



*Mechanisms for embedding sustainability into organisational  
strategic decision-making:  
Technology as an enabling mechanism*

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FULL COLOUR THINKING



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## TABLE OF CONTENTS

1. Chapter 1: Introduction to the Research .....	8
1.1. Introduction.....	8
1.2. Research Context .....	8
1.3. The Research Problem .....	13
1.4. The Purpose of this Research.....	13
1.5. The Practical Exploration (The Inclusive Innovation).....	14
2. Chapter 2: Literature Review.....	16
2.1. Chapter Introduction .....	16
2.2. External Factors Shaping Organisations.....	17
2.2.1. Sustainability and Inclusiveness .....	17
2.2.2. The Role of Society and the Environment within Business .....	20
2.2.3. Shared Value.....	22
2.2.4. Sustainable Business in Emerging Markets.....	24
2.2.5. The Role of Technology and its Ability to Capture, Monitor and Measure Data ...	26
2.3. Internal Organisational Factors:.....	29
2.3.1. Technology and Sustainable Data.....	29
2.3.2. Embedding Sustainability in Organisations.....	35
2.3.3. Culture.....	44
2.3.4. Long-term vs. Short-term View.....	44
2.3.5. Leadership and Sustainable Organisations .....	45
2.4. Chapter Summary .....	47
3. Chapter 3: The Research .....	50
3.1. Research Methodology .....	50
3.2. Research Questions.....	52
3.3. Research Approach .....	53
3.4. Sampling .....	55
3.5. The Interview Protocol .....	57
3.6. Research Scope .....	58
3.7. Research Assumptions and Ethics .....	58
3.7.1. Researcher Assumptions.....	58
3.7.2. Researcher Ethics.....	60
3.7.3. Research Limitation .....	60
4. Research Findings.....	62
4.1. Companies Assessment.....	62

4.1.1.	Financial Services: .....	62
4.1.2.	Manufacturing: .....	65
4.1.3.	Consumer Goods.....	68
4.1.4.	Summary of Sustainability Embeddedness.....	71
4.2.	Introduction to the Research Findings .....	72
4.3.	Context: External Drivers .....	73
4.3.1.	Compliance and Reporting Frameworks .....	73
4.3.2.	Reputation .....	74
4.4.	Context: Internal Drivers .....	75
4.4.1.	Business Models .....	75
4.4.2.	You Cannot Change What You Cannot Measure .....	77
4.4.3.	Leadership.....	78
4.4.4.	Cost Efficiency, Profit Growth and Risk Management .....	79
4.5.	Content and Process .....	81
4.5.1.	Frameworks as a Guide.....	81
4.5.2.	Lack of Common Metrics .....	82
4.5.3.	External Measurement Companies .....	83
4.5.4.	Systems of Data-gathering.....	83
4.5.5.	Sharing the Data.....	85
4.5.6.	Evolving KPI's.....	86
4.5.7.	Embedding these Behaviours.....	87
4.5.8.	Incentives for Engaging .....	89
4.6.	So What.....	91
4.6.1.	Sustainable Data-driven Business Models.....	91
4.6.2.	Sustainable Individual Behaviour .....	92
4.6.3.	Positive Stakeholder Effect.....	93
4.6.4.	Formal and Informal Embedding Practices .....	93
4.6.5.	The Role of Context.....	95
4.7.	Summary of Research Findings .....	96
4.8.	Emergent Concepts: Technology as an Enabler .....	98
4.8.1.	Technology as an Enabler of Data Collection .....	99
4.8.2.	Technology as an Enabler of Automated Sustainability Data Collection.....	99
4.8.3.	Technology as an Enabler of Aggregation.....	100
4.8.4.	Technology as an Enabler of Real-Time Data and Decision Making .....	101
4.9.	Research Conclusion.....	103

4.10.	Discussion, Future Research Directions and Practical Implications .....	105
5.	Bibliography: .....	108
6.	Appendix.....	112

## TABLE OF TABLES AND FIGURES

Table 1:Evolution of CSR: Comparisons with web 1.0 and 2.0 (Source: Visser, 2010, P. 14) .....	21
Table 2:The difference between CSR and CSV (Porter & Kramer, 2011, p.76).....	22
Table 3:The three stages of analytics adoption (Source: Lavalle et al., 2011, p 6).....	28
Table 4:Key dimensions of bolt on sustainability and embedded sustainability extracted from Dooley 2014 (Source: Dooley, 2014, p 7).....	36
Table 5:Clarifying expectations (Source: Bertels et al., 2010 P. 15).....	38
Table 6:How the literature contributes towards answering the research question – external factors.....	48
Table 7:How the literature contributes towards answering the research question – internal factors.....	48
Table 8:Summary of companies .....	71
Table 9:Summary of research findings .....	96
Table 10: Enabling data collection .....	99
Table 11:Enabling automated data collection.....	99
Table 12:Enabling aggregation of data.....	100
Table 13:Enabling real-time data and decision making.....	101
Table 14:Technology as an enabling mechanism .....	103
Table 15:Revised model, applying Petigrew’s framework to the interview results .....	105
Figure 1:Overview of reviewed themes .....	17
Figure 2:Bernard Marr’s evidence-based management model (Source: Marr & Davenport, 2010, p.22) .....	26
Figure 3:The sustainability maturity path (Source: PWC Sustainability: Moving from compliance to leadership ( 2011))......	29
Figure 4:Emerging technologies that collectively can advance sustainability efforts and objectives (Source: “Sustainability: Moving from compliance to leadership,” 2011) ....	31

Figure 5:A portfolio approach to embedding sustainability (Source: Bertels Et AL., 2010, P. 14) .....	37
Figure 6:Eisenhardt’s approach to theory building through case studies (Eisenhardt, 1989, p. 533) .....	51
Figure 7:Pettigrew’s framework for analysing organisational change (Pettigrew, 1987, p. 657) .....	53
Figure 8:Overview of research approach.....	54
Figure 9:FS1 sustainability embeddedness .....	63
Figure 10:FS2 Sustainability embeddedness .....	65
Figure 11:M1 sustainability embeddedness.....	66
Figure 12:M2 sustainability embeddedness.....	68
Figure 13:CG1 sustainability embeddedness.....	69
Figure 14:CG2 sustainability embeddedness.....	71
Figure 15:Levels of sustainable value creation (Source: Laszlo & Zhexembayeva, 2011, P. 40) .....	72
Figure 16: Sustainability embeddedness.....	98

## **1. Chapter 1: Introduction to the Research**

### **1.1. Introduction**

This research is an exploration into the factors shaping the ways in which business organisations in South Africa are adapting in response to the changing economic, social and environmental landscape within which they are located. It attempts to understand the role technology platforms, particularly those relating to the measurement of performance metrics and the tracking of sustainability indicators, are playing in enabling South African organisational transition towards sustainable strategic decision-making. This is significant as an area of research as large organisations play a primary role in impacting society in both positive and negative ways and shaping the longevity of the economic landscape.

### **1.2. Research Context**

An increasing focus has been directed toward understanding the role that business can play in positively affecting the social and environmental context within which it operates. The maximisation of profit at the expense of the environment and society is no longer recognised as a viable operating model, which has seen a consequent recognition of the need for a change to such practise before such time as the damage therefrom, be it to the environment or society, is too great for business to continue to operate successfully.

The effects of the global financial crisis have exposed corporate greed, and trust in business is at an historical low (Porter & Kramer, 2011). The neoclassical model of doing business, where the firms only objective is to further its own self interest is no longer a means of ensuring a businesses future survival and growth (Baral & Pokharel, 2016). The capitalist economic system, in which Milton Friedman argued that “the one and only social responsibility of a business is to increase its profits by engaging in the competitive free market within the scope of law and regulations”(Baral & Pokharel, 2016, P.1) appears to no longer be a reasonable means of driving growth, and new ways of fostering economic growth in a resource constrained environment need to be explored.

According to Laszlo & Zhexembayeva (2011) “in recent years three big trends – declining resources, radical transparency, and increasing expectations have re-defined the way companies compete (p.38)”. Porter and Kramer (2011) suggest that it is the responsibility of the business sector, that is companies and organisations, to reconnect in meaningful with the societies and environments within which they operate. Business needs to identify ways to engage with the external stakeholders of their business, such as members of society and the environmental areas they have an effect on, and ensure that their business strategy drives the objectives and goals of all these stakeholders. The challenge with this, however, is that the day-to-day practices and behaviours of organisations and the organisational strategies that define their growth opportunities are often not aligned with this new corporate agenda of inclusiveness or sustainability (Karp, 2006). Companies therefore need to deeply explore the role they wish to play in the social, environmental and economic landscape and explore how they intend to create value for the business in a way that positively impacts society and the economy. This new approach may be termed as a sustainable or long-term strategic approach.

According to Bertels, Papania, and Papania (2010), a sustainable organisation is one in which the firm does not view itself in isolation of its environment and the society within which it operates and seeks to include external stakeholders in its day-to-day activities with an awareness of the future impact of its current operations, both positive and negative. A sustainable organisation is one that is ensuring the sustainability of the resources it requires to operate, and that is working to ensure that the communities they are operating within continue to thrive. Success, in the context of sustainable organisations, accordingly requires an understanding of the long-term implications of the way in which operations either sustain or deplete resources and community. Having a long-term view often runs counter to the existing short-term view of assessing value which remains largely a financial metric and is perpetuated by stock market behaviour that requires quarterly results to prove company value. The different mechanisms for creating sustainable companies need to be explored and embedded into organisations if the economy is to grow sustainably.

As Porter and Kramer (2011) argue, “a big part of the problem lies with companies themselves, which remain trapped in an outdated approach to value creation that has emerged over the past few decades. They continue to view value creation narrowly, optimising short-term financial performance in a bubble while missing the most

important customer needs and ignoring the broader influences that determine their longer-term success. How else could companies overlook the well-being of their customers, the depletion of natural resources vital to their businesses, the viability of key suppliers, or the economic distress of the communities in which they produce and sell? (p.64)”.

Within this context of understanding the prospects of organisational success on the basis of sustainable business practices, there has been a growing demand by various business stakeholders for companies to provide transparent and demonstrable evidence of the ways in which they engage in sustainable and long-term business practices. For example, stakeholder requirements have placed increased pressure placed on South African organisations, particularly those listed on the Johannesburg Stock Exchange, to comply with reporting and compliance frameworks such as the Global Reporting Initiative (GRI). “The GRI is an international independent organisation that helps businesses, governments and other organisations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others” (“Global Reporting Initiative,” n.d.). The GRI attempts to provide a means for standardising sustainability reporting, making it accessible for organisations to understand the impact they have on a range of areas relating to sustainability through their reporting framework. According to The GRI Report, Carrots and Sticks, South Africa is fairly advanced in its need for corporate sustainability and reporting. “Transparency and disclosure became part of the debate from an early stage in South Africa, even before the concept of sustainability reporting became popularised. Since the transition to democracy in 1994, measurement and reporting on social transformation issues (e.g., black economic empowerment and employment equity) have become entrenched in legislation. The focus on mining and other heavy industries has also had a positive effect on environmental and health and safety reporting practices” (GRI, 2013, P.34).

Reputation and the operating practices of the organisation are receiving increased scrutiny both internally and externally and this is contributing to the discovery of unsustainable practices within organisations and is helping to provide a clearer understanding of the current landscape and the degree to which unsustainable practices are pervasive within companies. In addition, what this granular view of the organisation is enabling, is a heightened awareness of what needs to change and, as such, business

models and strategies are being redefined and re-explored to align with meeting both regulatory and competitive targets. The whole organisational structure is being challenged, from the operating process, suppliers and the ways they are integrated into the business, to raw materials and the customer experience (Porter & Kramer, 2011). In the 2013 GRI Report, Carrots and Sticks, it outlines how “many more governments, market regulators and stock exchanges have been initiating reporting policies and regulation. Our global sustainability challenges need a joined-up response from different actors, and sustainability reporting is key. Governments are increasingly concerned with sustainable development, inclusive economic growth, increasing transparency, and building trust among their constituents. An increasing number of companies and organisations want to make their operations sustainable and to respond effectively to their external impacts. Establishing a sustainability reporting process helps them to set goals, measure performance, and manage change” (GRI, 2013).

What is also being transformed are the ways in which performance is defined within the organisation with regard to strategic objectives and individual performance metrics. This is becoming increasingly possible as a result of data now available to provide a quantified perspective of the organisation. Increased dependency on technology and the platforms and systems that are driving business operations is contributing to creating an influx of organisational data. The new availability of data is frequently focused on performance and the achievement of financial targets and is enabling companies to start making intelligent decisions with the ability to see effects of their choices quite quickly (Marr, 2010).

Globally, as the need for sustainable companies becomes a core strategy for business, companies are beginning to utilise various mechanisms for quantifying organisational activities in driving their sustainability agendas, harnessing technology platforms and creating a variety of internal information systems and data dashboards which able to quantify a variety of an organisation’s sustainability activities. This data is being utilised from a reporting perspective but, in addition, in certain companies, the information generation by these systems is being integrated into organisational practices. This enables the business to engage in analytical decision-making with a view of the short-term vs long-term benefits of their organisational decisions.

Internationally, companies are demonstrating their commitment to sustainable growth and, as will be demonstrated in more depth in the literature review section of this dissertation with examples from Interface and Danone (Vilanova & Dettoni, 2011), in order to provide real-time feedback to the organisations companies are using information systems, dashboards and other web-based tools to aggregate and display distilled data to generate insights. For clarity purposes, the definition of a dashboard is a graphical visualisation of distilled data, pulled from multiple sources, to provide individuals with insights that are accurate and real-time in order to be used in evidence-based decision-making (Marr, 2010, p.137). According to Volkoff, Bertels and Papania (2011), “one thing that is clear is that delivering on an organisation’s sustainability commitments comes with a high cognitive load, so it comes as no surprise that many organisations are turning to information systems (IS) to help manage the task” (p. 2). In South Africa, a dependence on technology in the context of sustainability is equally becoming increasingly important. This will be demonstrated further in this document in the literature review as well as in the research being generated in the case of Woolworths (Bitzer, Hamann, Hall, M., Griffin-EL, & E. W. (Eds.), 2015).

There is significant global research being performed across multiple organisations around how these organisations are embedding practices of sustainability into their organisations through the use of technology platforms. This research is however currently very case specific and there is limited research available to demonstrate the value of the adoption and embedding of such practices across organisations which don’t exhibit similar characteristics to those companies included in the existing research. The resultant challenge is that there is no defined and accessible framework for embedding sustainability across organisations in a way which makes it a core part of business strategy (Volkoff, Bertels, & Papania, 2011), and there is a need to resolve this gap by providing increasing opportunities for organisational research, within the context of sustainable companies, to occur. Practically this is important as those individuals within companies capable of addressing these challenges and implementing solutions have not understood the importance of this need and require practical and applicable examples of the value of this activity in order for them to buy-in to the benefits of this approach.

Several research pieces demonstrate the value that dashboards and technology platforms have played in aligning the sustainability activities of the business with its broader growth strategies such as (Vilanova & Dettoni, 2011) (Volkoff, Bertels, &

Papania, 2011), and the PWC report, Sustainability: Moving from compliance to leadership( 2011). These sources demonstrate the ways in which businesses are utilising various technology platforms to enable them to utilise data in a way which contributes to embedding sustainability into their organisations.

### **1.3. The Research Problem**

There is a need for more South African institutions to adapt their business models and ways of operating to align with new shared value mind-sets and increased sustainability regulations and to make use of available technology as an enabler for such. There accordingly exists an opportunity for research to generate insights from South African organisations with leading sustainability agendas to understand the ways in which these organisations are enabling such agendas through information technology platforms.

### **1.4. The Purpose of this Research**

The purpose of this research is to fill gaps in existing knowledge by using multiple case sites and identifying themes common to all as they undergo the process of embedding sustainability into their strategic decision-making. The approach to this research is grounded theory building as there is currently little existing knowledge upon which to base this research. The setting of this research is the South African corporate sector with six Johannesburg Stock Exchange listed organisations as the sites for conducting this research. This research attempts to identify the practical challenges that managers and those within the organisation face as they attempt to undergo the transition of using data and technology platforms to embed sustainability into their organisational strategy. The insights generated from this research will hopefully have practical implications for mitigating some of the challenges associated with embedding sustainable behaviours into organisations using such technologies. This research aims to test the proposition that technology platforms that have been utilised successfully in driving strategic decision-making in organisations, specifically where this relates to evidence-based decision-making and driving performance with data, should be similarly effective in organisations with regard to their application in driving organisational sustainability.

Key findings in this research are that technology, according to the individuals in the companies interviewed, appears to be an enabler of the broader sustainability transformations happening within organisations. As technology platforms relating to

quantifying sustainability in the context of the organisation become integrated more deeply into the day-to-day organisational activities and the organisations themselves mature in their use of these platforms, these technology platforms contribute to the embedding of sustainable organisational practices. This is in the form of data gathering, automation for both reporting and real-time feedback and tracking progression with regards to the meeting of specific sustainability targets.

Additionally, technology platforms are providing a granular view of an organisation's activities and are informing the direction of energy and innovation within the organisation. The role technology plays in each organisation explored differed in ways which, in terms of the research findings, appear to be based on individual business models and the particular approach to sustainability within each company. The role of specific context, or the driver behind the quantification of sustainability within the company, is what appears to be most significant driver and to drive the process, and the content, for how the data is integrated into strategic decision-making.

The structure of this dissertation intends to contextualise the problem area, demonstrate how the existing literature explores this problem area and identify the gaps in the research. The research approach, activities and results are subsequently explained and finally this document aims to demonstrate the practical application of this research in the form of a practical business model. This research has the ability to identify potential solutions which can be applied by South African companies toward driving the sustainability agenda of the broader South African economy, whilst still remaining value generating and profitable companies.

The objective of this research has been to identify themes and concepts that are common to the organisations interviewed and which have the potential to enhance the way in which sustainability is integrated into the organisational strategic decision-making within South Africa. The implications for this are largely practical and are intended to contribute towards the ways in which individuals within companies, responsible for driving this shift, approach their own embedding activities with regard to sustainability.

## **1.5. The Practical Exploration (The Inclusive Innovation)**

As this research is occurring in parallel with a practical research component, an exploration has been undertaken to design and generate a locally relevant inclusive

innovation prototype driven out of this research. A prototype, for the purposes of this research, was a basic business model outlining a company offering and takes the form of a business model.

This research was undertaken broadly to test the propensity for South African organisations to express receptiveness to a technological solution which would enable them to integrate sustainability more deeply into the organisation and thus the prototype ultimately developed for this research is a service-based consulting business model (see Appendix C).

This prototype has been designed to enable organisations to embed sustainability more deeply into their business strategies and operating models through both a process designed to revise the organisations strategic objectives and in addition embed these new objectives through the development of supporting technology-based systems and tools. The ultimate goal being quantifying these objectives and integrating performance measurement into the sustainability activities of the organisation. This two-part approach is proposed to ensure sustainability becomes embedded into the organisation's culture and operations.

This is outlined in more detail in the practical output of this research which takes the form of a business model that is included in the Appendix section of this research.

## **2. Chapter 2: Literature Review**

### **2.1. Chapter Introduction**

This literature review attempts to provide a narrative of the literature and existing insights that have informed the researcher's approach to this research. The intention is to contextualise the research undertaken in this study within the academic discourse that is shaping the organisational development landscape, specifically within the context of sustainability. The intention of this research is to demonstrate how new mind-set and new technology advances are transforming the previously acceptable way of conducting business by driving profits at the expense of society and the environment. The research attempts to demonstrate that it is no longer a viable long-term business model and companies are having to rethink their strategies in order to ensure the long-term sustainability of their organisations. The ways in which companies are approaching such ends provides meaningful insights into current organisational strategic changes and new business models.

Beyond the long-term risks that are connected to an increasingly uncertain external context, there are also internal organisational innovations that are transforming the ways companies are operating; these are arising as a result of technological advances and the influx of organisational data that is being utilised to inform business strategy. The ways that companies are utilising this approach to adapt and improve their business models in order to gear them for long-term sustainability are areas that will be explored in this literature review.

This chapter outlines four broad themes that relate to the research at an external macro organisational level, which themes becomes increasingly granular when applied internally and specifically as drivers within the organisation.

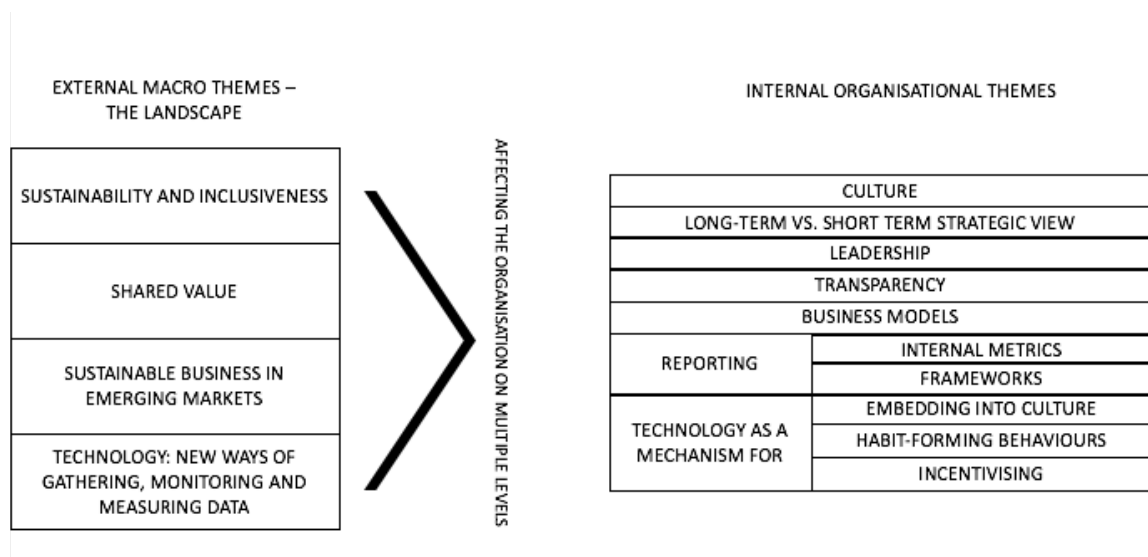


FIGURE 1: OVERVIEW OF REVIEWED THEMES

The outcome of this undertaking is to gain insight from different dialogues in order to locate the research in a theoretical framework. As the study of organisations is qualitative in nature, and because organisations are made up of people who change and grow and are therefore evolving at a rapid pace, no one piece of research sufficiently encompasses all areas that are being drawn on for this research. Accordingly, a variety of themes are explored below in order to paint a robust picture of the emergent concepts that are driving the sustainability and data-centric organisational landscape.

