-16].

McGregor BFA. 2012e. Research Domain: *Financial Models Sasol Limited.* [Online] Available from:

http://research.mcgregorbfa.com/Station/FinancialModels/FinancialModelsDefault.aspx?Token=tFnuUW5JabTh6uwNTzd2eQ%3d%3d&FM_Report=1&FM_EH=1&UsersID=18974&ConModule=136&MCGBFACompaniesID=32&InstrumentType=0&Ticker=SOL [Privileged student access: 2012-10-29].

Meadows, D., Randers, J. & Meadows, D. 2004. *Limits to Growth: The 30-Year Update.* United States: Chelsea Green Publishing Company.

Mitchell, R.K., Agle B.R. & Wood., D.J. 1997. Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *The Academy of Management Review,* 22(4):853-886.

Moss, J.D., & Stine, B. 1993. Cash Conversion Cycle and Firm Size: A Study of Retail Firms. *Journal of Managerial Finance,* 19(8):25-34.

Mouritsen, J. 1998. Driving Growth: Economic Value Added versus Intellectual Capital. *Journal of Management Accounting Research,* 9(4):461-482.

MTN, 2010. *Company Profile.* [Online] Available from: http://www.mtn.com/MTNGROUP/Pages/CompanyProfile.aspx [Accessed: 2012-05-07].

MTN, 2011a. *MTN Group Limited Corporate Governance Report 2011.* [Online] Available from: http://www.mtn.com/Investors/Financials/Documents/ar_Corporate_Governance2011.pdf [Downloaded: 2012-05-14].

MTN, 2011b. *MTN Group Limited Sustainability Report – for the year ended 31 December 2011*. [Online] Available from: http://www.mtn.com/Investors/Financials/Documents/MTN_Sustainabilty_report2011.pdf [Downloaded: 2012-06-14].

MTN, 2011c. *MTN Group Limited Integrated Business Report – for the year ended 31 December 2011.* [Online] Available from: http://www.mtn.com/Investors/Financials/Documents/ar_integrated_report2011.pdf [Downloaded: 2012-06-14].

Muller, L. 2011. Annual Report – Sustainability Report – Integrated Report? What does King say? *Official Journal of the Institute of Municipal Finance Officers,* 11(3):24-26.

Newsweek, 2012a. *Green Rankings 2012: Global Companies.* [Online] Available from: http://www.thedailybeast.com/newsweek/2012/10/22/newsweek-green-rankings-2012-global-500-list.html [Accessed: 2012-10-29].

Newsweek, 2012b. *Green Rankings 2012: Full Methodology.* [Online] Available from: http://www.thedailybeast.com/newsweek/2012/10/22/newsweek-green-rankings-2012-full-methodology.html [Accessed: 2012-10-29].

Odum, E.P., 1975. *Ecology: The Link Between the Natural and the Social Sciences*. London: Holt, Rinehart and Winston.

Pannenberg, W. 1970. *What is Man*? Philadelphia: Fortress Press.

Phillips, R. & Freeman, R.E. 2003. *Stakeholder Theory and Organizational Ethics.* San Francisco: Berrett-Koehler Publishers

Richards, V.D., & Laughlin, E.J. 1980. A Cash Conversion Cycle Approach to Liquidity Analysis. *Journal of Financial Management,* 9(1):32-38.

Rogerson, W.P. 1997. Intertemporal Cost Allocation and Managerial Investment Incentives: A Theory Explaining the Use of Economic Value Added as a Performance Measure. *Journal of Political Economy,* 105(4):770-795.

Rosen, M.A., Dincer, I. & Kanoglu, M. 2008. Role of exergy in increasing efficiency and sustainability and reducing environmental impact. *Energy Policy* 36(2008):128-137.

Rossouw, D., & van Vuuren, L. 2004. *Business Ethics.* 3rd ed. Cape Town: Oxford University Press Southern Africa.

Royal Dutch Shell, 2011. *Sustainability Report: Royal Dutch Shell PLC Sustainability Report 2011.* [Online] Available from: http://reports.shell.com/sustainability-report/2011/servicepages/downloads/files/entire_shell_sr11.pdf [Accessed: 2012-11-01].

SAICA, 2009. *King III.* [Online] Available from: https://www.saica.co.za/TechnicalInformation/LegalandGovernance/King/tabid/626/language/en-ZA/Default.aspx [Accessed: 2011-08-14].

Sasol, 2009a. *Business Overview.* [Online] Available from: http://www.sasol.com/sasol_internet/frontend/navigation.jsp?navid=700003&rootid=2 [Accessed: 2012-06-12].

Sasol, 2009b. *Growth Strategy.* [Online] Available from: http://www.sasol.com/sasol_internet/frontend/navigation.jsp?navid=700008&rootid=2 [Accessed: 2012-06-12].

Sasol, 2011a. *Address by Sasol's Chief Executive Officer – Gas Showcasing Dinner.* [Online] Available from: http://www.sasol.com/sasol_internet/downloads/DavidEConstable_COP17_Showcasing_Gas_Address_031211_final_1327913595292.pdf [Downloaded: 2012-06-12].

Sasol, 2011b. *Sasol Annual Financial Statements 2011.* [Online] Available from: http://www.sasol.com/sasol_internet/downloads/Sasol_AFS_2011_1319108538786.pdf [Downloaded: 2012-07-05].