The structure of this literature review first attempts to highlight the changing environment in which business is operating and the external factors that are driving the organisational change agenda to be oriented more around sustainability. Once the research has been located in the academic discourse, the focus of the research thereafter shifts to the internal factors driving the organisational transition towards sustainable strategic decision-making, specifically the role played by technology in this regard. This second part of the literature review is the departure point for addressing the research question.

## 2.2. External Factors Shaping Organisations

### 2.2.1. Sustainability and Inclusiveness

In order to contextualise this research, and the landscape within which this research is being conducted, it is necessary to understand the various definitions

and synonyms for inclusiveness in the literature as well as to understand the logic behind this strategic business shift. For too long business, and the capitalist agenda, has been draining the environment and society of resources, behaving as if such resources are infinite and abundant, as opposed to the reality, where natural resources are finite and being depleted.

Sustainability “became popular following the publication of the Report of the World Commission on Environment and Development in 1987, which defined sustainable development as development that meets the needs of the present generation without compromising the needs and aspirations of future generations. Multiple definitions of sustainability have emerged since, and almost all of them portray sustainability as a “desirable” concept that makes it possible for human and other life forms to flourish on earth forever (Ehrenfeld, 2008) (Baral & Pokharel, 2016, P.2).

According to Baral & Pokharel (2016) businesses must make a profit to exist but their long term existence will be better ensured if they approach business from the perspective ensuring the success and profitability of the triple bottom line, that is people and planet as well as profit.

The result of this is that companies are being forced to re-evaluate their company strategy to ensure they are able to survive in the future. Sunter and Visser (2002) suggest that much like the church undergoing a reform in the 16<sup>th</sup> Century, so is capitalism also undergoing a transformation and this change, or ‘shapeshifting’, is in the form of sustainability strategies. Sustainability according to the duo is a revised, or new, way of perceiving the purpose and impacts of the business (Sunter & Visser, 2002). “For those companies that can adapt and respond quickly and intelligently enough, there are new markets to capture and profits to be made. For those that are ill prepared, sustainability is going to become a significant financial burden, even a threat to corporate survival” (Sunter & Visser, 2002, p.3). The depletion of once abundant resources is forcing complacent organisations to rethink their approach to profit-making and short-term gains and rather begin to focus on how to gear their business to grow in sustainable ways, instead of retaining a model of operating that is too heavily reliant on uncertain resources in an increasingly uncertain environment.

Bitzer et al. (2015) suggest that there is a growing need for business to play a role in responding to the global crisis and addressing problems around inequalities and resource degradation. According to the authors, there are an increasing number of opportunities available for business to step in to address issues that are negatively impacting society and the environment in a way that facilitates growth and development. These new economic opportunities have the potential to be both economically viable as well as being sustainable as they seek to tackle challenges that are inhibitors to growth (Bitzer, et al, 2015).

As organisations begin to look at their strategies within the context of the long-term value they are creating it is necessary to understand in more detail the characteristics of these companies. According to Dyllick and Hockerts (2002) a sustainable organisation is one where the needs of direct and indirect stakeholders are met without compromising on meeting the needs of an organisation's future stakeholders. This suggests that truly sustainable companies are those that are consistently thinking about the future success of their organisation by locating it within the future success of the society and environment within which the business operates. According to the authors, sustainable organisations seek to achieve a balance between economic sustainability, social sustainability and environmental sustainability (Dyllick & Hockerts, 2002).

In research performed by Eccles, Ioannou, and Serafeim (2014) relating to sustainability reporting, they identified sustainable organisations as modern organisations that compete in their categories by integrating external issues affecting the triple bottom line, the environment and society in their business strategic decisions and operations in alignment with global guidelines geared at addressing environmental and social challenges. As the authors outline in their research, there is a growing need for organisations to apply a systematic approach to sustainability to ensure they are meeting increasingly high standards for transparency and accountability (Ioannou & Serafeim, 2014).

### 2.2.2. The role of Society and the Environment within Business

Increasingly the notion of a mutual beneficial partnership between the economy and the environment within which it operates is becoming more relevant. In their article Porter and Kramer (2011) argue that the capitalist system is under siege and business can no longer profit at the expense of society. The role of society is not unfamiliar within the context of business strategy, however historically it has been located under the corporate social investment (CSR) umbrella, on the periphery of the organisation. Porter and Kramer (2011) suggest that this is unsustainable. According to Laszlo & Zhexembayeva (2011) many companies now understand the need to recognise social and business factors as a part of their performance. This recognition is however mostly bolted onto existing business strategies and is rarely embedded. An organisation's responsibility to society and the environment has in recent times been present within the organisational context but social responsibility has created unsustainable dependencies that are not built on value creation for both parties beyond funding and compliance. Visser (2010) posits that CSR has failed and has not had any desired effect on solving problems in society and reversing negative trends, rather it has succeeded in perpetuating macro challenges that communities and the economy are facing by failing to address these with solutions (Visser, 2010).

Visser suggested that we are moving into a new era of corporate social responsibility, moving from charitable giving towards strategic and ultimately systemic mechanisms for integrating social and environmental factors into the business context. He suggests that as organisations evolve along a spectrum of maturation in this area they will begin to evolve their relationship with their external social, environmental and political stakeholders by first strategically solving challenges that pertain to the sustainability of their business such as, in the example of Coca-Cola and their work in water conservation as referenced in the Visser article, and then ultimately beginning to solve macro systemic challenges at their roots (Visser, 2010).

Visser uses an analogous example, or metaphor, to demonstrate this evolution in CSR by painting a parallel between the evolution of the internet, from web 1.0 to web 2.0 and that of CSR. The reason Visser found this metaphor useful is

that much as the web was initially a series of unconnected products and ideas, it has evolved into an environment characterised by openness, peering, sharing and acting globally much like the trajectory of CSR. The table below, extracted from his research illustrates this parallel:

**TABLE 1: EVOLUTION OF CSR: COMPARISONS WITH WEB 1.0 AND 2.0 (SOURCE: VISSER, 2010, P. 14)**

<b>Web 1.0</b>	<b>CSR 1.0</b>
A flat world just beginning to connect itself and finding a new medium to push out information and plug advertising.	A vehicle for companies to establish relationships with communities, channel philanthropic contributions and manage their image.
Saw the rise to prominence of innovators like Netscape, but these were quickly out-muscled by giants like Microsoft with its Internet Explorer.	Included many start-up pioneers like Traidcraft, but has ultimately turned into a product for large multinationals like Wal-Mart.
Focused largely on the standardised hardware and software of the PC as its delivery platform, rather than multi-level applications.	Travelled down the road of ‘one size fits all’ standardisation, through codes, standards and guidelines to shape its offering.
<b>Web 2.0</b>	<b>CSR 2.0</b>
Being defined by watchwords like ‘collective intelligence’, ‘collaborative networks’ and ‘user participation’.	Being defined by ‘global commons’, ‘innovative partnerships’ and ‘stakeholder involvement’.

Tools include social media, knowledge syndication and beta testing.	Mechanisms include diverse stakeholder panels, real-time transparent reporting and new-wave social entrepreneurship.
Is as much a state of being as a technical advance - it is a new philosophy or way of seeing the world differently.	Is recognising a shift in power from centralised to decentralised; a change in scale from few and big to many and small; and a change in application from single and exclusive to multiple and shared.

Visser suggests that with this new way of integrating social responsibility into business, the future business success model is hinging on the organisation's ability to collaboratively find ways to tackle global challenges and as a result reap financial rewards (Visser, 2010).

### 2.2.3. Shared Value

Porter and Kramer (2011) explore a different way of articulating this evolution of the role society and the environment play within the business environment. They suggest, unlike Visser (2010), that the role of the corporate extends beyond responsibility and needs to be orientated around creating shared value. The solution they explore with their research is one of creating shared value, which creates a symbiotic relationship between the business and the society within which they operate (Porter & Kramer, 2011).

The differences between CSR and creating shared value or CSV or demonstrated in the following table extracted from Porter and Kramer (2011):

**TABLE 2: THE DIFFERENCE BETWEEN CSR AND CSV (PORTER & KRAMER, 2011, P.76)**

<b>CSR</b>	<b>CSV</b>

Value: doing good	Value: economic and societal benefits relative to cost
Citizenship, philanthropy, sustainability	Joint company and community value creation
Discretionary, or in response to external pressure	Integral to competing
Separate from profit maximisation	Integral to profit maximisation
Agenda is determined by external reporting and personal preferences	Agenda is company specific and internally generated
Impact limited by corporate footprint and CSR budget	Realigns the entire company budget
Example: Fair Trade purchasing	Example: Transforming procurement to increase quality and yield

In their exploration of how organisations can be sustainable over the long term the authors outline the need to harness the connections between societal and economic progress to drive growth. The authors suggest that in order for all stakeholders to profit from their relationship to each other they need to be generating value that is shared, or expanding the total pool of economic growth so that all parties benefit (Porter & Kramer, 2011).

For organisations to flourish they need communities that are flourishing within which to operate, and when there is a dependence on the environment for organisational growth, they need an environment that is evolving and flourishing. The concept of shared value redefines capitalism by transforming the definition of value, which was historically taken to mean profit, to value as

defined by how society and the economy are growing together in a way which is more holistically beneficial to all stakeholders.

According to the authors, “companies can create economic value by creating societal value. There are three distinct ways to do this: by reconceiving products and markets, redefining productivity in the value chain, and building supportive industry clusters at the company’s locations” (Porter & Kramer, 2011, p.11).

The core challenge with organisations moving towards a sustainable model is that as they optimise their business model and implement a sustainability lens through which they view corporate decision-making around suppliers, producers, manufacturing etc., they have to be cognisant of the fact that these decisions need to contribute to giving them a competitive edge in the marketplace or, at least, not to have a negative long-term cost implication in order for the organisations to be successful. The business model needs to find a balance between economic sustainability, social sustainability and environmental sustainability (Adams & Frost, 2008).

Sustainability needs to be viewed as in the case of sustainability leader, Novo Nordisk, a Danish pharmaceutical company that focuses primarily on diabetes care, as business logic (Krzus, 2011). Novo Nordisk understand their responsibility to their shareholders and in addition they believe in a strategy that benefits all their stakeholders. The business vision is geared at preserving our planet while preserving the quality of life of the inhabitants of our planet. For the chief executive officer of Novo Nordisk, Lars Sorenson, who was ranked number one in the 2015 Harvard Business Review rankings of the one hundred best performing chief executive officers in the world for 2015, “our philosophy is that corporate social responsibility is nothing but maximising the value of your company over a long period of time, because in the long-term, social and environmental issues become financial issues” (Ignatius & McGinn, 2015).

#### 2.2.4. Sustainable Business in Emerging Markets

Porter and Kramer are of the view that there are equal or sometimes even greater opportunities for creating shared value in emerging markets and developing societies (Porter & Kramer, 2011). In their research done on economic growth

in emerging markets Ismail, Ansell, and Kleyn (2012) describe the new views that are emerging regarding how organisations can create sustainable markets in emerging economies in ethically sensitive ways. This historic approach of ‘milking’ the market for profits without ensuring the market is sustainable is no longer a viable business model and there is now a drive for companies to identify mechanisms that ensure the sustainability and growth of their organisations in conjunction with the growth of the societies and communities within which they operate. According to Ismail et al (2012) “sustaining and growing a robust future market where the firm can operate is becoming a jumping off point” for organisations looking to benefit from fairly untapped market environments with reduced risks (p.5).

According to Hamann (2006) business has the ability to contribute to sustainable development in emerging markets if they are able to redirect their focus away from a purely profit making mind-set and channel their energies into finding means of creating value within the broader social and environmental context within which they operate. According to Hamann (2006) some of the challenges that are currently inhibitors to economic growth in South Africa have the potential to provide innovative companies with new business opportunities.

Crane, Palazzo, and Spence (2014) suggest that the notion of corporate social responsibility and creating shared value is simplistic and naïve and ignores the existing tension between the economic sector and the social and environmental context within which it operates. Their view is that such a notion is reactionary rather than being transformative to factors affecting the business environment. They suggest that in the interest of creating perceived shared value, organisations have the potential to negatively impact the communities within which they operate. Whilst they raise relevant points regarding the need to resolve the tensions between corporates and social and environmental stakeholders, they do not successfully refute the value that having a socially responsible shared value strategy is a better approach to business than other economic models.

## 2.2.5. The Role of Technology and its Ability to Capture, Monitor and Measure Data

The rapid growth of the technology industry is having a transformative effect on how businesses operate. Tools are being developed to generate quantitative data on all facets of a businesses operations and the availability of more data enable businesses to better understand the broader effects of its activities (Etzion & Aragon-Correa, 2016).

Bernard Marr (2010) explains how in today's world with the multiple data sources available, individuals and organisations are able to harness this data to provide real-time insights which influence strategic decision-making (Marr, 2010). According to Marr (2010), organisations are starting to equip their businesses with data analysts who are able to filter the data in a way that generates business insights. He outlines the processes organisations are undertaking as they become more intelligent in their decision-making in the model set out in the diagram below.

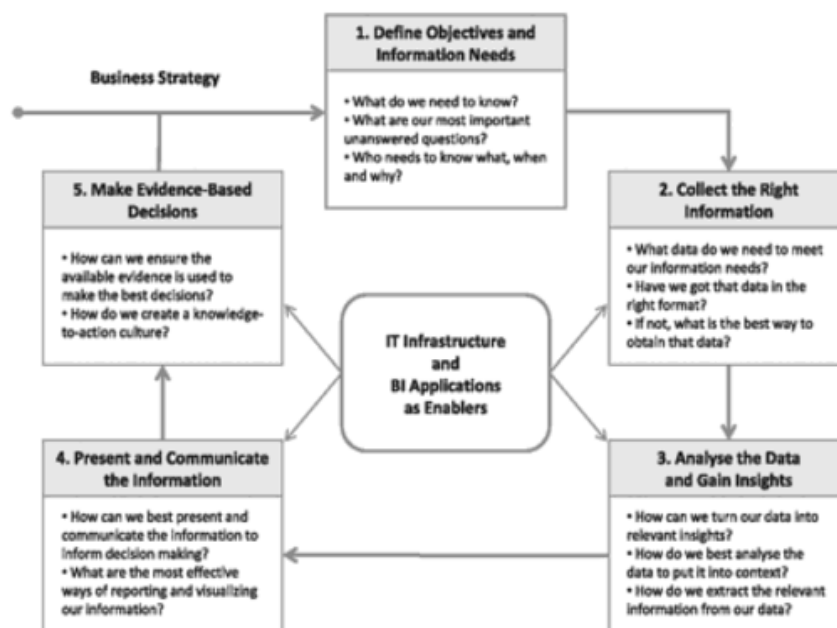


FIGURE 2: BERNARD MARR'S EVIDENCE-BASED MANAGEMENT MODEL (SOURCE: MARR & DAVENPORT, 2010, P.22)

As a result of business becoming more focused on performance metrics, the role of technology is becoming increasingly important as a means of driving the shift towards analytical decision-making. According to Johannessen and Olsen

(2003), “in the new business environment, characterised by an increased turbulence and complexity, an organisation’s capacity to create and sustain competitive advantages lies in what it knows, not what it owns” (p.1). What this suggests is that in an environment that is constructed of multiple internal and external stakeholders, in an increasingly regulated and dynamic market within oftentimes global structures, organisational leadership requires as much information as possible about its operations, performance and impacts in order to take the best possible decisions for the strategic success of their organisations.

According to a study performed by the MIT Sloan Management Review, in conjunction with the IBM Institute for Business Value, more and more senior executives are turning to analytics to validate their intuition. Of the many organisations and executives interviewed for this study, a key finding was that the organisations that were viewed as top performing were using analytics five times more than the lower performing organisations interviewed for this study. The responses to the study suggest that management and senior decision makers want the decisions regarding the running of their business to be made using data-driven insights to ensure credibility of the insights driving the decision (Lavage, Lesser, Shockley, Hopkins, & Kruschwitz, 2011).

As individuals running organisations require more assurance that the decisions they take provide the best outcomes for their organisations they are leaning more on analytical scenarios and quantifiable evidence to support their choices. This is taking many different forms across organisations as they evolve in the ways they utilise the data available to them. The study suggests that there are three levels or degrees in which the adoption of analytics is occurring. These are the aspirational level, where the organisation is just beginning to use analytics to improve basic efficiencies in the business and begin quantifying the activities, the experienced level, where insights from the aspirational phase are being utilised by the organisation to optimise the way the business operates and the transformed level where the manner in which the business operates is ultimately transformed from the insights derived in the first two levels, driving its competitive edge within the market.

The ways in which this is occurring amongst the businesses surveyed for this dissertation are outlined in the following table extracted from the authors' report:

**TABLE 3: THE THREE STAGES OF ANALYTICS ADOPTION (SOURCE: LAVALLE ET AL., 2011, P 6)**

**THE THREE STAGES OF ANALYTICS ADOPTION**  
 Three capability levels — Aspirational, Experienced and Transformed — were based on how respondents rated their organization's analytic prowess.

	ASPIRATIONAL	EXPERIENCED	TRANSFORMED
<b>Motive</b>	<ul style="list-style-type: none"> <li>•Use analytics to justify actions</li> </ul>	<ul style="list-style-type: none"> <li>•Use analytics to guide actions</li> </ul>	<ul style="list-style-type: none"> <li>•Use analytics to prescribe actions</li> </ul>
<b>Functional proficiency</b>	<ul style="list-style-type: none"> <li>•Financial management and budgeting</li> <li>•Operations and production</li> <li>•Sales and marketing</li> </ul>	<ul style="list-style-type: none"> <li>•All Aspirational functions</li> <li>•Strategy/business development</li> <li>•Customer service</li> <li>•Product research/development</li> </ul>	<ul style="list-style-type: none"> <li>•All Aspirational and Experienced functions</li> <li>•Risk management</li> <li>•Customer experience</li> <li>•Work force planning/allocation</li> <li>•General management</li> <li>•Brand and market management</li> </ul>
<b>Business challenges</b>	<ul style="list-style-type: none"> <li>•Competitive differentiation through innovation</li> <li>•Cost efficiency (primary)</li> <li>•Revenue growth (secondary)</li> </ul>	<ul style="list-style-type: none"> <li>•Competitive differentiation through innovation</li> <li>•Revenue growth (primary)</li> <li>•Cost efficiency (secondary)</li> </ul>	<ul style="list-style-type: none"> <li>•Competitive differentiation through innovation</li> <li>•Revenue growth (primary)</li> <li>•Profitability acquiring/retaining customers (targeted focus)</li> </ul>
<b>Key obstacles</b>	<ul style="list-style-type: none"> <li>•Lack of understanding how to leverage analytics for business value</li> <li>•Executive sponsorship</li> <li>•Culture does not encourage sharing information</li> </ul>	<ul style="list-style-type: none"> <li>•Lack of understanding how to leverage analytics for business value</li> <li>•Skills within line of business</li> <li>•Ownership of data is unclear or governance is ineffective</li> </ul>	<ul style="list-style-type: none"> <li>•Lack of understanding how to leverage analytics for business value</li> <li>•Management bandwidth due to competing priorities</li> <li>•Accessibility of the data</li> </ul>
<b>Data management</b>	<ul style="list-style-type: none"> <li>•Limited ability to capture, aggregate, analyze or share information and insights</li> </ul>	<ul style="list-style-type: none"> <li>•Moderate ability to capture, aggregate and analyze data</li> <li>•Limited ability to share information and insights</li> </ul>	<ul style="list-style-type: none"> <li>•Strong ability to capture, aggregate and analyze data</li> <li>•Effective at sharing information and insights</li> </ul>
<b>Analytics in action</b>	<ul style="list-style-type: none"> <li>•Rarely use rigorous approaches to make decisions</li> <li>•Limited use of insights to guide future strategies or day-to-day operations</li> </ul>	<ul style="list-style-type: none"> <li>•Some use of rigorous approaches to make decisions</li> <li>•Growing use of insights to guide future strategies, but still limited use of insights to guide day-to-day operations</li> </ul>	<ul style="list-style-type: none"> <li>•Most use rigorous approaches to make decisions</li> <li>•Almost all use insights to guide future strategies, and most use insights to guide day-to-day operations</li> </ul>

A key insight that arose from the study was that a barrier to data-driven decision-making lies in an inability to properly understand the insights derived from large volumes of data. As companies progress towards becoming more analytical, there is a need for systems and tools to be in place within the organisation to synthesise and simplify data in ways that enable individuals in the organisation to understand and derive insights to be used in their decision-making. According to the research, especially at an executive level, there needs to be a way to bring the data to life through visualisations, dashboards, etc. so that the information can be absorbed in ways which make sense even if individuals are not analytically minded themselves (Lavalle et al., 2011).

Business intelligence is predominantly about getting the right information to individuals at the right time in a way which is insight generating and not overwhelming. As a result of this need one can see a shift in how data is being represented with the rise of web-based performance dashboards visually representing the data for the organisational members (Dover, 2004). Visually representing data enables organisations to identify the gaps between their objectives and reality in a way which enables them in creating an internal agenda to work towards meeting these objectives (Marr & Davenport, 2010).

According to the PWC report, Sustainability: Moving from compliance to leadership (2011), companies can be plotted along a spectrum of maturity based on the degree to which they have embedded sustainability into their strategic decision-making as shown in the figure below:



FIGURE 3: THE SUSTAINABILITY MATURITY PATH (SOURCE: PWC SUSTAINABILITY: MOVING FROM COMPLIANCE TO LEADERSHIP (2011))

## 2.3. Internal Organisational Factors:

### 2.3.1. Technology and Sustainable Data

As the existing research shows, across organisational disciplines data and analytics are informing organisational decision-making and driving organisational change. This is becoming increasingly evident in the sustainability initiatives of organisations.

The outcome of adjusting performance measures to include sustainability metrics is that job descriptions are being transformed. In a study performed in 2008 by Adams and Frost the effects on companies of introducing the balanced scorecard and triple bottom line measures into their Key Performance Indicators (KPIs) is outlined in an extract from their report set out below:

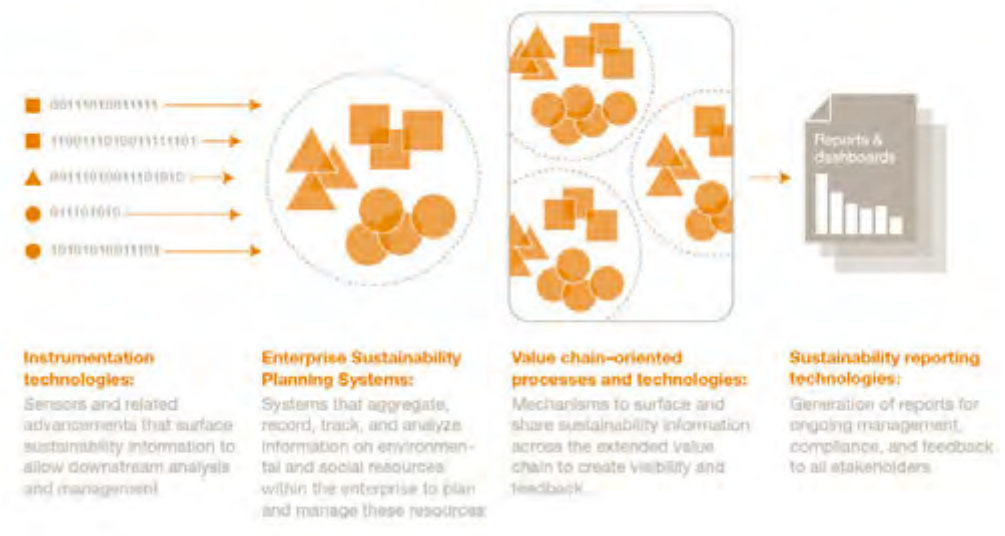
“we could look at our sales director ... you could say that his job has evolved from the dinosaurs. Ten years ago it was about buying as much electricity as you could, as cheap as you could from generation, and selling it to as many customers as you could. So his KPI's would quite clearly be profit margin ... He has got a couple of regulatory instruments to manage in terms of delivering domestic energy efficiency commitments. He has got a certain amount of his energy to be supplied from renewables or sources with green certificates. So his new KPI's are going to be on his new scorecard” (Adams & Frost, 2008, p.295).

The outcomes of the study demonstrated how fundamentally job descriptions based on new methods of defining KPIs, had evolved (Adams & Frost, 2008).

In the report Sustainability: Moving from compliance to leadership ( 2011), PWC identifies four ways that technology is having an effect on embedding sustainability into businesses:

- “instrumentation technologies help surface and collect information germane to sustainability;
- enterprise sustainability planning (ESP) systems provide a broader context for aggregating, managing, and analysing captured information;
- value-chain-oriented processes, practices, and technologies help organisations extend strategic sustainability efforts beyond internal corporate boundaries; and
- sustainability reporting technologies can take the aggregated information and provide performance metrics to stakeholders.”

This is visually represented in the below diagram taken from the same report:



**FIGURE 4: EMERGING TECHNOLOGIES THAT COLLECTIVELY CAN ADVANCE SUSTAINABILITY EFFORTS AND OBJECTIVES (SOURCE: “SUSTAINABILITY: MOVING FROM COMPLIANCE TO LEADERSHIP,” 2011)**

Sustainability performance management is becoming integrated into overall performance through both sustainability accounting tools and sustainability reporting tools (Crutzen, 2011). This evolution is causing companies to explore developing systems that enable them to measure their own behaviour in quantifiable ways to ensure they are acting in the interest of all of their stakeholders and to communicate the results of their activities (Perrini & Tencati, 2006).

Companies with a larger focus on areas of the business relating to its sustainability are spending a significant amount of time investing in tools that evaluate and quantify their activities in order to guide their decision-making. This is demonstrated by the companies outlined below and serves to show the ways in which highly sustainable organisations are utilising analytics to track their sustainability activities and embed sustainability into their business operations.

Companies are developing sensing software tools to monitor and track resource consumption, so that they have heightened awareness and respond in meaningful ways. “The Dow Chemical Company, which created a Sustainable Chemistry Index, increased its sales of sustainable chemistry products between

2009 and 2010, rising from 3.4 percent to 4.3 percent of all revenue. By 2015, it expects such sales to be 10 percent of revenue (“Sustainability: Moving from compliance to leadership,” 2011”).

In order to ensure that Danone was meeting their sustainability goals as an organisation they created a strategic sustainability tool called The Danone Way to ensure they were meeting the targets outlined in their Danone Way Fundamentals and broke down sustainability into five key areas of focus for the business. This tool integrates their sustainability measurements into their broader SAP system to provide an integrated view of the performance of the organisation. These “Fundamentals” are the minimum standard that is required by the organisation and exceeding these benchmarks is often linked to performance bonuses. At an executive level one third of the executive performance bonus is linked to sustainability-related metrics. These metrics extend to their suppliers and supply chain and serve to illustrate the degree to which the company is becoming more sustainable in a quantifiable way. External audit firms audit the entire reporting process that Danone undergoes and the results are made publicly available (Vilanova & Dettoni, 2011).

Interface, a North American multinational that designs and produces carpets, in an effort to ensure that they are on track to meet their sustainability objectives set out in their Mission Zero programme, that is to have a zero negative impact on the environment by 2020, developed EcoMetrics by Interface, an internal tracking system, which tracks all of the metrics that affect their sustainability goals and quantifies this into inputs and outputs (Vilanova & Dettoni, 2011).

The key metrics the Interface tool tracks are “waste elimination in terms of cumulative avoided cost, waste elimination in terms of waste sent to landfills, waste elimination through the ReEntry program, energy use, energy consumption profile, renewable energy, recycled and biobased materials, greenhouse gas emissions, water intake – broadloom, water intake – modular carpet, safety” (Vilanova & Dettoni, 2011, p.79). Interface does not undertake this measurement solely for verification purposes and external reporting, rather they fundamentally integrate insights gained from this tool into how they focus their resources.

In the case of Amcor Australasia, a manufacturer of plastics, fibre and metal packaging in Australia, the company set themselves a sustainable strategic vision whereby they would need to implement positive performance measures regarding health, environment and safety. To ensure they met these Positive Performance Indicators the company began a process of developing and designing a system to track these indicators. They ultimately built a web-based balanced scorecard. This led to systemic change within the organisation with new teams created to ensure these objectives were met (Hunting & Tilbury, 2006).

Nike's designers utilise the Environmental Apparel Design Tool "which (tool) designers use early in the product creation process to inform design and development decisions and to reduce the environmental impacts related to materials, manufacturing waste, and garment treatments. The tool allows suppliers to understand Nike's approach to scoring apparel products for sustainability while providing feedback to Nike" ("Sustainability: Moving from compliance to leadership," 2011).

Locally Woolworths, a South African headquartered retailer characterised by a deep commitment to the social and environmental context within which it operates, has developed its Good Business Journey ("Gbj") wherein it outlines its five-year sustainable development goals to combat four key challenge areas that are relevant both locally in South Africa as well as being of global importance. These areas are: transformation, climate change, the environment, and social development (Methner, Hamman & Nilsson, 2015). The business is characterised by its deeply embedded sustainable stakeholder relationship model and is globally recognised as a leading organisation for its sustainable social and environmental strategic growth initiatives.

In order to quantify these goals into measurable objectives, an index was developed with over 200 indicators that informed the Woolworths Gbj sustainable goals; these were thereafter turned into an internal information system, developed by the organisation's IT department alongside external consultants, that captured and aggregated the company's performance relative to their key sustainability indicators. Bitzer et al. (2015) outline that "the

aggregate scores could then be visualised (by Woolworths) in bar-charts which provided executive managers and board members with an accessible overview of how the company was performing relative to targets in particular thematic areas or in specific business units” (p.92). More about Woolworths sustainability metrics will be explored in the research section of this paper.

From the above examples it can be demonstrated that technology-based systems and tools have the potential to enable sustainability-orientated organisations to have an integrated view of their business and targets to ensure they are meeting their business objectives.

In addition to tracking the activities of the organisations, the development of these systems themselves contributes to consistently embedding sustainability into the organisational dialogue as a granular view of the organisation is explored and allows for the further optimisation and improvement of these tools (Bitzer et al., 2015).

The challenge with the above cases is that each organisation utilised a different framework for defining their internal performance indicators. Furthermore, the challenge with creating internal tools to measure and report on sustainability within organisations, according to Perrini & Tencati (2006) is that there is a lack of standardised metrics and this allows organisations to potentially engineer this data to suit their internal organisational agenda. This highlights an additional challenge in that while some metrics may be common across organisations, no one organisation is identical to another and thus the measurements will most likely not apply consistently to standardise the reporting process. In one respect it is necessary for companies to tailor-make internal measurement systems that drive performance within the context of the specific organisation, such as in the case of Woolworths with their internally focused ‘good business journey’. However, there is a need for companies to improve the comparability of external reports in order to permit for an assessment on the performance across companies by its investors, shareholders and other stakeholders. The GRI does attempt to standardise things somewhat from an external perspective, with its standardised disclosure indicators (Methner, Hamman & Nilsson, 2015). The

challenge arises in identifying the right balance between external requirements and internal growth objectives driven through sustainable strategy.

One way in which companies committed to credible sustainable reporting are mitigating scrutiny about their sustainability performance results is by utilising the services of third party auditors, who, while not yet mandatory for non-financial performance, contribute to assuring that these metrics are consistent and verifiable. Externally audited metrics also contribute to integrating these measurements into the organisational strategy as deeply as financial results (Eccles et al., 2014).

### 2.3.2. Embedding Sustainability in Organisations

The notion of how an activity or behaviour becomes embedded in an organisation is becoming increasingly relevant specifically in the context of sustainable strategic decision-making. This is as a result of the fact that short-term strategies and individual projects do not bring about sustainable organisational developmental change. As a result, more meaningful change initiatives need to be understood in order to evolve organisational culture and truly transform the organisation at an intrinsic level.

Ken Dooley (2014) demonstrates the difference between embedded and short-term sustainability in his example illustrating the difference between short-term, or as he terms it, bolt-on strategy and long-term or embedded strategy where he describes two scenarios relating to reducing truck emissions. A bolt on approach may be to replace the trucks with less environmentally impactful vehicles whilst an embedded strategy may undertake a process of re-evaluating their logistics and transportation model (Dooley, 2014).

In the following table extracted from his research, Dooley illustrates this difference between these two approaches in a succinct format:

**TABLE 4: KEY DIMENSIONS OF BOLT ON SUSTAINABILITY AND EMBEDDED SUSTAINABILITY EXTRACTED FROM DOOLEY 2014 (SOURCE: DOOLEY, 2014, P 7)**

	<b>Bolt-On Sustainability</b>	<b>Embedded Sustainability</b>
Implementation time	Fast	Slow
Level of disruption of operations	Low	High
Influence across fields of operation	Narrow	Wide
Investment required	High	Low
Longevity of solution	Short	Long
Risk of failure	Low	High
Reduction in final performance due to losses during implementation	Zero	Zero-Low

The long-term benefits of embedding sustainability into strategy have led to a variety of different explorations on how this can be done. One way of embedding sustainability into future organisations is the role of management education and the responsibility of business schools to equip leaders with the requisite skills regarding sustainability and long-term growth so that they join companies with the correct mind-set (Rake & Grayson, 2009).

This is beneficial as a starting point but a more focused mechanism for embedding sustainability into existing organisational culture, to becoming the way things are done, is required to implement a shift in organisational culture towards one of sustainability.

In their report on embedding sustainability into organisational culture Bertels et al. (2010) interviewed a variety of sources to identify different ways they are embedding sustainability into their organisations. They did this in order to create a framework for embedding sustainability into organisations. This framework makes use of two core dimensions. The first dimension, which makes up one axis of a framework that appears in the next paragraph, is the organisation's intent or the content of what they are trying to accomplish. This is broken down into two goals, these are either goals aimed at fulfilment that talks to existing commitments or goals aimed at innovation in relation to future performance. The second dimension is the organisations' approach to the fulfilment of such goals, that is the 'how' or way in which they are going about this activity. This dimension is broken down into goals aimed at formal and informal approaches to approaches (Bertels et al., 2010).

This is demonstrated in the figure below:

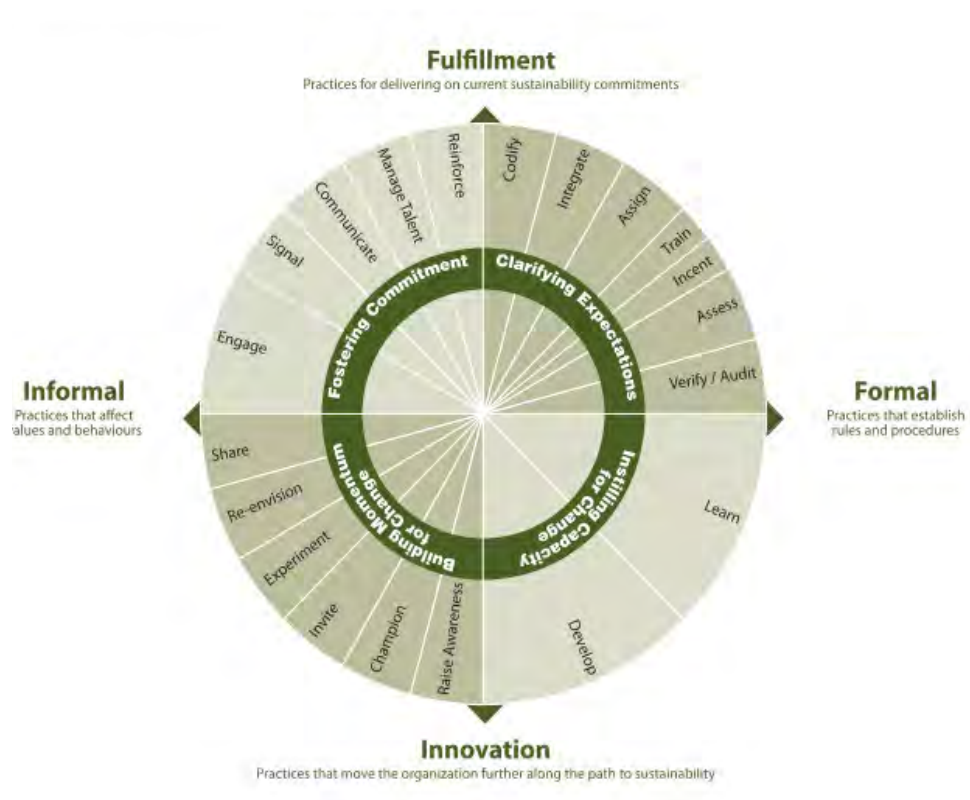


FIGURE 5: A PORTFOLIO APPROACH TO EMBEDDING SUSTAINABILITY (SOURCE: BERTELS ET AL., 2010, P. 14)

The four quadrants demonstrate how different change initiatives relating to sustainability can fit within this framework. Once there is an understanding of

where something sits on the framework, the authors provide a guideline on how this change initiative may be embedded into the organisation.

For the purposes of this research, the focus will be on the quadrant of the framework that aligns with performance metrics and the framework that relates to the role of dashboards, data and sustainable strategic decision-making.

The quadrant that best represents this behaviour is in the top right of the framework in the area that describes the embedding process related to practices aimed at formal fulfilment. The practices in this quadrant are those that contribute towards integrating sustainability into the operational formal aspects of the organisational culture, or as Bertels et al. (2010) term it ‘clarifying expectations’. These practices aim at taking the informal practices with regard to sustainability within the organisations and formalising them in a way which articulates or clarifies the expectation of how the organisation intends to successfully implement the specific sustainable practice.

The below tables outlines the detailed stages of this quadrant:

TABLE 5: CLARIFYING EXPECTATIONS (SOURCE: BERTELS ET AL., 2010 P. 15)

CLARIFYING EXPECTATIONS (Formal Practices Aimed at Fulfillment)						
Codify	Integrate	Assign	Train	Incent	Assess	Verify/Audit
✓ create policies	✓ into product design and life cycle	✓ assign responsibility to senior leaders	✓ train	Incent	inventory	audit
set goals	into mission, vision and values	✓ create roles			develop metrics	verify
operationalize	into strategy and business plans				monitor / track	
	into business				report	
	into existing roles					

The notion of embedding behaviour utilising codified practices and formalised documenting processes contributes to ensuring the sustainability initiative is top of mind in an organisation’s consciousness as it becomes part of everyday behaviour. Associating formal performance metrics to these activities further contributes to embedding of such activities into the organisation. The act of monitoring or tracking is inextricably linked to quantifying practices and as such the role of technology systems for quantifying sustainability metrics align with the behaviours outlined in this stage of the embedding process and serve as a

mechanism for formally embedding sustainability into the organisation (Bertels et al., 2010).

In their study of Suncor Energy, one of the world's largest energy companies, Volkoff et al. (2011) explored the role of technology in embedding sustainability into the organisation as the organisation shifted towards their strategic priority of becoming more sustainable. Their research attempted to answer the question "in what ways can information systems support an organisation's strategic transition towards sustainability?" (Volkoff et al., 2011, p.1).

What the researchers discovered was that any large scale strategic transformation involving sustainability comes with a significant amount of information that needs to be cognitively processed within the organisation and as a result there is increasing dependence on information systems or technological solutions to synthesise this information into manageable and insightful data. Suncor developed several systems to attempt to facilitate achieving their sustainability targets. These systems positively contributed to the embedding of sustainability within organisational culture "by providing necessary information to those who need it" (Volkoff et al., 2011, p. 5), however there were challenges with the systems used by the company and the results of this research showed that there are limitations to the solutions these information systems are able to provide to complex organisations. The reasons for such limitations related to the relationship between the people in the company and the systems being implemented not having been clearly thought through and formally embedded.

What can be understood from the research of both Bertels et al. (2010) and Volkoff et al. (2011) is that systems and tools designed to aggregate data relating to organisational sustainability activities have the potential to contribute towards embedding sustainability into the organisation. This finding is however limited to the extent to which the organisation is able to integrate practices that align with a data-driven sustainability strategy. If these practices are formally coded into the behaviour of the organisations and there is a common

understanding of the expectations relating to these activities, then these tools are valuable in the embedding process.

This is further outlined in research conducted into organisational neuroscience where Rock and Schwartz (2007) outline how, when implementing an organisational change, persistent focus and paying attention helps to embed such change in the neural pathways of the individuals within organisations. According to the research, repeated and purposeful focused attention to a specific behavioural initiative, such as inputting data into a dashboard, or checking on progression towards a target, can influence mindful change and contribute to behaviours becoming stable changes in the brain's structure (Rock & Schwartz, 2007). This suggests that technology and tools that encourage repeated action have the potential to contribute towards embedding an activity into the organisation. It can accordingly be deduced that the act of inputting data daily relating to the sustainability of a particular area of an organisation could have a long term effect on the embedding of that behaviour within the organisation. Such practices can be further embedded when the inputting of data has an immediate response that demonstrates success or failure. If the data inputted demonstrates that a target is going to be met, it is associated with success and provides immediate satisfaction. Whereas if data inputted demonstrates failure to reach a target, it provides the impetus for encouraging improved effort and innovation with regard to how the target is achieved (Marr, 2010).

In addition to compliance there is a growing notion amongst companies that setting targets aligned with strategic objects and measuring against these targets contributes to driving organisational growth in the form of performance management, strategy design and implementation. Within the organisational context, performance can be directly attributed to the achievement of predetermined objectives or targets which drive the important strategic directions of that company (Bourguignon, 2000). In the case of organisational strategies geared at driving increased strategic sustainability, the metrics that are of significance to judging organisational performance will intrinsically include objectives and targets relating to areas of sustainability.

Hamann (2006) posits that from a management perspective, senior leaders who are serious about driving a sustainability agenda reflect this agenda in the performance measurement relating to the operations of an organisation. Important insights can be generated from the way in which leading sustainability organisations integrate sustainability performance metrics into their overall performance strategy, creating a win-win approach.

According to a study done in 2009, high sustainability companies, i.e. those that prioritise sustainable initiatives and have integrated them into their core business strategies, are more likely to link executive compensation to a balanced set of metrics: social, environmental, economic and also external perception (Eccles et al., 2011). The 2009 study finds that these organisations are also more likely to be transparent about non-financial performance measurements.