Sasol, 2011c. *Address by Sasol's Chief Executive Officer – CEO's Private Breakfast As Part Of The WBCSD.* [Online] Available from: http://www.sasol.com/sasol_internet/downloads/DavidEConstable_COP17_WBCSD_Breakfast_Address_051211_final_1327913794597.pdf [Downloaded: 2012-07-06].

Sasol, 2011d. *South African COP17 CEO Forum Dinner.* [Online] Available from: http://www.sasol.com/sasol_internet/downloads/DavidEConstable_COP17_CEO_Forum_Dinner_Address_051211_final_1327913865025.pdf [Downloaded: 2012-07-06].

Sasol, 2011e. *Sasol Integrated Annual Report.* [Online] Available from: http://www.sasol.com/sasol_internet/downloads/Sasol_IR_2011_1328013405316.pdf [Downloaded: 2012-08-04].

Sasol, 2011f. *Sasol Sustainable Development Report.* [Online] Available from: http://www.sasol.com/sasol_internet/frontend/navigation.jsp?navid=13500006&rootid=3 [Accessed: 2012-10-29].

Sasol, 2012a. *Corporate Governance.* [Online] Available from: http://www.sasol.com/sasol_internet/frontend/navigation.jsp?navid=700005&rootid=2 [Accessed: 2012-07-06].

Sasol, 2012b. *Conserving the Environment Through Volunteerism.* [Online] Available from:

http://www.sasol.com/sasol_internet/frontend/navigation.jsp;jsessionid=XCX4IVMMBNLOTG5N4EZSFEQ?articleTypeID=2&articleId=33000004&navid=1&rootid=1 [Accessed: 2012-08-10].

Sasol, 2012c. *Sasol Limited Nomination, Governance, Social and Ethics Committee: Terms of Reference.* [Online] Available from: http://www.sasol.com/sasol_internet/downloads/attachment5_1331290433607.pdf [Downloaded: 2012-08-02].

Sasol, 2012d. *Osizweni brings science alive through National Science Week*. [Online] Available from: http://www.sasol.com/sasol_internet/frontend/navigation.jsp;jsessionid=NNBQUYIWGLVWPG5N4EZSFEQ?articleTypeID=2&articleId=33000002&navid=4&rootid=4 [Accessed on 2012-10-30].

Sasol, 2012e. *Education department lauds Sasol for support*. [Online] Available from: http://www.sasol.com/sasol_internet/frontend/navigation.jsp?articleTypeID=2&articleId=5400001&navid=4&rootid=4 [Accessed on 2012-10-30].

Sasol, 2012f. *Sasol Techno X.* [Online] Available from: http://www.sasoltechnox.co.za/ [Accessed on 2012-10-30].

Saviotti, P.P. 1986. Systems Theory and Technological Change. *Futures,* 18(6):773-786.

Schneider, M. 2002. A Stakeholder Model of Organizational Leadership. *Organization Science,* 13(2):209-220.

Simons, D.J. 2000. Attentional Capture and Inattentional Blindness. *Trends in Cognitive Sciences*, 4(4):147-155.

Smith, E.E. & Perks, S. 2010. Evaluating SMEs Corporate Social Performance: A Stakeholder Perspective. *Journal of Contemporary Management,* 4:71-93.

Stewart, B. 2009. EVA momentum: the one ratio that tells the whole story. *Journal of Applied Corporate Finance*, 21(2):74-86.

Stone, M.K. & Barlow, Z. 2005. *Ecological Literacy: Educating our children for a Sustainable World.* San Francisco: Sierra Club Books.

Strong, M.F. 1992. Energy, Environment and Development. *Energy Policy* 20(6):490-494.

Ulanowicz, R.E., Goerner, S.J., Lietaer, B. & Gomez, R. 2009. Quantifying Sustainability: Resilience, Efficiency and the Return of Information Theory. *Ecological Complexity: An International Journal on Biocomplexity in the Environment and Theoretical Ecology*, 6(1):27-36.

United Nations General Assembly. 2005. *Resolution Adopted by the General Assembly – October 2005. Resolution A/RES/60/1.* [Online] Available from: http://data.unaids.org/Topics/UniversalAccess/worldsummitoutcome_resolution_24oct2005_en.pdf [Downloaded: 2012-09-20].

United Nations Statistics Division. 2010. *Environmental Indicators: Greenhouse Gas Emissions.* [Online] Available from: http://unstats.un.org/unsd/environment/air_co2_emissions.htm [Downloaded: 2012-10-20].

Verboven, H. 2009. *Tussen Moraal en Winstmaximalisering.* Kapellen: Pelckmans Studieboeken.

Weisstein, E.W. n.d. *Conical Spiral – MathWorld.* [Online] Available from: http://mathworld.wolfram.com/ConicalSpiral.html [Accessed: 2012-10-17].

Wheatley, M.J. 2006. *Leadership and the New Science: Discovering Order in a Chaotic World.* 3rd ed. San Francisco: Berret-Koehler Publishers, Inc.

Xulu, F. & Steyn, B. 2001. Support provided by corporate social responsibility programmes for the creation of universal access to ICT: a content analysis of corporate websites. *Communicatio,* 27(1):58-74.