As the economy moves towards an analytical culture of organisational decision-making, businesses that use a variety of evidence-based metrics to inform their decision-making are likely to appeal to a market of investors looking to invest in sustainable and future-looking companies (Eccles et al., 2011).

Organisations have goals and objectives they need to achieve, as such, firms that have ambitious sustainable development goals will be more likely to achieve more sustainable performance than firms that merely have financial objectives. Besides increased appeal to shareholders, there are a variety of other motivations for managing sustainable performance. One such motive is public acceptance, or improved public perception about an organisation and its products and services. A further motive is brand-related and links to a perceived superiority in the market and an increased competitive edge.

Organisations that are utilising integrated metrics to drive business performance are often driven by both internal and external factors; these are often leadership, values and beliefs that are driving such positioning as well as legislation or pending legislation that is increasingly regulating the business environment (Crutzen, 2011).

An example of a firm utilising their sustainability goals to drive innovation within the organisation in the various markets within which they operate is

Danone. Danone's business strategy integrates sustainability into its key organisational pillars and has defined key sustainability goals for its business. However, because Danone has operations in multiple markets, it does not dictate how these sustainability goals will be achieved by each market, rather they leave that up to each market to solve independently. This enables different markets to identify ways to innovate to reach these goals. The organisation firmly believes that they will not grow their business by fighting for market share but rather by growing through innovation (Vilanova & Dettoni, 2011).

An illustration of how Danone is using their sustainability goals to drive business innovation is demonstrated by a project aimed at the reduction of the group's methane emissions, a key environmental impact of the group. A strategic target of the organisation was the reduction of Methane gas emissions by a specific and tangible amount as determined by the group's quantified targets relating to the sustainability of the organisation. An innovation lab was set up to attempt to reduce the methane emissions emitted by Danone's cows; a pilot project was set up to supplement the cows' diets with linseeds; the results thereof were reduced emissions as well as the contribution of the linseeds toward enhancing the nutritional content of Danone's milk. Such a sustainability initiative accordingly added to Danone's market competitiveness (Kruglianskas & Vilanova, 2013). It has been demonstrated that organisations with strategic commitments to sustainability have the ability to innovate internally to create internal capabilities for achieving these objectives (Bitzer et al., 2015).

Beyond the 'better for business' argument, another key driver of increasingly sustainable decisions being taken by organisations is the increased responsibility and accountability placed on these organisations by the regulatory frameworks within which they operate. Increasingly there is a requirement for companies to report on their integrated activities. While not mandatory for all companies there is a growing requirement for reporting to be done to achieve increased transparency amongst organisational operating practices.

According to Eccles, Ioannou, and Serafeim (2012) there are four core pillars or characteristics that make up highly sustainable organisations. These pillars include organisational governance, internal and external stakeholder

engagement, long-term vs. short-term methods (time horizon) of decision-making, and measurement/reporting. The ability to quantify activities and associate metrics to integrated organisational targets is what makes reporting an area of significance when evaluating the growth strategies of these organisations. Reporting places increased scrutiny on organisations and provides a quantified and verified view of whether the organisation is actually achieving what it purports to be achieving. While intelligent business decisions are one component of data-driven organisations, the rise in reporting and data decisions significantly contributes to improving public perceptions about organisational transparency. Organisational reporting across all facets of business operations is becoming a requirement amongst all organisations wishing to retain relevance in an evolving sustainability context with a growing need for transparency across all organisational activities in an effort to restore trust in business as a whole (Krzus, 2011).

In the GRI Report, Carrots-and-Sticks, it outlines how “social media now enables widespread participation and engagement. Companies are expected to create sustainability reports that address the points raised by various stakeholder groups through so-called 360° reporting. There is also greater awareness of corporate responsibilities, as well as a recognition that sufficient technology is available for governments and business to redouble their implementation efforts” (GRI, 2013, P. 19).

Rewarding people for acting sustainability has a profound effect on incentivising certain types of behaviour. “Raising awareness to drive employee engagement is essential to embed sustainability values. “IT plays an important role here. “When you’re developing and reporting and really working on being transparent, a whole new internal conversation occurs around all the indicators. It raises awareness and forces companies to look at how they’re performing,” says Ryan Whisnant, director of sustainability at SunGard” (“Sustainability: Moving from compliance to leadership,” 2011).

### 2.3.3. Culture

It is necessary for the purposes of this research to briefly discuss culture in the context of the organisation as organisational culture appears to be of relevance throughout this research. Culture, according to Schein (1984) is the “pattern of basic assumptions that a given group has invented, discovered or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems” (Schein, 1984, p.3). Culture is the norms, values and assumptions that make up the organisation, enabling the members of the organisation to engage with one another in that context and is sometimes viewed as the way things are done in a specific context. Cultures of sustainability therefore relate to the norms, values and assumptions that the organisation has in the context of their views and behaviours relating to their business in relation to the society and environment within which they operate. As companies become more reliant on data relating to sustainable metrics as a mechanism for embedding sustainability into their business strategies, it begins to have an effect on the culture of the organisation in relation to transparency and values. According to Laszlo & Zhexembayeva (2011), “market leaders in every sector are finding that a brand/culture based on creating stakeholder value is rapidly becoming a source of competitive advantage” (P.39). This finding surmises that as companies start adding sustainability KPI’s to their performance indicators they are able to more confidently claim that sustainability, social and ecological issues are a core component of their culture, identity and strategy (Laszlo & Zhexembayeva, 2011).

### 2.3.4. Long-term vs. Short-term View

A barrier to organisational long-term sustainability is the view that the business is mandated to create shareholder value, which is viewed quarterly and is a short-term metric. This stock market perspective has led companies to value short-term gains as this determines their perceived value while frequently failing to make decisions that are beneficial to the long-term sustainability of their organisations. This has had a detrimental effect on sustainable business models

as it is contrary to the principles of a sustainable organisation (Dyllick & Hockerts, 2002).

A key characteristic of sustainable organisations is their ability to balance both meeting short-term shareholder expectations whilst ensuring they are making decisions with long-term sustainability benefits. Corporate sustainability, according to Linnenluecke and Griffiths (2010) is multifaceted and presents itself in a variety of ways in organisations. In a study performed on 90 high sustainability companies by Eccles et al (2014) the results highlighted that “these companies are also significantly more likely to establish a more comprehensive and engaged stakeholder management process while maintaining a longer-term orientation: they are owned by proportionately more long-term oriented investors and they communicate more long-term information in their conference calls with sell-side analysts” (Eccles et al., 2014, p.3). From the literature reviewed it appears that a predominant factor that determines if an organisation is sustainable is centered on a long-term strategic view of organisational success, as opposed to a short-term profit maximising agenda.

#### 2.3.5. Leadership and Sustainable Organisations

The role of leadership in driving the sustainability agenda of an organisation cannot be emphasised greatly enough. Leadership is a key driver of a sustainable agenda and in order for organisations to move towards a sustainable model, leaders need to move beyond a purely economical success measurement structure towards something that balances out social and environmental issues with profit-making and financial drivers (Linnenluecke & Griffiths, 2010). According to “sustainability leaders embed real, measurable, ongoing commitments to sustainability practices as a strategic differentiator, going beyond the immediate benefits of compliance, obligations, and efficiency. Sustainability is embedded when every part of the business makes decisions that intelligently weigh the economic, environmental, and social impacts on the long-term ability to sustain the business.”

Several leading sustainable organisations are characterised, or have been characterised, by leaders who embody sustainability in themselves and who

champion this within their businesses. This can be seen in sustainable organisations such as The Body Shop and HIPP who were both led by individuals who were both entrepreneurial and looking for new business opportunities but who also balanced this out, or combined it, with strong social and environmental values (Schaltegger & Wagner, 2011). According to Schaltegger and Wagner (2011) when company leadership is driving the social agenda based on their personal belief system and own set of values, rather than when social and environmental issues are viewed as a task for the CSR manager with requirements to fill, the company is directly affected by their values and beliefs and is shaped by them.

Two leaders in sustainable organisations, Danone, a fast-moving consumer goods company, and Interface, a carpet producer, are both characterised by three things according to a case study performed in 2009 by Vilanova and Dettoni: “first, they are both managed by visionary and inspiring leaders, respected both inside and outside their organisations; second, they are both very competitive companies in their respective sectors, known for their capacity to innovate and stay ahead of the market; and third, both Interface and Danone are companies well-known as leaders in the sustainability field” (Vilanova & Dettoni, 2011, p.21). These two companies illustrate the transformative power of organisations that have sustainability integrated into their core values. In the 1970s Danone was led by an individual, Antoine Ribaud, who believed that a responsibility to the social and environmental landscape was a key competitiveness factor, an unusual viewpoint for the time. He entrenched this belief into the organisation, and his values have remained embedded in the organisation’s strategy sustained under the leadership of his son who is currently the chief executive officer. In order to understand Danone’s long-term success it is necessary to understand the leadership that has been the genesis of this sustainable strategy (Vilanova & Dettoni, 2011).

Understanding the leadership of Interface is also key to understanding why the company has been so successful in growing a sustainable business. The company is led by founder and chief executive officer, Ray Anderson, who transformed the company’s strategy several decades ago to ensure that the business goals were met whilst adhering to sustainability practices. The

company is striving to meet its goal of having a negative environmental impact, or as the organisation terms it 'Mission Zero' by 2020 (Vilanova & Dettoni, 2011).

Leadership is critical to a sustainable organisational strategy for a variety of reasons; however one reason that has previously not been researched in great depth with regard to sustainability relates to the realm of organisational neuroscience. According to organisational neuroscience research, human beings have a mirror neuron system ('MNS') that responds to attitudes and behaviours by mimicking or mirroring these actions. When leadership sets an example in attitude and behaviour it contributes to altering explicit attitudes in the organisation which in turn then contribute to setting social norms through a shared cultural manifestation (Cropanzano & Becker, 2010). When leaders behave in ways which align with sustainable practices their employees are able to learn from this. Such learning has a transformative effect on the entire organisation. The most successful leaders of sustainable organisations are those who drive constant innovation of existing processes, systems and products, always striving to be better, more efficient and more sustainable (Schaltegger & Wagner, 2011).

#### **2.4. Chapter Summary**

What can be seen from the literature reviewed above is that there has been and continues to be a transformation in the way many businesses are interacting with the environments and societies in which they operate. This shift away from a purely financially driven economic model to one of inclusiveness, responsibility and shared value creation is profoundly impacting business models, operating processes, leadership and culture in those businesses that choose to acknowledge this shift. In conjunction with the increased awareness of the need for business to create holistic long-term value is the increased requirement for transparency and regulatory compliance. This, coupled with the rise in analytical data relating to organisational activities is transforming companies.

The notion of sustainable, transparent and data-driven intelligent companies that are positively impacting the environments within which they operate is increasingly becoming more prevalent. A result of such is a growing dependence on systems and

tools that simplify organisational data and provide an easy, often visual means of cognitively processing this data, that is available and that contributes to embedding sustainability into the organisational strategy. What can be seen in the literature is that when the organisation is intentional about this transition towards sustainable business models and is reliant on data to drive its business decisions, these data systems contribute towards embedding the formal practices relating to the achievement of sustainability objectives by providing quantified metrics to show this progression.

The below summary of the themes which emerged from the literature review attempts to identify how these themes contribute towards answering the research question and in addition exposes the gaps in the existing literature which this study to attempts to address.

**TABLE 6: HOW THE LITERATURE CONTRIBUTES TOWARDS ANSWERING THE RESEARCH QUESTION – EXTERNAL FACTORS**

<b>Theme</b>	<b>Role in Answering the Question</b>
Sustainability and Inclusiveness	Context for changing business environment
Role of society and environment in business	Context for including sustainability into business strategy
Shared value	Context on new ways of operating
Technology	Context on new ways of measuring and monitoring

**TABLE 7: HOW THE LITERATURE CONTRIBUTES TOWARDS ANSWERING THE RESEARCH QUESTION – INTERNAL FACTORS**

<b>Theme</b>	<b>Role in Answering the Question</b>
Sustainable business models	Degree of sustainability embeddedness affected by business model
Embedding sustainability into organisation	Mechanisms for embedding – role of codifying practices
Sustainability reporting	Degree to which this drives actual business transformation

Sustainability and performance metrics	Shift towards quantifying these activities
Technology and Performance measurement	The role technology is playing broadly
Technology and sustainable performance measurement	The role technology is playing and how this contributes to embedding
Culture	Importance of non-evidence-based factors driving performance and strategy
Long term vs short term view	Context for subsidiary questions
Leadership	Drivers of embedding sustainability

Gaps emerge in the literature because this field of study is so new and as a result much research is largely being done at a practical level outside of the academic context and lacks academic rigour.

What the literature review also shows is that certain unique companies are undertaking activities whereby they are able to integrate sustainable elements more deeply into their business strategy with the help of technology platforms, however the literature outlines very specific cases, with very unique factors that appear to be specific to the individual organisation and it is challenging to use this as a base for extracting what is applicable and relevant at a generic or even sector specific level that makes this transition seem accessible to all companies, no matter their individual organisational dynamics.

### **3. Chapter 3: The Research**

#### **3.1. Research Methodology**

As the purpose of the research is to identify factors internal to an organisation that positively affect a business' ability to become more socially orientated at their core, the methodology the researcher applies is a qualitative one (Maxwell, 2005). Qualitative research attempts to study human action and as a result relies on methods, such as direct open ended interviews, that stay close to the subject and is reliant on observational methods of analytical inquiry (Babbie & Mouton, 2001). This aligns with the phenomenological approach that suggests that individuals, and individuals within an organisation, are constantly making sense of their subjective experiences that occur in their daily lives.

This research is an exploratory study, and aims to gain insight and comprehension (Babbie & Mouton, 2001). As this research is not about seeking construct elaboration and identifying variables that are rooted in what is already known (Gioia, Corley, & Hamilton, 2012), it is centred rather on exploring emerging concepts within the organisational context that explore how organisations are making sense of this new operating environment within which they find themselves. A concept, as defined by Gioia et al. (2012) is a “more general, less well-specified notion capturing qualities that describe or explain a phenomenon of theoretical interest (p. 16)”. Concepts, according to this view, come before constructs in the study of organisations as they contribute towards sense-making and theory-building which can then act as a guide for designing constructs and variables to subsequently test (Gioia et al., 2012). A qualitatively rigorous approach has been taken to ensure that the outcomes are grounded in an informed approach to theory building.

The research approach is a cross case analysis that utilises Eisenhardt's (1989) approach to theory building through case studies as outlined in the figure below. This approach integrates previous work done by Glaser and Strauss on Grounded Theory, that is designed to generate sociological theory through inducting insights from data (Glaser & Strauss, 2009) and Yin's work on the design of case study research (Yin, 1984),.

This cross case analysis approach was undertaken intentionally with case sites not chosen at random and rather, as in the examples outlined in Eisenhardt (1989), theoretical sampling was applied.

<b>Step</b>	<b>Activity</b>	<b>Reason</b>
Getting Started	Definition of research question Possibly a priori constructs	Focuses efforts Provides better grounding of construct measures
Selecting Cases	Neither theory nor hypotheses Specified population	Retains theoretical flexibility Constrains extraneous variation and sharpens external validity
	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases—i.e., those that replicate or extend theory by filling conceptual categories
Crafting Instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined Multiple investigators	Synergistic view of evidence Fosters divergent perspectives and strengthens grounding
Entering the Field	Overlap data collection and analysis, including field notes	Speeds analyses and reveals helpful adjustments to data collection
	Flexible and opportunistic data collection methods	Allows investigators to take advantage of emergent themes and unique case features
Analyzing Data	Within-case analysis	Gains familiarity with data and preliminary theory generation
	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
	Replication, not sampling, logic across cases	Confirms, extends, and sharpens theory
	Search evidence for "why" behind relationships	Builds internal validity
Enfolding Literature	Comparison with conflicting literature	Builds internal validity, raises theoretical level, and sharpens construct definitions
	Comparison with similar literature	Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching Closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

FIGURE 6: EISENHARDT'S APPROACH TO THEORY BUILDING THROUGH CASE STUDIES (EISENHARDT, 1989, P. 533)

### 3.2. Research Questions

According to both Gioia et al. (2012) and Eisenhardt (1989) the research questions provide a grounding and a focus for the research and creates a constrained, but also general, framework for research to take place. The research questions needed to encompass three key areas: organisational sustainability, strategic decision-making and the role of technology platforms in order to understand more clearly if technology has the potential to act as an enabling mechanism for embedding sustainability into strategic decision-making.

The primary question this research attempts to answer is:

*How do technology platforms, and the ability for organisations to gather, monitor and manage organisational data relating to sustainability indicators result in more sustainable strategic decision-making within South African organisations?*

The questions that were put forward in the primary research phase (see Appendix 1 for Interview Protocol) were designed to align with Pettigrew's analytical model (1987) and attempted to answer the following:

- Why are organisations using technology platforms to track sustainability? (Context)
- What indicators are being utilised in creating these dashboards or systems to measure sustainability? (Content)
- How is the organisation designing and implementing these dashboards, platforms or systems within their companies? (Process)
- How does the context, content and process impacting formal and informal strategic decision-making in the organisation?

As will be outlined in the methodology section of this paper, Pettigrew's framework (1987) for strategic change guided the subsidiary questions that were posed in the primary research gathering phase as a mechanism for attempting to answer the above.

### 3.3. Research Approach

As this research is exploring strategic decision-making within organisations and looks at how companies are shifting towards a more sustainable strategic focus the researcher needed to adopt an analytical approach to framing this research. As a result, the research draws on work done by Pettigrew with regard to strategic decision-making and understanding the effects on the organisation of these strategic change processes or activities (Pettigrew, 1987).

Pettigrew proposes three dimensions for analysing organisational change processes as no one perspective is sufficient for understanding complex organisational dynamics. These dimensions are reflective of his theories regarding context and action and the notion that they are inextricably linked (Pettigrew, 1987). This is visually outlined in Figure 7 below. According to Pettigrew, when examining organisational activities one needs to review the context, content and process that surround the organisational actions and structures as shown in Figure 7 below.

According to this approach, the “context” includes the internal drivers and external environmental components that necessitate the strategic decision to change an existing organisational practice, “content” refers to ‘what’ within the organisation needs to change and “processes” refers to ‘how’ regarding the managing of this change and integrating it into the organisation. (Pettigrew, 1987).

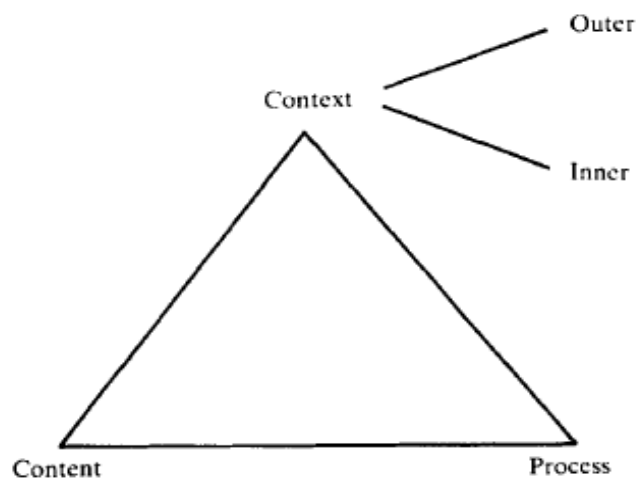
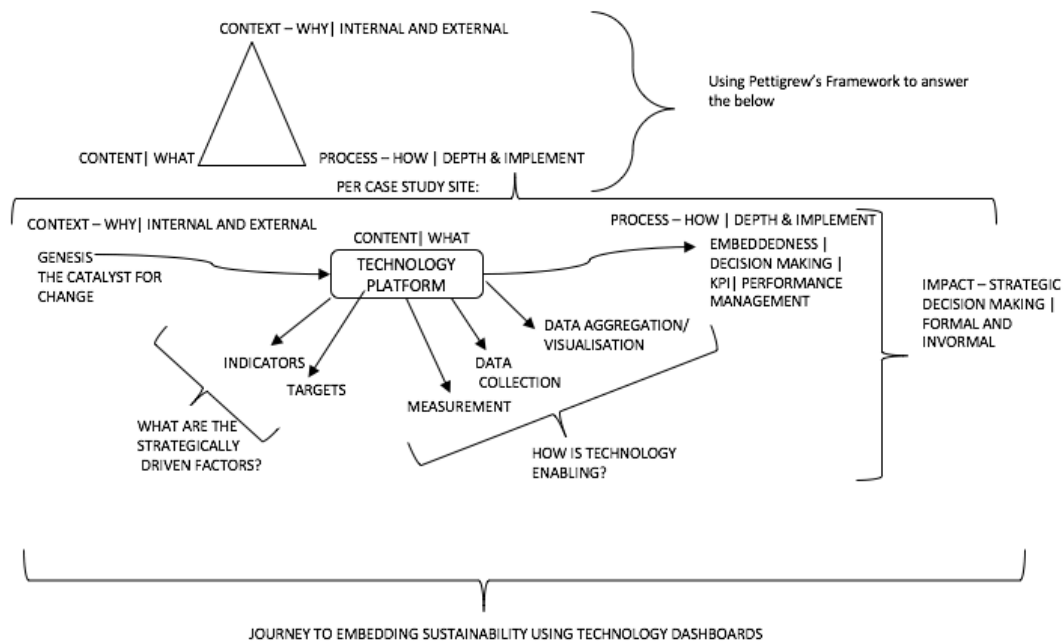


FIGURE 7: PETTIGREW'S FRAMEWORK FOR ANALYSING ORGANISATIONAL CHANGE (PETTIGREW, 1987, P. 657)

The above framework has enabled the researcher to apply an analytical framework to exploring the various perspectives of this organisational change process. Developing an understanding of the “context”, being the reasons behind organisations shifting towards a sustainable strategic focus, and then measuring the success of this transition through data. The “content”, being the ‘what’ that the organisations have undertaken, the ‘how’ or the process that they are undertaking to drive this shift within the context of quantifying activities and how these organisations are using technology platforms and dashboards as a part of this process.

In addition, another layer has been added, as outlined in Figure 4 below, to supplement the above framework and includes the dimension of the ‘so what’ or outcome of this strategic change initiative as a means of identifying some positive results in the hope of demonstrating the effects or potential effects of these change activities, both tangible and intangible.



**FIGURE 8: OVERVIEW OF RESEARCH APPROACH**

The above figure outlines the approach taken in this research and demonstrates how Pettigrew’s change model is applied to this specific research context. This figure demonstrates how each element of Pettigrew’s model has been applied to an area that

effects the embeddedness of sustainability within the business through the use of technology platforms

### **3.4. Sampling**

Three specific sectors were chosen and within these sectors two organisations were explored in order to allow, if possible, findings to be replicated. The data was gathered and analysed according to the approach outlined in Gioia et al. (2012). Utilising the approach to research outlined in Eisenhardt (1989), the research for this paper began by selecting the research question. This was done through rigorous research and application of the framework outlined in Pettigrew (1987) as is illustrated in Figure 3 of this document. Once the question had been drafted and reworked with guidance and input, the cases needed to be selected.

Selection of the cases needed to be theoretically grounded and not random. Given the time frame to complete this paper, the study was limited to six case sites. As Eisenhardt, (1989) suggests “given the limited number of cases which can usually be studied, it makes sense to choose cases such as extreme situations and polar types in which the process of interest is transparently observable” (p.537). Given the time frame of the research, and taking cognisance that this is a qualitative study, it was necessary to intentionally select case sites that had an alignment with the research themes.

The six case examples are all companies listed on the Johannesburg Stock Exchange, and are viewed as exemplary category leaders. They are also at different stages on their maturity journey towards becoming sustainability orientated organisations. Three sectors were looked at for this study, with two organisations per sector, and these were: manufacturing, consumer goods and financial services. Limiting the study to three sectors constrained the environment and focused the research. They were chosen based on access to individuals in a decision-making role and proximity to researcher. They are all national organisations with head offices in Johannesburg, or in the case of CG2 where the individual, based in Cape Town was willing to do a telephonic interview. While the organisations are different in many areas: output, processes, dependence on finite resources and negative impact on society, they exhibit some similarities. Each of the organisations has a set of either broad or granular sustainability goals and publishes their achievements in this area in an integrated and/or sustainability annual report.

The researcher began by contacting individuals within the organisations and was then directed to the relevant people who were in the best position to answer the questions posed in this research. Face-to-face meetings were arranged via telephone call and email, and where face-to-face meetings were not possible with one of the interviewees on account of the proximity of that interviewee to the researcher, conference call meetings were held with that interviewee.

Two primary types of qualitative data were analysed for this research, the first set of data emerged from document analysis. This was extracted from the organisation's websites and downloaded from the websites onto the researcher's computer in the form of PDF files. For all the companies interviewed this data was either in the form of a publically available integrated annual report or an annual sustainability company report.

The second and more significant qualitative data source were primary interviews in the form of semi-structured surveys that were utilised "to obtain both retrospective and real-time accounts by those people experiencing the phenomenon of theoretical interest" (Gioia et al., 2012, p.19). These interviews were recorded using an audio recorder and were thereafter transcribed by the researcher. In addition to the audio recordings, the researcher also compiled rigorous field notes during and immediately after each interview. Semi-structured interviews enable the participants to convey their lived experience and describe, in a more authentic manner, their own perspectives on the subject and its effect on the organisation. Because a semi-structured survey leaves space for open ended dialogue, participants felt unconstrained by tight questions and answered naturally, unlocking new ideas for the researcher to explore (Gioia et al., 2012).

As mentioned previously, the research was limited in that only one individual per organisation was interviewed for the primary data gathering, thereby limiting the scope to the interviewee's subjective lived experience within the organisation. Further limitations arise as a result of the varying levels of seniority of the individuals interviewed which affected their holistic understanding of the organisational strategic goals and objectives.

### **3.5. The Interview Protocol**

The survey instrument (see Appendix A) was constructed using Pettigrew's analytical approach to understanding organisational change (Pettigrew, 1987). The literature review, as well as examples of global case studies, also informed the survey design. Several areas of the organisational shift towards strategic sustainable decision-making using data were explored with guidance from the questions.

The first broad question and the subsidiary questions that arose from this discussion were designed with the intention to understand broadly the role that data plays in the strategic decision-making of the organisation and to ascertain how evolved and/or sophisticated the information technology systems utilised by the organisations, if utilised at all, were. These questions were designed to facilitate an opening dialogue between the researcher and the individual within the organisation about the role that data plays in general within the company, and how they were currently utilising digital-based platforms to quantify the organisation's activities. This provided a means of discussing the broader landscape and enabled the researcher to set the intention for the purpose of the interview. Because the majority of individuals interviewed were based within a sustainability or strategy team they did not necessarily think of the role data played within the context of their role and this opening discussion contributed to guiding the discussion within the constraint of data and systems.

The next component of the survey was designed with the intention of facilitating conversation around the drivers or context that precipitated the need to begin quantifying sustainability activities. This was to gauge the importance of the drivers of the change and whether these were determined by internal organisational drivers, or external drivers. According to Pettigrew (1987) "outer context refers to the social, economic, political, and competitive environment in which the firm operates. Inner context refers to the structure, corporate culture, and political context within the firm through which ideas for change have to proceed" (p. 657). The drivers are important in understanding the intention behind the activities and enable the researcher to attempt to identify potential links between the drivers of these activities and the subsequent manifestation of the activities into the organisational strategy.

Once exploring the drivers behind these quantifying activities, or the "why" behind the change, the next step of the research needed to explore the content of the change and

the process that was driving this (Pettigrew, 1987). The intention of this was to explore how organisations were going about quantifying their sustainability activities and the ways in which they were using processes to embed this into the organisation. This was also to gauge their view of targets and how they set these organisational targets and understand the systems and tools that they used to determine whether they were reaching these targets. This enabled the researcher to get an understanding of the landscape of tools available that were being utilised by the various organisations interviewed. An understanding of how people in the organisation interacted with the data and the data-gathering activities was required to see if there were any patterns.

In addition, another dimension was added to this research, augmenting Pettigrew's model and this was the dimension of 'so what' and was used to explore the outcomes of this shift towards sustainable strategic decision-making on the organisation from the perspective of the individual being interviewed. This was in an attempt to ascertain if and how this shift was affecting policies, as well as performance management and employee Key Performance Indicators (KPIs) in addition to other areas of strategic importance to the business.

### **3.6. Research Scope**

The scope of this research is limited to the study of organisational strategic decision-making and the role technology plays in enabling sustainability to be integrated into strategic decision-making within organisations. This is a qualitative study and as such the scope of the research is limited by the number of case sites explored and the number of respondents participating in the primary research.

### **3.7. Research Assumptions and Ethics**

#### **3.7.1. Researcher Assumptions**

Several researcher assumptions were made when conducting this research. There is, as expressed by Gioia et al. (2012), the basic assumption that everything with the organisation is constructed as a result of social dynamics and it is the researcher's task to understand these dynamics exist and acknowledge that they inform the respondents perspective. However the assumption made with this research is that the individuals participating in this

study are ‘knowledgeable agents,’ namely, that people in organisations know what they are trying to do and “can explain their thoughts, intentions, and actions” (Gioia et al., 2012, p. 17). An additional assumption made is that the researcher has the ability to enable the participants to have their own voice and is knowledgeable enough to properly represent that voice in the data analysis component of this paper. The participants sense-making of their organisational activities and the motivations or context driving these behaviours was expressed without the researcher’s preconceived ideas facilitating the response (Gioia et al., 2012).

Several preconceived researcher assumptions were also challenged in the course of this exploration. There were some assumptions made by the researcher prior to embarking on the data-gathering component that were challenged after the literature review had been completed and once the researcher began to spend time with individuals in the organisations and began to practically understand their lived experience. These assumptions primarily related to the means by which sustainability was being embedded into the organisation and the challenging of such assumptions served to strengthen the concepts that are outlined in the findings portion of this paper. An example of such was the researcher’s understandings concerning the level of significance that identifying indicators and the development of tools would play in the embedding process. The initial understandings suggested that this activity would be critical to the embedding process, however the research findings indicated that the content and process of developing these tools was less significant than the context or driver of the sustainability initiative within the organisation.

Based on insights gained through the literature review, the act of identifying indicators was identified as a significant aspect to the embedding process, however as will be demonstrated in this paper, from the research insights gained from the six South African organisations selected, it became apparent that there are aspects other than the identification of indicators that drive the embedding process more strongly.

### 3.7.2. Researcher Ethics

Every effort was taken to ensure this research was undertaken in a transparent and ethical manner. Ethical clearance was obtained from the University of Cape Town's Ethics Committee and there is evidence to support this.

Participants were made aware of the nature of this research and its purpose prior to participating in this study, to ensure there was an alignment of expectations upfront.

In addition, participants gave written consent regarding their willingness to participate in this study, and the questions were sent in advance when requested by the participants. A brief description of the research study was also shared with all participants prior to the primary interviews to ensure they were aware of the research focus areas.

Participants, as members of organisations are not identified individually in this study. In addition, the researcher has not revealed the identity of the organisations, choosing instead to utilise descriptions and characteristics when referring to company specific themes. All company information has been securely stored by the researcher in a password-protected folder on a personal computer and in a password protected cloud-based storage system.

Participants will also have the opportunity to review the report once it has been reviewed and marked.

### 3.7.3. Research Limitation

The limitations of this research arise out of the fact that these organisations were chosen not by random sampling, but intentionally based on proximity to the researcher and also based on pre-existing knowledge by the researcher of activities within the organisation that aligned with this area of research.

A sample of only six organisations was looked at for this research and this sample is not broad enough to get a robust view of the landscape but rather serves to surface concepts that can be used for future deeper research. An additional limitation of this research is that only one individual per organisation

was directly interviewed and their subjective understanding of the topic being researched determined their unique responses which may be at odds with the rest of the organisation. This is partially mitigated by a review of other sources of information about the companies being interviewed, through a document analysis of both annual reports and sustainability reports, to ensure some alignment between the external picture of the organisation painted in public documents and the internal point of view of the individual being interviewed.

There are also limitations currently in benchmarking organisational activities against one another, as a result of a broader lack of defined framework for quantifying sustainability within the organisational context. These metrics are still open to interpretation and this often leads to inconsistencies in each organisation's approach to how they quantify sustainability for their organisation. According to Perrini and Tencati (2006) it is "that the multiplicity of options available and the myriad of ways in which organisations quantify and track their performance, depending on which standards they are aligning with" (p. 299). The objectives of this research attempt to find commonalities and as a result have the potential to contribute towards future research aimed at defining a South African specific, accessible and identifiable framework for organisational sustainability.

## **4. Chapter 4: Research Findings**

### **4.1. Companies Assessment**

There were a total of six companies interviewed for this research. Below is a summary of each company with regard to their approach to quantifying sustainability-related activities. The six companies have been grouped into sector specific categories. Each organisation is viewed as a category leading company or a primary player within the category.

To maintain confidentiality of the organisations, the primary identifiers have been removed. Each of the companies below have been assessed using primary research data as well as publically available company reports relating to sustainability. This data has then been used to map the degree of sustainability embeddedness on the “embedding wheel” extracted from Bertels, Papania, & Papania (2010).

#### **4.1.1. Financial Services:**

Two financial services organisations were interviewed for this research, which for confidentiality purposes are labelled FS1 and FS2.

FS1’s approach to sustainability is outlined in their sustainability report where they outline their commitment to being a good corporate citizen. “Our ongoing sustainability is linked directly to our being a valuable member of our communities and of society in general, now and into the future.” They are fairly immature with regard to how embedded sustainability is within the organisational strategy.

Sustainability for FS1, according to two sources (both the interviewee and company documents) is the long-term sustainability of the organisation. An extract from their annual sustainability report states that “we proactively embed sustainability thinking and sustainable business practices at every level of our business. We believe that our most important contribution to sustainable development is to operate an effective, efficient and profitable group. Responsible finance is core to our contribution to sustainability.”

According to the individual being interviewed in the first person, “the way the organisation sees it (sustainability) is anything that is about risks. Anything that is a material risk to the sustainability of the organisation falls into this, for example cyber security, anything to do with economic climate, trust between government and business, so sustainability of the organisation is a strategy.”

Their sustainability report outlines the frameworks they adhere to from a sustainability perspective as well as the global sustainability guidelines they align with. There is an absence of quantifiable goals and benchmarks throughout the published sustainability report, however these omissions were clarified during the interview with the head of sustainability and data of FS1 when she stated that “I think there are easily quantifiable metrics that align more with business efficiency but with big strategic issues about where the bank is moving and what decisions you need to make, it is very qualitative and not easy to track relative to KPIs.”

The driver of FS1’s quantifying activities in relation to its sustainability strategy is driven by the publication of its annual sustainability report as summated by the head of sustainability and data at FS1 in that “the report drives much of the quantitative measurements”. This suggests that sustainability is embedded in the organisation to the degree to which it is assessed and audited but not to the degree that is core to the operational model of the business

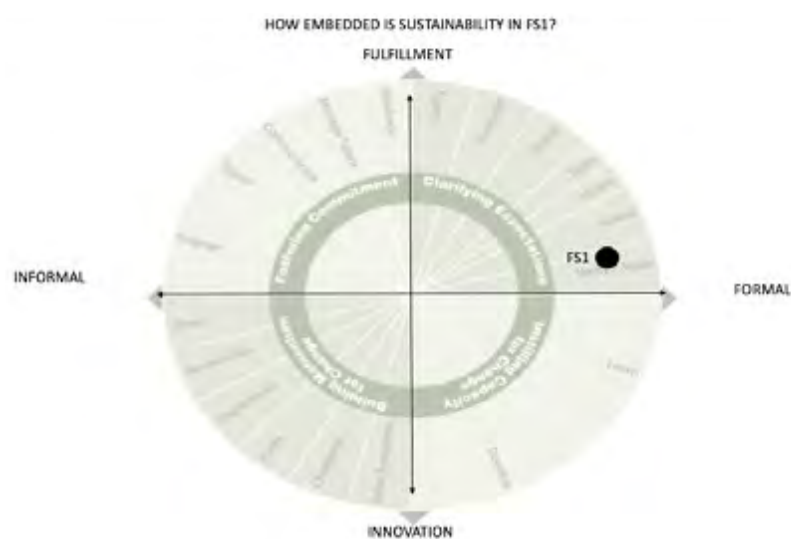


FIGURE 9: FS1 SUSTAINABILITY EMBEDDEDNESS

FS2's approach to sustainability is significantly different to that of FS1 which, as set out above, views sustainability as a risk management strategy. FS2's attitude to sustainability, according to the individual interviewed for this research is "quite unique" in that, "I think number one because of our entrepreneurial roots, number two is the volumes of data that we are able to push out but also I think it has a lot to do with the fact that we have a shared value model so it's intrinsic to what we do."

According to FS2's 2014 Sustainability report in which they outline their shared value framework, FS2's "core purpose and ambition extend further than our immediate clients or our financial performance. Our Sustainable Development Report aims to share how we create shared value for our employees, members and clients, partners, and broader society. Every aspect of our approach is strategically linked to our core business and is seen as material to the organisation." FS2's report is characterised by enormous amounts of data. This is historical data that shows the changes year on year against certain key internal measurement metrics.

FS2's sustainability report also contains key targets, defined through various reporting frameworks, as well as internal targets with progression bars indicating how close the organisation is to meeting its targets.

"If you can't demonstrate what you say you do as a business with data that backs it up it is just words, for us, our key areas of sustainability are also our key business drivers so there isn't like a separate system to track these, rather every month the business targets are the sustainability targets. And the spreadsheet that shows performance of each business unit relative to the targets is in fact demonstrating the achievement of these goals." FS2 is a unique organisation because they strongly believe in their shared value strategy, so much so that it has become a global benchmark for demonstrating shared value creation. The culture of the organisation is extremely data-centric as a result of its having grown from a small team of actuaries. In addition, leadership demands that everything is quantified in order for there to be no question that the organisation is achieving what they are communicating to the public. At FS2, as the below figure demonstrates, sustainability is deeply integrated into the business model.

The data is now driving new strategic innovations for thriving within the context of shared value and driving the sustainability of the company.



FIGURE 10:FS2 SUSTAINABILITY EMBEDDEDNESS

#### 4.1.2. Manufacturing:

Two manufacturing organisations were interviewed for this research, which for confidentiality purposes are labelled M1 and M2.

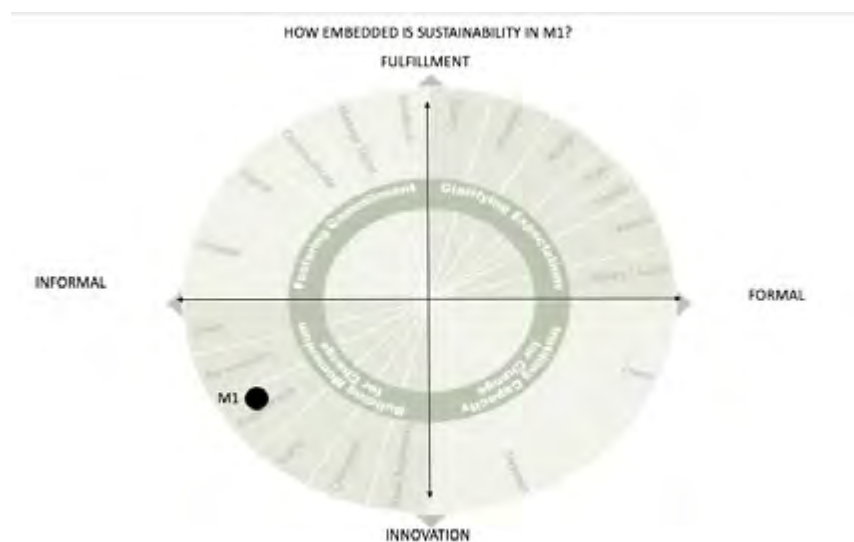
According to M1’s Sustainability Review for 2014 while M1 “has developed a strong corporate culture of sustainable business practice, it is not complacent regarding its current performance and responsibility. The Group is dedicated to continuous improvement in sustainability and takes cognisance of global developments in this arena. Much of the Group’s efforts in 2015 will be on further entrenching existing sustainability-related policies. From this M1 expects new initiatives to be born and is excited to see what the future holds. The Group looks forward to realising its vision of being a leading business with the highest ethical standards, delivering exceptional value for its customers, employees, communities and shareholders.”

According to the individual interviewed for this research, M1 is heavily data-centric as a business “we have a relatively sophisticated system, so everything is in a fully integrated model from the time we receive raw materials to the dispatching of our finished goods. Whether it is tonnage converted, obviously the different types of input materials or tonnage sold to various customers or the

units sold for a specific product, we would be able to compare that quite frankly every which way.”

The business, being in the manufacturing sector, is fairly reliant on the environment for raw materials and, in the interest of sustaining its business pipeline, it is committed to becoming more sustainable as a business imperative. M1’s sophisticated data system allows it to quantify its activities relating to processing and manufacturing of materials and its Centre of Excellence drives business innovation that enables it to constantly optimise its business model. “Given that sustainability is a core component of our current business model and future growth, it’s all about gearing us for the future.”

The figure below reflects M1’s commitment to innovation through its Centre of Excellence which incentivises and rewards new sustainable business initiatives.



**FIGURE 11: M1 SUSTAINABILITY EMBEDDEDNESS**

M2 was founded in South Africa and now currently operates in 37 countries globally. According to its 2015 Sustainable Development report, the company “has been driving sustainable development as a group-wide objective since 2000, systematically embedding sustainability principles throughout our activities. Our governance framework provides the policies, structures, targets and reporting systems necessary to address the material risks and opportunities that sustainable development presents.”

According to the individual interviewed, M2 acknowledges that it does have a negative impact on the environment and is strategically committed to becoming a more sustainable, value-creating company. “Because let's face it, we can't keep just putting carbon emissions into the atmosphere, it's not 'good for business' model.” M2’s integrated report states that the organisation is strongly affected by the environments within which it operates and outlines how “the complexity and interconnectedness of the societal factors that shape our operating context underscore the critical importance of a considered and holistic approach to sustainable development.”

M2 is an incredibly data-centric as an organisation and have a variety of interconnected systems that support a holistic integrated operating model. Its new integrated operating model, which it began implementing in 2014, is geared toward utilising data to achieve a streamlined and more sustainable business vision that delivers sustainable stakeholder value. According to the individual interviewed, M2 believes that “firstly, because if you don't measure it, you can't fix it. You can't improve something that you don't know what it actually exists. So, to even get to the point of getting data and systems etc., for a company like ours, we first need to understand what is materially important to us, where do we have significant material impact.” As a result of this understanding of the importance of quantifying its impact, the individual interviewed stated that “I think the business has been reporting on its environmental impact, specifically, from about 1996. So it's been around for quite some time, especially reporting on all of these things.”

M2 is in a process of codifying and integrating sustainability metrics into its core business operations and as the figure below reflects, it is in the process of implementing formal steps toward embedding sustainability as a foundation of its business operations.

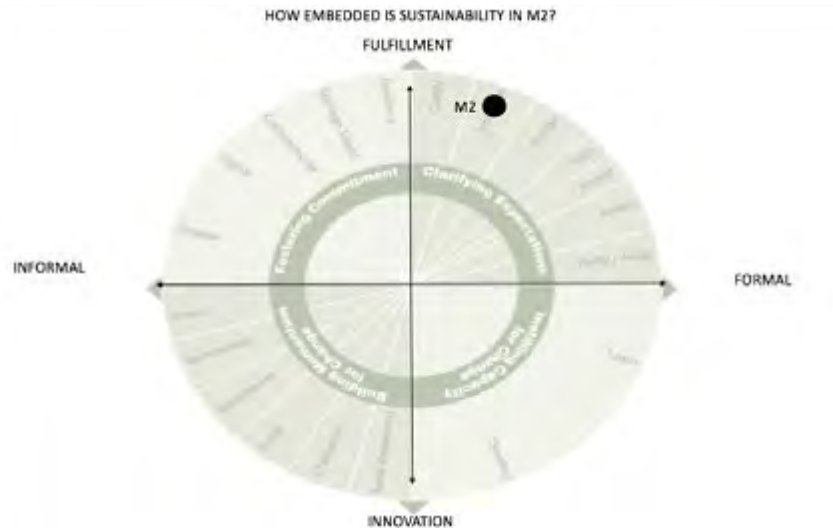


FIGURE 12: M2 SUSTAINABILITY EMBEDDEDNESS

#### 4.1.3. Consumer Goods

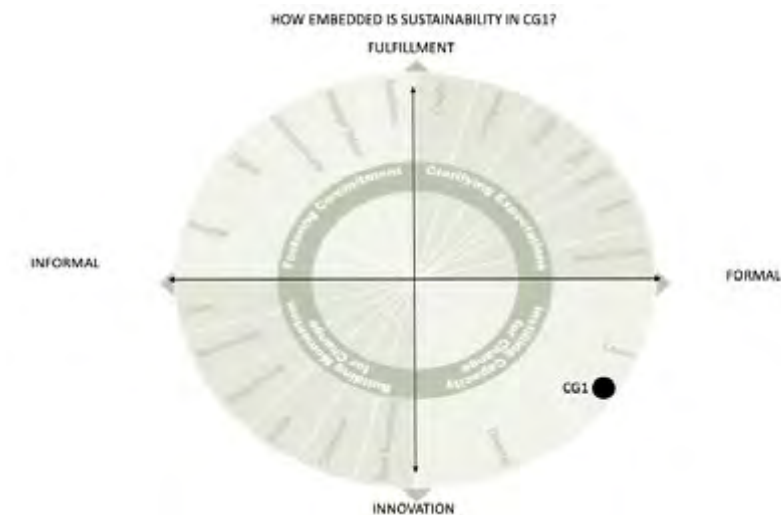
Two consumer goods organisations were interviewed for this research, which for confidentiality purposes are labelled CG1 and CG2.

CG1 is an organisation the goal of which, according to its 2015 Sustainability Report, is “to achieve commercial success by adopting a mass distribution business model that proactively incorporates the input of our stakeholders to effectively integrate commerciality and accountability.” CG1’s “strategy is to be considered a leader by all stakeholders in our chosen markets and become sub-Saharan Africa’s most trusted retailer.” As a result of this approach the group tries to “advocate more sustainable practices and product choices in all the business decisions we make” according to their sustainability report.

According to the individual interviewed for this research, CG1, a retail group operating throughout sub-Saharan Africa, is very aware of the role data plays in driving decisions around sustainability. “I think data is very important to our strategic decision-making because if the data is inaccurate you are at a risk of making the wrong decision. We want to be responsible corporate citizens as a group. We want to do what’s right. We know we have an environmental impact. Our biggest one is energy like I said and water and waste so we need to focus on that. We also understand that our biggest environment impact lies within our supply chain and we have to measure and track and try and reduce our impact

as well.” According to the group’s Global Integrated Report published on its website, “The implementation of more in-store electricity meters and the analysis of the Group’s energy usage figures have resulted in greater accuracy of our energy consumption data. We have developed an energy roadmap based on a Business As Usual (BAU) energy model which uses 2010 as a baseline and defines energy targets to the year 2020.”

CG1 is beginning to place increasing reliance on platforms and systems which help it to track its resource consumption and other key metrics so as to control and understand its impact and grow its business in a sustainable way. As can be seen in the figure below, CG1 is developing and implementing innovations which are enabling it to learn more about the quantitative affects of its business on the environment and society so as to develop solutions which enable it to scale whilst still meeting its objectives in a sustainable way.



**FIGURE 13: CG1 SUSTAINABILITY EMBEDDEDNESS**

CG2 is recognised globally as a sustainability leader in the retail sector. It has a group strategy termed aimed at sustainable business growth which focuses its activities to ensure that the group is constantly growing and innovating around the sustainability of its activities and operations. According to one of its annual investor reports which focuses on sustainability, “we manage our broader business impact through comprehensive social, ethical and environmental policies and practices. Through our [sustainable business strategy], we’re embedding sustainability into every aspect of our business and every product

we sell, with eight key focus areas: sustainable farming, water, waste, energy, ethical sourcing, transformation, social development, and health and wellness. Our vision is to be a world leader in retail brands that appeal to people who care about quality, innovation, value and sustainability.”

According to the individual interviewed for this research, CG2 is committed to integrating sustainability into its business model through quantified and calculated methods, “I think it’s been a really important way of trying to integrate sustainability into the way we operate as an organisation and about trying to make something that was in the past a little bit less sort of numerical or measurable, a bit more quantifiable and measureable,”

According to a report published on CG2’s website in 2016, “the group has over 200 indicators that they are constantly tracking across all their different business activities and are committed to measurably enhancing the community, environment and societies in which they operate.” “In the sustainability space there’s always been this view that it’s the softer side of business, so having proper tracking, information and targets in place has been really crucial for us. The rollout of our real-time water metering system in African and Australian stores is a priority, particularly in those regions experiencing water scarcity. Through our efforts in South Africa, we have already achieved 90% visibility across all our stores and have reduced water consumption by 41.9% since 2007.”

According to CG2’s sustainability report “sustainability is one of the core values of CG2 and is deeply entrenched in the heart of our business. Our sustainable business strategy encompasses the issues which matter most to us as a business, to our colleagues, customers, shareholders and other stakeholders.” Technology platforms are critical to the business in the way they monitor and measure key indicators for the business in real-time to affect decisions made in the business. “One of our most successful energy-saving interventions is the Metering Online monitoring system. This has allowed us to effectively track our energy and water consumption on a real-time basis. We have also been able to challenge inaccurate billing from municipalities or landlords.” As is demonstrated in the figure below, CG2 is constantly using sustainability data to

innovate the formal aspects of their business and is consistently trying to meet the sustainability targets that are central to its business values.

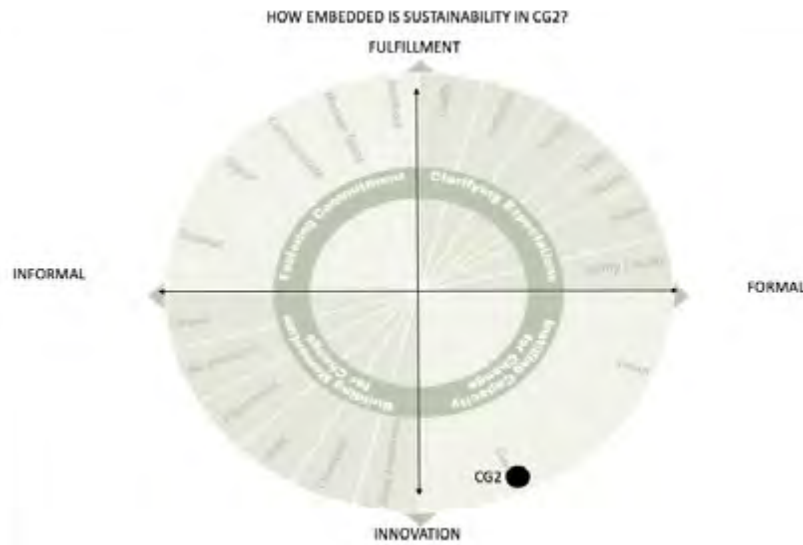


FIGURE 14: CG2 SUSTAINABILITY EMBEDDEDNESS

#### 4.1.4. Summary of Sustainability Embeddedness

The table below sets out the summary of findings in relation the sustainability embeddedness of the companies examined in this section of the dissertation:

TABLE 8: SUMMARY OF COMPANIES

Company Name	Approach to Sustainability
FS1	Corporate Citizen- Responsible
FS2	Shared Value driven by data
M1	Sustainability-Centric business model
M2	Moving towards a sustainable operating model
CG1	Moving towards a sustainable supply chain, alignment with parent companies sustainable strategy
CG2	Sustainability-centric business model

## 4.2. Introduction to the Research Findings

The research findings are broken down into themes grouped according to Pettigrew's framework of Context, Content and Process (Pettigrew, 1987) and the additional dimension of 'So What'. Within each of these categories the key themes that have emerged from the research findings with regards to the roles that data and digital systems play in integrating sustainability into strategic decision-making are outlined in the below analysis.

The research revealed that of the six companies interviewed, only one had a system dedicated to tracking, monitoring and analysing business activities which included and integrated sustainability targets and KPI's as part of its overall business metrics. The remaining five companies used various technology platforms for tracking key sustainability targets which were thereafter integrated this into broader tracking systems or decision-making frameworks. The research demonstrates that the interviewed companies are moving along a spectrum, from compliance, to obligation, to efficiency and finally to category leading when it comes to tracking, monitoring, measuring and utilising sustainability data in the strategic decision-making of the organisations.

These findings are demonstrated in the figure below showing how technology is enabling businesses to utilise sustainability data in a variety of different ways:

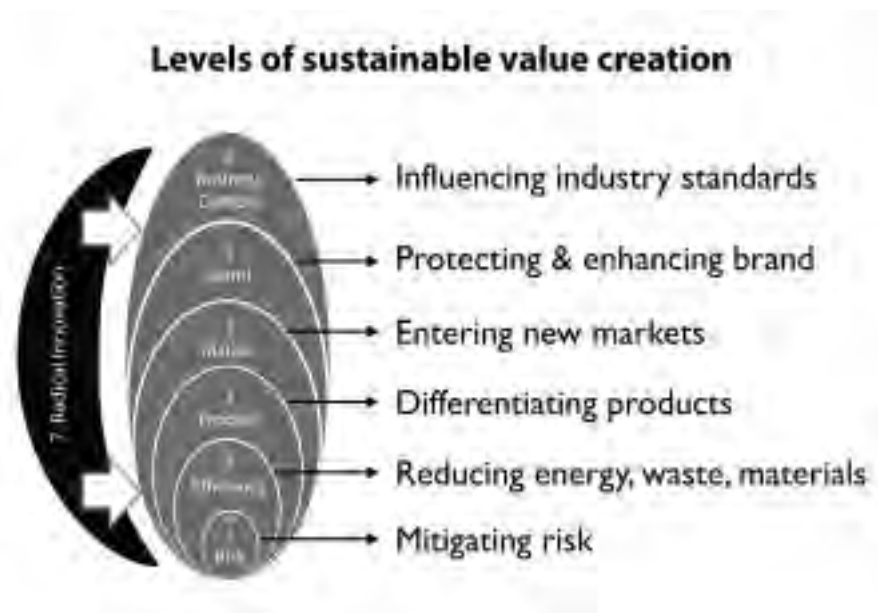


FIGURE 15 : LEVELS OF SUSTAINABLE VALUE CREATION (SOURCE: LASZLO & ZHEXEMBAYEVA, 2011, P. 40)

### **4.3. Context: External Drivers**

#### **4.3.1. Compliance and Reporting Frameworks**

Compliance and Reporting Frameworks came up as a driver across all six companies. Each of the organisations detailed that it has a corporate responsibility to its shareholders and key stakeholders and a need to deliver a report annually demonstrating how it has met its responsibilities.

According to *Sustainability: Moving from compliance to leadership* (2011), “compliance with government regulations is a key external driver and the legally required must-do task.”

The need for the six companies to ensure availability of data for validation and authentication is necessary as all companies are listed on the Johannesburg Stock Exchange and, in terms of the listing requirements of the stock exchange, have obligations to disclose integrated data to their shareholders and stakeholders. “Compliance has obviously driven certain areas of the information gathering. Whether it is compliance, or the Johannesburg Stock Exchange rules or integrated reporting or for that matter what government requires as well” (M1). “A little bit of regulatory, and looking at the GRI and various other sustainable indexes internationally and saying these are the, you know 200 odd things that we actually need to be doing as a business” (CG2). Whilst all the organisations stated compliance and referenced the reporting index as drivers of quantifying their sustainability activities, only one of the six had this as a primary reason for quantifying activities in the sustainability space.

The role information technology systems play with regard to this is to enhance automation and efficiencies with regard to consolidating the data and providing a clear means of authentication. This aligns with the notion that information technology is instrumental in removing manual processes and automating collection of data. Because automation provides mechanisms for capturing data that frequently removes manual inputs, it is easier to audit and verify this data for compliance reporting. Additionally, when data is aggregated, centralised, accessible and online it enables the process of compiling the investor reports and reporting documents to be streamlined. Utilising a system to compile these

reports also enables the organisations to benchmark themselves against data from the previous year as the system provides a standardised organisational measurement system.

#### 4.3.2. Reputation

Reporting positively on sustainability metrics is becoming increasingly important from an external brand perspective. Having quantifiable data to demonstrate an organisation's sustainability is becoming increasingly important. In the case of M1, it views its sustainability data as a key means of generating marketing collateral and utilises this marketing collateral to improve positive public and stakeholder sentiment towards the business. "So you have two perspectives. One is the selfish perspective, and a reputational thing, and the other is what fits in from a compliance perspective. Some of it actually drives your marketing initiatives." This aligns with viewpoints reflected in Figure 15 that demonstrates the ability for sustainability data to protect and enhance a brand, especially with a rise in conscious consumers with a demand for transparency.

Reputation is also important with increased external scrutiny as a result of either a positive or negative trigger. In the case of FS2, the business was used as a case study example by the Harvard Business School as an example of an organisation creating shared value. This case study placed the organisation at the centre of increased global interest and the head of the company relied on data to demonstrate the organisation's tangible impact. "Externally, the publishing of the case put us in the spotlight and so when you do make these assertions people want to know how you know that you're having the kind of impact that you claim".

In the case of M2, negative scrutiny was placed on the company following an incident which impacted public perception of the organisation. To mitigate this, the company began to track its improvements in this area given that it was of material significance to them. By using this data in the years that followed the incident, M2 tangibly demonstrated its commitment to mitigating such future

incidents and was able to positively manage negative perceptions pertaining to business practices concerning the incident.

The role that information gathering technology platforms play with regard to reputation is to ensure that there is a constant tracking of areas of material significance to organisations. This data can then be utilised in communications to stakeholders to bolster the company's reputation and mitigate negative perceptions. In addition, the act of tracking these areas of material interest and quantifying these activities against benchmarks ensures that the individuals in the company are frequently made aware of the business' position in this area and whether the business is failing or succeeding to achieve its targets. This serves to ensure that a business remains on course to achieve its strategies insofar as such strategies relate to areas of material impact.

#### **4.4. Context: Internal Drivers**

The internal context driving an organisation's beginning to quantify sustainability provided an insightful topic of discussion between the researcher and the individuals interviewed.

##### **4.4.1. Business Models**

Several people within the organisations interviewed spoke about their evolving business models. Amongst three of the organisations there existed a view that business needed to be geared towards creating long-term shared value and shareholder value in the long term. In order to achieve such, the business models of the companies at which they were employed had evolved over time to ensure that strategically the organisations were evolving in a way that contributed towards making the business more sustainable. "Given that sustainability is a core component of our current business model and future growth, it's all about gearing us for the future", stated the individual at M1. For FS2 sustainability has, "I think a lot to do with the fact that we have a shared value model so it's intrinsic to what we do. Because the business model is intrinsically linked to sustainability areas material to the organisation, the business metrics are frequently aligned with sustainability metrics."

Two other organisations expressed a change in their business model towards a shared value model which was in the process of being implemented at the time of the interviews. For one organisation, a global merger with a company far more sophisticated in its understanding of the impacts of business practiced has required this organisation to adapt its business model to align with the sustainability standards of its global partner. “I think after the whole merger, because of the way our global partner is sustainability orientated, we are in a bit of pressure to, you know, get to that level. Although we were doing things, we were not doing them at that scale before.”

In the case of M2, an organisation with a fairly negative environmental impact, it needed to adapt its business model to one that was less reliant on depleting finite natural resources so as to decrease its negative impact. “Because let's face it, we can't keep just putting carbon emissions into the atmosphere, it's not 'good for business' model.” As part of its new sustainability-focused model, M2 is utilising a variety of digital products with the vision of ultimately creating an integrated picture of the organisation. “So we've ... with the whole new operating model that M2's got, we've had a lot of business process optimisation programmes, SAP being one of them. Because all the different business units were kind of running different modules of SAP. For sustainability specifically, we've now implemented the SAP sustainability performance management module. So essentially how this works, is it takes Excel, it takes what we have in Excel and just puts it in a system. So it's a centrally accessed system, so we don't have spreadsheets going in between different people all the time, and version control etcetera. So, and it also makes assurance much easier, because all your supporting evidence just gets loaded up into the system. So we've actually implemented this system globally. In August this year it went live”.

The role technology platforms play with regard to driving the agenda of a shared value business model lies in using sustainability data in a way which enables a business to integrate this data directly into decision-making processes and to make the data part of the broader data set that influences decision-making.

In the case of CG2, “if I look at energy for example, one of our first investments was around an online system that could track energy usage on a real time basis

and that's helped us to understand how we drive efficiency across the business. So we've actually got accurate information available to us and we're not dependent on waiting for a municipality to send us a bill. That's helped us a hell of a lot and also when we've invested in new technology around energy efficiency like refrigeration and lighting and stuff, being able to track the financial benefits or the energy saving, we are benefitted immediately through the measurement processes and systems as we have a means to prove the business case of each of those investments immediately."

By beginning to see the tangible and quantifiable value that sustainable activities have on the organisation, it contributes towards driving a shared value or sustainability orientated agenda. With the case of M1, the more its products are able to be recycled, the bigger its input pipeline. Accordingly, there is a direct correlation between product innovation towards more recyclable products and the business' growth. "We have a relatively sophisticated system, so everything is in a fully integrated model from the time we receive raw materials to the dispatching of our finished goods. Whether it is tonnage converted, obviously the different types of input materials or tonnage sold to various customers or the units sold for a specific product, we would be able to compare that quite frankly every which way." Such insights are also evident for both FS2 and CG2 with both companies using technology platforms to drive business decisions based on their sustainability indicators.

What these new business models demonstrate is not only a shift towards more sustainable companies but also towards companies that are making more evidence-based decisions with the help of verifiable data sources.

#### 4.4.2. You Cannot Change What You Cannot Measure

When asked if there was a need for quantified sustainability data to determine whether an organisation was achieving its strategic aspirations toward becoming better corporate citizens, all but one of the companies' representatives said there was a need for tangible evidence-based data covering all business activities. As the individual from CG2 says, "it's obviously really crucial to make any really

informed strategic decisions, so kind of a full analysis of all the factors affecting us from a data perspective is really important.”

All but one of the respondents said that it was impossible to fix, change or grow in areas of a business where there is no quantitative understanding. These respondents furthermore said that with no means of measuring performance and resource utilisation, the organisation could in no way be authentically certain that it was achieving the goals it had set out to achieve as an organisation. There is a need for heightened transparency if these organisations are going to be sustainable in a highly volatile and complex environment. Without a thorough understanding of all business activities, organisations run the risk of not identifying problems and challenges in time or of missing out on an area of opportunity. As the individual from FS2 stated, “whatever we claim we’ve been doing, we need to be able to quantify it and measure it and then report on it, ... discussing the levers to pull to impact the one area where engagement was tracking below target.”

Technology platforms contribute to enabling this by providing tools for measurement that are either automated and require zero human input, or are standardised in a template form to ensure consistency. Using systems enables individuals to “obviously have a really clear idea of where we are and where the challenges lie in terms of meeting our objectives at any particular point in time. That has helped us to characterise resources and effort over certainly the short and medium term”. Embedding this culturally is also important within the organisation as employees are required to present evidence of their activities to determine how successful their endeavours have been. This increases overall workplace transparency.

#### 4.4.3. Leadership

Broadly, the leadership teams of each of the organisations interviewed are acutely aware of the accountability and responsibility of their organisations and actively drive sustainability agendas within their organisations. The degree to which this takes place is determined by how passionate the leader is as an individual about the sustainability agenda of the organisation and the degree to

which that leader is involved in monitoring that data. This is far more difficult with the organisations that have many thousands of staff engaged in a broad variety of activities monitored by a tiered leadership structure. However, in the case of FS2, which is globally recognised as an organisation demonstrating shared value, the chief executive officer, who is himself an actuary and incredibly data-driven, embedding this deeply into the organisational culture. “Even long before all of these external things (our chief executive officer) wanted to know how we are doing at the things we claim to be doing. So as I was saying it was both internal, with our actuarial, data-driven culture and our leader.” According to a CG2 report, “organisational sustainability depends on having this values culture entrenched across the value chain. Building this kind of leadership from within is key for any business that is expanding globally.”

Information technology platforms and data gathering systems play a role in that they are able to give leadership a granular view of the business without them having to be involved in the day-to-day activities. Two of the organisations have real-time data dashboards which aggregate the various business activities in relation to their targets. Organisational leadership is able to interact with these real-time dashboards during monthly meetings and quarterly reviews or in their own time so to assess the performance of the business at any given point. The depth to which the leadership is invested in the data appears, in the case of the organisations interviewed, to drive the organisation’s commitment to ensuring the data is constantly updated and that targets are being achieved.

#### 4.4.4. Cost Efficiency, Profit Growth and Risk Management

The most logical theme that materialised in this portion of the research was that of pursuing sustainability as a means of attaining efficiency. Once organisations began tracking their key areas of impact they found several things which affected the profitability of the business. In some cases following the implementation of external measures and checks, it became clear that the municipality had been over-billing companies for energy and water consumption. These discoveries led to a decrease in costs. In other cases, specifically for the two companies in the consumer goods sector, both companies found that upon examination of data from their various branches, the

discrepancies in consumption led to behaviour changing initiatives regarding energy and water usage. It also led to the businesses understanding where there were existing inefficiencies that could be optimised as they grew. For example, in the case of CG1, its discovered that its bakery and refrigeration contributed most significantly to its environmental impact and so with each new store that is built there is an innovation to optimise the efficiency and sustainability of these areas. As is outlined in *Sustainability: Moving from compliance to leadership* (2011), wasting resources is costly and inefficient for business and developing mechanisms for understanding consumption can have far-reaching cost and efficiency benefits for businesses.

Several of the organisations interviewed had developed innovation streams or centres of excellence that revolve around innovation so as to become more sustainable and efficient. For example with M1, its focus has been on reducing water consumption and energy consumption which has led to superior quality products being developed. “So you would have KPI’s being driven from more than one perspective but at the same time it goes hand in glove with your sustainability measures.”

These finding are also relevant in relation to organisational risk management. For example, in the case of FS1, where sustainability is a risk management strategy for the business, the business tracks certain sustainability metrics proactively so as to prepare for external risks relating to policy, society and the environment. As a risk mitigation tool, FS1 is constantly monitoring these key areas and has the ability to flag key areas of concern to executive management as and when a risk materialises.

Through the use of quantitative data, technology platforms have and continue to play a role in tangibly demonstrating how sustainability activities have a positive effect on the company and the environment within which it operates. As articulated by the individual interviewed from M1, the financial benefits realised from sustainability activities however tend to be the primary driver of the measurement of an organisation’s sustainability activities as the quantified measurement of such benefits drives increased buy-in from the executive level for engaging in sustainable activities.

## 4.5. Content and Process

Content and process became interconnected in this phase of the research as it became evident from the research findings that only one of the organisations had gone through the process of developing its own system of sustainability measurement. None of the individuals interviewed had been present at that phase of the change activity. These two dimensions have since been grouped together as there was some overlap in the responses to questions concerning the scope of these activities as well as the process that was undertaken within the business.

### 4.5.1. Frameworks as a Guide

A common theme which emerged from interviews with all interviewees is that the departure point for identifying what metrics were key to the organisation from a tracking point of view began with the various reporting frameworks established within each organisation. The respective reporting frameworks at each organisation gave the individuals responsible for the quantifying process a gauge on what was materially and specifically important to that organisation's stakeholders. For CG2, an organisation with over 200 sustainability indicators which are tracked in real-time, "these [indicators] are based on the various reporting frameworks and other reporting guidelines we need to use and also the fact that we have a very diverse business between food, clothing and financial services".

Data management and monitoring technology platforms contribute to synthesising metrics particular to an organisation and creating a common way of tracking such metrics in a process that can be constantly updated to see progress. From the research, it is apparent that frameworks guide the creation of tools and direct focus toward key metrics so as to ensure that the monitoring system adds value to the organisation internally and externally contribute toward tracking the activities for which the organisation is responsible as a corporate citizen.

#### 4.5.2. Lack of Common Metrics

A key theme that was extracted from this research is that while there are many common baskets of indicators that can be tracked across companies relating to measuring sustainability, the actual ways these areas affect the business and the way the indicators are made specific to each organisation, means that there is little commonality across companies. Each company uses frameworks as a broad guide and focuses on key areas of materiality for its specific context. This makes it difficult to benchmark companies against each other as the nature of the activities measured and reported on varies across organisations and individual measures at an organisational level are based on internal targets as opposed to standardised category or industry targets.

Information technology platforms are enabling a standardised means of reporting within companies and ensure consistencies within the organisation. The way these systems are contributing to calculating the impact within the organisation has the potential to give guidance to companies who are beginning this journey, specifically when the method of calculation is outlined in the annual reports.

Additionally, external organisations are developing technology platforms that that are being rolled out to a variety of companies. These technology platforms are not built internally and utilise standard KPI's for tracking sustainability indicators. One example of such a platform is SAP's Enterprise Sustainability Planning Application (ESP) which, according to the report *Sustainability: Moving from compliance to leadership (2011)*, has "established 400 sustainability metrics embedded in its processes and saved \$250 million between 2008 and 2010 in energy costs." The SAP sustainability module falls into the broader SAP ecosystem and contributes to establishing a more standardised understanding of organisations relative to each other. More importantly though, the ESP system is capable of integrating with all the other tracking modules that a business utilises so as to provide holistic measurements of business performance specific to an individual business.

#### 4.5.3. External Measurement Companies

A common feature amongst organisations seeking to mature in respect of their sustainability initiatives is the hiring of external measurement companies to quantify specific areas where the organisation does not have the resources or capacity internally. The hiring of external companies is predominantly taking place in the consumer goods environment where external measurement companies have been employed to track consumption and develop real-time reporting dashboards that are accessible by organisations. For CG1 and CG2, external companies have developed real-time online web based systems.

Externally developed systems are providing organisations with the benefits of interacting with and understanding the need for such systems before undertaking this exercise internally. The use of external systems enables organisations to gauge the potential value of having a real-time view before undertaking the financial commitment of investing in a system to track all areas of material importance to their sustainability. One individual interviewed described how the process of experiencing a real-time dashboard calculating her organisation's total energy consumption had led her to begin the internal process to initiate the development of an internal system to calculate the group's integrated impact.

#### 4.5.4. Systems of Data-gathering

##### *MICROSOFT EXCEL:*

Each of the six organisations interviewed for this research have used, or had used as a starting point, Microsoft Excel spreadsheets to aggregate their sustainability data. These spreadsheets were generally compiled by individuals within a sustainability team, however the manual nature of this process had flaws with regard to verification. As a means of addressing issues concerning data validity and verification, spreadsheet controls were established to include pre-populated fields only. Microsoft excel is used in a more sophisticated way by FS2 where its spreadsheets feed directly into a dashboard system for different projects and streams. Microsoft Excel, via its feed into the dashboard system, in this actuary heavy organisation is the primary organisational business tool for decision-making.

#### *ONLINE TOOLS:*

At CG2 a web-based tool has been built for the organisation to measure its sustainability activities. This tool “is not a spreadsheet, it is an online web-based system. Two or three individuals per team have access to the system, they put in feedback for each of their indicators that are an aggregation of their teams’ data and we can kind of give them pretty much instant feedback in terms of the progress and the scoring”. This system is reporting on the 200 or so indicators that are of importance to CG2’s strategy. Because the business is fairly convoluted and complex, the system simplifies the data for the organisation as all the calculation work is done on the back end, and the dashboards enable a constant view of where the organisation’s activities are tracking.

The representative from M1 stated that M1 has “a relatively sophisticated system, so everything is in a fully integrated model from the time we receive raw materials to the dispatching of our finished goods. We would be able to say year-on-year month-on-month how we are performing with specific customers, and be able to aggregate that to industry information.” Because sustainability is inherent in M1’s business model the system enables M1 to assess its sustainability impacts in real-time as it relates to its business activities.

#### *THIRD PARTY SYSTEMS:*

At M2, as part of a broader company-wide change process the company has implemented SAP modules for various areas of their business, including sustainability, for which the business wants aggregated reporting. This is part of M2’s business efficiency change process. The adoption of the third party system has been done with the view of attaining a flow of information which allows the company to proactively make decisions based on data instead of reactively responding to situations post the happening of such situations. Until recently all data was collected using Microsoft Excel but M2 have now found the need for a more sophisticated system that automates the entire business’ operations. In addition to M2, CG1 also initiated a third party system with energy measuring tools to provide a real-time view of energy consumption. This tool is accessed through a web-based dashboard developed by the third party system provider.

Digital systems of data-gathering have streamlined the process of sustainability performance measurement for the companies examined in this research. As these companies have become more reliant on the outputs provided by these data-gathering systems for their decision-making, the need has arisen for more sophisticated systems to be developed which are capable of processing increased volumes and sources of data.

#### 4.5.5. Sharing the Data

The reporting of data outputs takes place in a variety of ways. All six companies examined confirmed that bi-annual or quarterly sustainability reviews are held at which insights and system updates are shared with the broader organisation, often for the purpose of inclusion in the company annual and sustainability reports. The annual report is an aggregation of the organisational data and is shared with all stakeholders annually. In several cases year on year metrics are included in these reports to demonstrate progress.

Additionally, where sustainability metrics are part of a business' key areas of activity, such as in the case of FS2, sustainability reports are presented monthly as part of monthly business target discussion. For FS1, where the group's activities are incredibly broad, the interviewee chooses to report on trends quarterly rather than specific sustainability metrics as her executive team respond more to a qualitative narrative of the business' progress with regards to its role as a corporate citizen. "It is very qualitative, so what we will take to a management committee or executive committee meeting is not a dashboard. It is trends, so for the group they will see an issue and see that we have flagged it. But they'll get high level and business needs to take ownership and drill down. I think there are easily quantifiable metrics that align more with business efficiency but with big strategic issues about where the business is moving and what decisions to you need to make, it is very qualitative and not easy to track relative to KPIs."

Digital platforms help simplify streams of complex data, which can be presented in a dashboard format to show progress, or failure, in a visual and dynamic way.

#### 4.5.6. Evolving KPI's

Each of the companies examined constantly update the indicators which are tracked in assessing the sustainability of the business. These indicators change as the business context changes and many of the companies accordingly review specific indicators at least once a year to ascertain whether there is anything that needs to be updated. In the case of CG2, it began its journey to sustainably sourced products by “first by saying we don’t want any red listed species in our business, then we moved towards saying we have orange species in our business, let’s find greener alternatives, to replace them. Then it became let’s help our supplier; instead of just saying we are not sourcing this, let’s help that supply chain. So there is always a next step, we don’t just measure things for the sake of measuring it.” According to M2 “as time goes and we start understanding the data better, and we get better ways of measuring the data, we can understand what is important to us”.

What emerged through this research is that the more a company measures its activities, the more activities there are to measure. Once a company starts tackling its broader sustainability challenges in a quantifiable way, it begins to understand the granular areas which determine what to additionally track or where to additionally direct its focus. “I think about seven years ago, when I started specifically in this job, all our greenhouse gas indicators, there were only four of them. So it was methane and CO<sub>2</sub>, broken up into direct and indirect, only. Then we found okay, we need to start reporting what are our Scope 3 emissions. Is it something that's material to us, let's go have a look. We went and we did a study to see if Scope 3 emissions are important to us. Yes, so we added it as an indicator. Then we said okay, we've got CO<sub>2</sub>, can we break it down further. Can we understand where exactly, what are the sources of this CO<sub>2</sub>. Can we break it down a little bit further?”

The role technology platforms play with regard to evolving targets is that these different platforms provide tools which enable the organisation to aggregate many different sources into one holistic picture. There is the ability to get both a broad view of the impact of the organisation, and then, in a fairly simplified way, to identify sources and understand the reasoning behind the behaviours of

the different metrics that are being tracked in order to get a more granular picture.

Data can be fairly complex to understand and with the volumes of information available, making sense of this data in a way which impacts on business thinking is challenging. Information technology tools have the ability to simplify and synthesise with various drilled down views enabling the business to see the granular impacts of the business more meaningfully, such as in the case of CG2 where the organisation constantly find opportunities to isolate areas of improvement. “I guess probably from sort of early days we’ve ended up, because we’ve got such a broad range of indicators, we’ve ended up measuring things that maybe we wouldn’t have been looking at in as much detail as possible. So for instance people on the real estate team who do our stores development, we had a whole thing around gas losses, refrigeration gas losses. It just kind of came out of the fact that percentages were really high so we started digging into more detail and we’ve got third party providers who do that work for us and then we started renegotiating the targets for processes because the third party providers were actually not doing what they were supposed to. So it does tend to pick up concerns on a broad scale on a lot of detailed issues.”

#### 4.5.7. Embedding these Behaviours

The companies interviewed demonstrated different ways in which quantifying sustainability was being embedded into the organisation’s culture and practices. In Bertels et al. (2010) the authors outline the different ways in which companies embed certain activities into the organisation’s culture. The authors describe four different broad mechanisms for embedding, however the one which applies to this topic of research, is the area referred to as “formal practices aimed at fulfilment” (Bertels et al., 2010, p. 15). The mechanism is aimed at formally integrating a behaviour or activity into the culture of an organisation and codifying this practice within the organisation. In addition to merely codifying, some of the organisations who are more sophisticated and mature, are embedding sustainability in a variety of ways beyond just clarifying expectations but utilising this embedding as a platform for driving change and sustainable growth.

CG2 is the most sophisticated of the companies interviewed for this research with regard to how sustainability is integrated into its business model by way of the use of data and formally integrated sustainability targets to measure and incentivise performance. Sustainability objectives are a core part of CG2's balanced scorecard and such objectives affect employee remuneration and bonuses. The extent to which sustainability objectives are applied in the performance appraisal of individual employees depends on the role and business unit of the individual employee based on a mixture of both the achievement of overall objectives and also against specific metrics within that employee's balanced scorecard. Such practices enable sustainability thinking to trickle down to the lowest level of staff in branches who may, for example, be judged based on how many plastic packets get sold from each specific store.

For M2, sustainability is similarly integrated in the performance appraisal of individual employees. For M2, safety is a key component of its strategy on account of the social and environmental risks associated with its business operations. "So for example, the chief executive officer, right down to the person on the plant, their performance bonus, or their performance increase for example, has a safety component to it. Because that is how important safety is within M2. So as we measure the data, if there's an improvement, you get obviously a better bonus. If there's not, you don't get a bonus."

M1 has a less formalised processes regarding performance in sustainability activities however "what you will find is that specific objectives will be agreed with certain people that have a direct impact with sustainability issues. So, as an example, we would have an engineer agree with the business that a task for the year is the reduction of whatever, be it recyclables to landfill or minimisation of oil consumption or whatever, and that becomes a very specific objective for the individual concerned and that individual will be managed accordingly and we have an incentive scheme around that type of thing."

In the case of FS2, because their business model is one of shared value, performance is intrinsically linked to sustainability performance. "It is implicit because of our business model." With FS1, currently their biggest struggle is linked to the integration of sustainability into the business at a strategy level.

“Currently we have people who are driven by their targets and it is very difficult to change behaviour when those targets are financially driven, and that is something we are grappling with. At an executive committee level, their performance bonus is linked holistically to the quality of the business they are building as well as their financial performance but in order for them to be deemed successful they need to show at the end of the day that everything that they do feeds into final performance and revenue generation.”

The availability of hard data from sustainability activities is essential in determining tangible benefits associated with certain behaviours and sustainability practices. Tracking this data and associating metrics with these activities help to formally embed sustainability-focused behaviour deeply into organisational culture and individual behaviours. The use of information technology platforms and tools give the business the ability to help quantify these behaviours in a way which can be used to calculate performance bonuses, something qualitative data may not be able to achieve, as it is often subjective.

This is further entrenched by findings made in the report “Sustainability: Moving from compliance to leadership (2011) which suggests that “the true indicator of success is that sustainability behaviour becomes second nature. By embedding sustainability dimensions into products, services, and business processes, from performance reviews to sourcing decisions, companies can more quickly get that second-nature result.”

#### 4.5.8. Incentives for Engaging

Beyond formal practices for embedding sustainability, several organisations interviewed have other less formal ways of driving engagement with certain areas of sustainability within the business. For CG1, they encourage competition between branches around sustainability areas that they are currently tracking in real-time, appealing to the competitive nature of store managers. “We try have a culture of competition. Our business model is one of competition. Stores of the same size pitting against each other and we bench them against each other for sustainability. Like how come store x is using less energy than you and they’re bigger, etc.?”

CG1 also has a unique method for incentivising sustainability behaviours amongst their suppliers, which is the largest area of impact for its business. “Our biggest thing is suppliers. I mean last year a couple of suppliers filled out our survey. We can pick up who’s not doing well and who’s doing great with regard to their sustainability activities and we reward them for this. It’s chaotic but we can say that from when we started doing our environmental survey 50 percent of our suppliers are now setting targets. We have supply chain incentives, with the better suppliers incentivised or rewarded with a lunch, or press and sometimes improved space on our shelves, etc. so that also encourages them to be more sustainable.”

M1 has “other forms of recognition that drive performance, so we have annual awards and it’s quite a glamorous affair and people like to get invited to these and are recognised at them. So that too drives enthusiasm to accomplish certain things relating to sustainability, especially if there is a cost-saving benefit.”

From the research it is apparent, that tracking data and capturing it in a system enables individuals in an organisation to measure progress year-on-year which drives various rewarding activities. In addition, having verifiable data helps provide tangible proof of performance which can foster a culture of competition. Such incentives for engagement are facilitated by way of online systems and data capturing tools which contribute toward formally embedding sustainability into the organisation.

The act of encouraging interaction with sustainability behaviours is made more relevant to individual employees when these employees are able to see the measurable effects of their activities. This is further entrenched when that data is integrated into overall performance management of the organisation, further encouraging sustainable behaviours. Incentivising this behaviour helps to positively drive embedding them into the business. Of importance to such incentivisation is the act of linking performance only those KPIs which are instrumental in driving the connections between sustainability activities and behaviours.

## 4.6. So What

The previous areas that were examined in this research all serve to define the current landscape of what is; however what emerged from the research is that much of the work being done by the organisations interviewed is centered on the future intentions of the organisation. The anticipated outcomes of their activities, as well as the aspirations of these organisations, serve to provide as a guide to the future sustainability activities of these market-leading organisations

### 4.6.1. Sustainable Data-driven Business Models

As Marr (2010) suggests, we are experiencing an explosion of data availability and it is time for organisations to become more intelligent with how they harness this data and use it to drive intelligent business decisions.

In the case of M2, which is beginning the journey toward an automated data-centric operating model, its vision is to become less reactive and more proactive as an organisation:

“so that is the end goal. We have all of these SAP systems, from HR, from procurement, etc. that will pull through into our sustainability performance management module. So instead of now having people entering the data, which is where we are currently, because we've moved from Microsoft Excel to this. We'll actually even get to a point where we could probably calculate our safety measures, the minute an incident happens. So once we can get those types of trends you know, we'll be able to start preventing injuries. Because if we know that if we have certain circumstances and they are high risk circumstances in a plant environment, we'll be able to say immediately, listen guys, this is high risk, be more aware you know, and start preventing injuries and things like that. But because the data's still lagging, those type of preventative actions don't happen.”

Using data to create immediate feedback is a powerful tool for organisational and strategic growth, especially where historically, effects were only calculated annually and the lag in feedback did not enable immediate action to be taken.

As the interviewee from CG2 stated, “I think it gives us a really clear view of what we’re doing well at and where the kind of challenges are that we need to focus on addressing. And also a kind of 5-year view in terms of the longer term targets that we are working towards. So it creates a good balance of short, medium, and long-term focus for each of our business units.” The decisions taken by the companies currently utilising a quantitative measurement system such as CG2 and M1 appear to demonstrate the dependence those responsible for strategic decision-making have on the analytical data they receive from these systems. New buildings, suppliers and areas of focus appear to be determined by the potential, and quantifiable, effect they have on areas of importance to the business.

Those organisation interviewed which currently track their sustainability targets using a variety of internal spreadsheets, surveys and tools, all expressed a desire to move toward an automated integrated system that enables the embedding of sustainability into the organisational strategy and less energy on collating data and ‘chasing’ spreadsheets.

#### 4.6.2. Sustainable Individual Behaviour

In addition to the tangible benefits that arise for an organisation from tracking the effects of activities designed to minimise impact and maximise value for all stakeholders, the embedding of sustainable practices within an organisation and its employees is realising other societal benefits in the conduct of individuals in their lives outside of the organisation. This is seen in the practices of the one interviewee who “now treat(s) electricity a little differently at home.” The contagion of sustainable practices aligns with views put forward in research relating to the neuroscience of the organisation. In this research it is described how, with repeated focus on a specific action that is different and more challenging than the activities that are already coded in the individual’s neural pathways, there is the ability to change behaviours and create new neural codes that eventually makes this action part of the unconscious set of activities that an individual is able to do naturally with little or no thought given to the activity (Rock & Schwartz, 2007).

Persistent interaction with data-driven sustainability practices and quantified behavioural motivators, such as remuneration based incentives, have the potential to shift individual their behaviours to be more sustainable. The more the individuals within an organisations are judged by their ability to drive a sustainable organisational agenda, the greater the potential impact on their personal activities and their personal perspectives on sustainable behaviour in general.

#### 4.6.3. Positive Stakeholder Effect

The outcome of internal sustainability activities within organisations gearing themselves for future sustainability is evident in the impact such organisations are having on their external stakeholders. In the case of CG1, their suppliers are actively being guided towards becoming more sustainable. Suppliers can contact an individual in CG1's sustainability team and request information on how to fish more sustainably, how to conserve more water as a maize manufacturer and how to sustainably farm timber. The effect is not just for CG1's benefit, but this also benefits all the other local retailers who buy products from the same supplier.

For FS2, they are currently integrating “a fourth bottom line into its business”, a community pillar. “This is not just about FS2. How do we build a healthy society? So that's what's next. Not to become more sustainable internally as an organisation, but to encourage a healthier external society. That's kind of the thought leadership we are trying to carry forward. Which everybody is talking about, but everyone is asking how do you aggregate this, how do you put this together, and how do you benchmark against your current activities.”

#### 4.6.4. Formal and Informal Embedding Practices

The research revealed several organisational embedding practices which contribute toward driving the sustainability agenda within the organisation through the use of metrics or targets supported by data. These were both formal and informal practices. The formal practices related to the integration of sustainability into the overall performance measurement system of the individual and was in the form of either a balanced scorecard or integrated into

that individual's overall KPIs. This extended from senior management to branch staff, with individual scorecards and KPIs aligned to that employee's unique operating areas. This practice forms part of the cumulative set of targets that affect individual performance bonuses.

In the case of CG2, the integrated sustainability system is used to gauge individual performance and enables a method of calculating if an individual is achieving his/her integrated KPI's.

Less formal practices exist where individual targets are set between the company and some of its employees to achieve certain sustainability-related targets. An example of such was seen with M1 which sets a target for its engineers to decrease the water consumed in the manufacturing process. The current consumption is identified through the use of the M1's integrated and automated tracking system. M1's engineers are able to quantifiably know what he/she needs to achieve and is incentivised to achieve such ends by way of a bonus linked to future costs saved by the company. The informal embedding of sustainability practices have been established to promote employee motivation and recognition as well as foster competition between teams within the organisation over sustainability-related targets. For CG1, its informal practices require individuals in different areas of the business to fill out Microsoft Excel forms which are then used to judge performance against the business targets.

The embedding of sustainability practices is further extended by CG2 to its external supply chain by way of incentivisation mechanisms for suppliers to be more sustainable. Such practices extend to the sharing of guidelines on sustainability with suppliers and the rewarding of suppliers for meeting the targets set out by the organisation with lunches and improved shelf space for certain products. The compliance of suppliers with their sustainability targets is judged by CG2 based on the supplier response to a digital survey sent out via email quarterly and aggregated internally to judge quarterly performance.

These formal and informal mechanisms of embedding culture are largely facilitated by technology platforms and performance is calculated using data gathered on various systems. This ability to quantify progress provides

employees with an incentive for engaging with activities and is contributing towards shifting organisations to becoming more sustainable.

#### 4.6.5. The Role of Context

From the case sites examined and the individuals interviewed it became apparent that internal and external drivers play a role in determining how sustainability can be embedded into an organisation's strategic decision-making, as well as the degree to which technology can act as an enabler for embedding sustainability into an organisation. Where the primary driver of the sustainability activities was largely compliance or regulation orientated, the organisation appeared to view sustainability with a corporate social responsibility lens. When referring to the business in relation to its social, political and environmental context, the individuals interviewed such as the individual at FS1, suggested the role of her department is to ensure the organisation was a good corporate citizen. The interviewee from FS1 spoke of the challenge of driving behavioural change when the sustainability department of the organisation was such a small component of the larger business organisation. This was compounded by the fact that the majority of the organisation's performance metrics were still purely financial. Sustainability, and the data and tools associated with tracking its performance, appeared to be bolted on to the organisation and as such was not meaningful in enabling sustainability to become more embedded into the business strategy.

Conversely, when the drivers or motivations for sustainability were internally driven, whether by a revision to the business model, leadership or an innately sustainable business model's performance targets, the role of sustainability itself was far more deeply embedded into the day-to-day activities of the organisation. In such cases there was a greater receptiveness within the organisation to data that related to sustainability because this data aligned with the strategic growth objectives of the business. The same tools used by the organisation to drive their business objectives were those that tracked sustainability and this integration in business intelligence contributed toward more deeply embedding sustainability into the business model.

In terms of the ‘So What,’ generally for the organisations interviewed for this research, it is apparent that as a company matures along its sustainability journey, the business needs shift from the starting point of simply quantifying internal factors to ultimately creating systems to automate the quantification process. Following this shift, organisations tend to move toward becoming increasingly analytical as they are able to focus less on administration related tasks and look externally to seek the creation of shared value. The extent of progress in organisational sustainability maturity was demonstrated by each organisation in the the degree to which sustainability was integrated into its business model.

#### 4.7. Summary of Research Findings

A summary of the research findings is set out in Table 9 below.

**TABLE 9: SUMMARY OF RESEARCH FINDINGS**

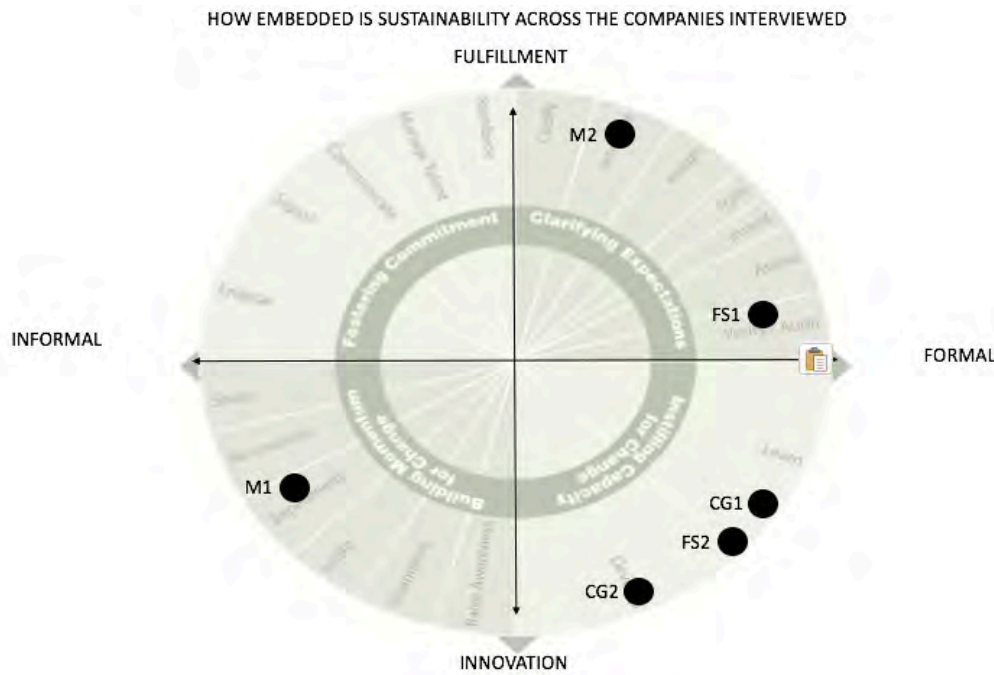
<b>Company Name</b>	<b>Technology used in the context of sustainability</b>	<b>Degree to which technology embeds sustainability into the business model.</b>
FS1	Low usage of technology – Microsoft Excel spreadsheets to capture data for compliance reporting	At a reporting level for annual report and to track trends
FS2	Sophisticated Microsoft Excel dashboards that integrate business data with sustainability indicators	At a strategic integrated level to drive business objectives
M1	Use integration tracking system to understand the granular activities to constantly drive improvements, measure performance	At a business growth level – the better the business understands the consumption and environmental effects of its activities, the more it is able to innovate and optimise
M2	Beginning to implement technology platforms to enhance sustainability tracking to see real-time effects of activities and drive future decision making	Enabling the business model evolution to become more sustainable and quantifiable

CG1	Real time tracking of energy consumption to drive employee behaviours using Microsoft Excel to track supply chain activities. Desire to move toward more automation of tracking key areas of importance to sustainability of company	Maturing in technology requirements as the business focuses more energy on the sustainability of its stores and supply chain. Currently enabling collection of data and real time data on energy consumption
CG2	Integrated, embedded real-time system tracking performance against targets for key indicators to ensure the company is constantly achieving its strategic sustainability vision.	Integrated into business model – enabling organisational decision-making and performance management

What emerged from this research is that where the organisations were reliant on data that was a combination of both financial and sustainable indicators to make business decisions, when attempting to integrate sustainability into business targets and practices, technology played a role in embedding such practices.

At the organisation where the interviewee expressed that sustainability for the business was a desire to be a good corporate citizen only, the interviewee articulated a view that sustainable impacts for the business were linked to basic efficiencies and that as a result of such views all data-related activities to track performance on sustainability targets was done peripherally to the daily operations of the organisation. This company did not have incentives linked to achieving sustainability targets and as such the technology platforms used by the organisation were used only to aggregate data for the purpose of compliance reporting and verification.

Figure 16 below attempts to map the degree to which sustainability is embedded into the businesses interviewed:



**FIGURE 16: SUSTAINABILITY EMBEDDEDNESS**

As can be seen in the figure above, the interviewed companies are all at different stages of embedding sustainability into their core business goals and objectives. However, all of the interviewed companies are attempting to at a minimum to quantify their impact in various areas relating to the sustainability of their business for compliance reporting and verification purposes. It can be assumed that these companies all appear to be relatively advanced in understanding their sustainability impacts as a result of mandatory reporting requirements imposed on them by various stakeholders, be it as a result of their being category leaders or listed organisations.

#### **4.8. Emergent concepts: Technology as an Enabler**

Several areas of interest emerged from this research which demonstrate the ways in which technology is enabling sustainability to be integrated into the strategic decision-making of the organisations explored for this research. Some of these concepts are applicable to all the organisations and others only to one or two of the companies. All of these concepts emerged within the context of exploring how technology enables sustainability to be integrated into organisational strategy.

#### 4.8.1. Technology as an Enabler of Data Collection

Table 10 below sets out a summary of the application of data collection by the companies examined in this research:

**TABLE 10: ENABLING DATA COLLECTION**

<b>Company Name</b>	<b>Data Collection</b>
FS1	Yes – data inputted into Microsoft Excel spreadsheets
FS2	Yes – data inputted into Microsoft Excel spreadsheets
M1	Yes – data gathered in an integrated system
M2	Yes – data inputted into Microsoft Excel spreadsheets, gathered by SAP sustainability modules
CG1	Yes – data inputted into Microsoft Excel spreadsheet, gathered by third party real-time data gatherer
CG2	Yes – data gathered by internal sustainability performance management system

All the individuals interviewed for this research relied on a technology of sorts to gather the data they require for reasons including compliance reporting, monthly business reporting, supply chain activities etc. A common reason given amongst the respondents was the need for verification of the data for audit purposes and when the data had been gathered using a technology platform it was easier to audit data and verify its accuracy.

#### 4.8.2. Technology as an Enabler of Automated Sustainability Data Collection

Table 11 below sets out a summary of the application of automated data collection techniques by the companies examined in this research:

**TABLE 11: ENABLING AUTOMATED DATA COLLECTION**

<b>Company Name</b>	<b>Automated Data Collection</b>
FS1	No – inputted by individuals

FS2	No – inputted by individuals
M1	Yes – integrated system automatically gathers data
M2	Sometimes – some manual inputs, some automation (SAP software)
CG1	Sometimes – some manual inputs, some automation (3 <sup>rd</sup> Party Tracking company)
CG2	Sometimes – some manual inputs, some automation (internal performance management system integrated with certain business activities and automatically pulls in data without manual input)

Several of the individuals interviewed explained that manually capturing data was time consuming and detracted attention away from areas of strategic priority because of the administrative burdens associated with manually inputting data in a spreadsheet and the chasing staff and suppliers for responses. However, as organisations matured in their views of the role sustainability played within their businesses, organisations introduced more sophisticated business intelligence tools to automatically capture the data believed to be of material importance to the business decision-making. The automation process resulted in certain key indicators being constantly tracked without manual intervention and thereby allowing efforts to be focused on monitoring progress instead of capturing the data.

#### 4.8.3. Technology as an Enabler of Aggregation

Table 12 below sets out a summary of the application of the aggregation of data collection by the companies examined in this research:

**TABLE 12: ENABLING AGGREGATION OF DATA**

<b>Company Name</b>	<b>Aggregated Data</b>
FS1	No
FS2	Yes – actuarial spreadsheets have formulas that aggregate a variety of data to display an overview of performance in key

	business areas that incorporate both business and sustainability metrics
M1	Yes – an internal system aggregates a variety of processes and activities to give an aggregated measurement that incorporates a variety of business areas into an integrated number
M2	Yes – some areas of the business rely on sophisticated spreadsheets with formulas to aggregate different sections. As the business evolves its operating model, it is implanting systems that aggregate different areas of the business, including sustainability indicators and display these indicators as an aggregated number to benchmark against
CG1	Some – some areas relating to the sustainability of the business are calculated manually and others, such as energy consumption have a third party provider tracking consumption and reflecting an aggregate consumption figure for the business on a real-time dashboard
CG2	Yes – an internal system aggregates data on 200 indicators to reflect how the business is performing relative to set targets

Aggregation enables a synthesised view of the organisation’s activities in a specific area. It enables individuals in the organisation to have a collective understanding of where the business as a whole stands in relation to achieving certain business and sustainability targets. It also shows if a business, in its entirety, is going to meet set targets.

#### 4.8.4. Technology as an Enabler of Real-time Data and Decision Making

Table 13 below sets out a summary of the availability of real-time data by the companies examined in this research:

**TABLE 13: ENABLING REAL-TIME DATA AND DECISION MAKING**

<b>Company Name</b>	<b>Real-Time Data and Decision Making</b>
FS1	No Real-time data

FS2	Partially – sophisticated spreadsheets link business targets with sustainability targets and real-time tracking of data. The aim of real-time tracking is to ensure that where the business is tracking low relative to its targets, the business understands what levers to engage to better meet those targets
M1	Yes – system tracks in real-time and allows the business to see exactly what is happening so as to enable the business to make decisions based on the data without a lag
M2	Partially – goal is to move to real-time decision making model. Beginning to implement systems to enable this as part of the new operating model
CG1	Partially – some of the business data is available in real-time and this is integrated into decision making at a store level and behaviour change activities. The goal is to have systems tracking the entire supply chain
CG2	Partially – system is tracking some indicators in real-time and this is used to get a sense of what is happening within certain areas of the business and enables the focussing of energies in the short term on addressing performance against certain indicators

As the organisations mature in relation to how integrated sustainability data becomes with their other business data and use more sophisticated tools to analyse and integrate such data, they are able to use the quantified data that is being tracked in real-time to have a snap-shot of their business at any point in time. This real-time data is used to make decisions, the effects of which can be assessed in a shorter time span by way of the analysis of continuously updated real-time data.

Table 14 below sets out a summary of the application of technology as an enabling mechanism by the companies examined in this research:

**TABLE 14: TECHNOLOGY AS AN ENABLING MECHANISM**

<b>Company</b>	<b>Data Collection</b>	<b>Automation</b>	<b>Aggregation</b>	<b>Real-time decisions</b>
FS1	Yes	No	No	No
FS2	Yes	No	Yes	Partially
M1	Yes	Yes	Yes	Yes
M2	Yes	Sometimes	Yes	Partially
CG1	Yes	Sometimes	Some	Partially
CG2	Yes	Sometimes	Yes	Partially

The primary question was intended to identify how technology can contribute towards embedding sustainability into strategic decision-making and the outcomes of this study show that the role technology plays is dependent on the role of data in the business and the importance of sustainability to the overall business model.

#### **4.9. Research Conclusion**

The expectation at the outset of this research, based on themes explored in the literature review, was that the content and process (or the how and what) of the sustainability activity would be the primary area for discussion and would generate the more meaningful insights to come out of this research. However, what became apparent through first hand discussions with the interviewees is the importance of context in this process. The context or drivers of the reporting initiative within the company is what appears to drive sustainability activities and how the data is integrated into strategic decision-making where relevant. The nature of the drivers or context seem to determine the process, content and the ‘so what’ and the degree to which technology can act as an enabling mechanism.

What emerged from interviews is that where the drivers are primarily externally driven and focused on data gathering for the purposes of external stakeholder reports, corporate governance or good corporate citizenship, the data-gathering process appears to create a layer of administration and does not appear to add much value intrinsically

to the organisation beyond verification for audit purposes. In these instances of external drivers informing the data-gathering process, the data-gathering process does not appear to be geared towards quantifying impact or aid decision-making but merely as a means of providing information to meet regulatory or other external obligations.

If the drivers for quantifying sustainability activities are external as well as internally driven as a result of the business model, operating model or growth strategy of the business being sustainably orientated, then the sustainability metrics, and the tracking and quantifying of these activities, becomes far more intrinsically important to the business on account of the business necessity of ensuring that these integrated business objectives and targets are met.

It appears that each of the organisations interviewed fit along a spectrum of maturity in their respective journeys to becoming data-driven sustainable organisations. As organisations mature in their sustainability journey, so to do their needs appear to mature. There appears to be an evolution within the organisations from merely tracking sustainability data, to quantifying and setting targets, to ultimately requiring a means of automating the data-gathering process in a way that enables verifiable real-time data to be integrated into decision-making. The companies which appeared to have an internal driver towards quantifying their sustainability activities all articulated in some form that it is possible to change only those things which are quantitatively known to be true. The organisations with fully integrated data solutions tend to link the holistic results of their data analysis with individual performance bonuses.

For FS1 sustainability data is not directly integrated into its decision-making processes, but is embedded into the organisation through different means. This is articulated by the FS1 interviewee in that “big strategic issues about where the business is moving and what decisions you need to make are very qualitative and not easy to track relative to KPIs.”

What can be seen from this exploration is that information systems, within the context of the organisations interviewed, have the potential to enable the embedding of sustainability into the organisations when these systems are used to contribute to both the formal and informal fulfilment and innovation of sustainability activities. The technology platforms are meaningful within and relevant to the organisation to the degree that these systems enable a quantified view of performance in relation to specific

integrated targets. When the data provided elicits a positive outcome for an individual, whether employee or supplier in the form of a performance bonus or supplier incentive, it further entrenches the system into the culture and activities of the business.

If the role data plays within the organisation is superficial, the role technology platforms play also becomes superficial to the business. However, if data is integrated into business operations, then technology platforms have the ability to facilitate core business decisions. The businesses interviewed demonstrate that there is a scale for how technology can embed sustainability into the organisation: from superficial (data capturing for a sustainability report) to fully embedded (are we tracking on target to reach our business decisions).

Table 15 below sets out an overview of the research results applying Pettigrew’s framework (1987) to the interview results:

**TABLE 15: REVISED MODEL, APPLYING PETTIGREW’S FRAMEWORK TO THE INTERVIEW RESULTS**

PETTIGREW STRATEGIC CHANGE FRAMEWORK: APPLIED TO SIX CASE SITES				
	CONTEXT – WHY   INTERNAL AND EXTERNAL DRIVERS	CONTENT   WHAT PROCESS – HOW   DEPTH & IMPLEMENT	SO WHAT	ROLE OF TECHNOLOGY
SUPERFICIAL	EXTERNAL: COMPLIANCE REPORTING ANNUAL REPORT INTERNAL: COST EFFICIENCY RISK MANAGEMENT	EXCEL SPREADSHEETS: AGGREGATE DATA TREND REPORTING BROAD IMPACT VIEWED QUALITATIVELY INSIGHTS SHARED	VIEW OF BECOMING MORE ANALYTICAL ORGANISATION: EARLY STAGES OF MATURATION	IMMATURE ORGANISATION: USE OF TECHNOLOGY- DATA CAPTURING FOR STANDARDISATION AND EASY ANNUAL REPORT ACCESS
EMBEDDED	EXTERNAL: COMPLIANCE REPORTING REPUTATION INTERNAL: BUSINESS MODELS LEADERSHIP MEASUREMENT TO GROW	FRAMEWORKS GUIDE SOME INDICATORS SOME OR ALL SUSTAINABLE ACTIVITIES INTEGRATED INTO BUSINESS MODEL FREQUENT TRACKING OF INTEGRATED ACTIVITIES CONSTANTLY EVOLVING KPI'S INTERNAL OR EXTERNAL TRACKING OF ACTIVITIES RELATING TO SUSTAINABILITY TO PROVIDE REAL TIME INSIGHTS INTEGRATED PERFORMANCE MANAGEMENT	SUSTAINABLE DATA DRIVEN BUSINESS MODELS ULTIMATE GOAL HEIGHTENED INDIVIDUAL AWARENESS EXTERNAL STAKEHOLDER SUSTAINABILITY INITIATIVES	SIMPLIFY COMPLEX DATA INTO UNDERSTANDABLE METRICS AUTOMATE DATA GATHERING PROVIDE A SYNTHESISED VIEW OF ACTIVITIES SHOW QUANTIFIABLE METRICS TO DEMONSTRATE PROGRESS PROVIDE REAL-TIME INSIGHTS IN EFFECTS OF ACTIVITIES WITHOUT A LAG IN DATA GATHERING

(Pettigrew, 1987)

#### 4.10. Discussion, Future Research Directions and Practical Implications

What is interesting to note is that there is an alignment between the themes explored in the literature review and the themes which emerged in the research. The concepts that emerged from this research provided several future research opportunities to be

explored as well as some practical implications for organisations looking to embed sustainability more deeply into their business.

Further research may want to focus on a broader set of organisations to identify if there are commonalities beyond the case sites that were looked at for this research, expanding on this research to include a broader view of South African companies. In addition to looking across a broader range of organisations, an area of further research that could be explored in more detail, is how within an organisation a spectrum of individuals is being affected by data and data management systems in their day-to-day operations and strategic initiatives, testing the concepts that have emerged with this research on a broader set of individuals within a single organisation.

Another area of research for future exploration is to potentially engage in a deeper understanding of the effect of context on the sustainability activities of the organisation and whether internal or external drivers play a more significant role in driving a deeper integration of sustainability into the organisation. The formal and informal practices of embedding sustainability into organisations could be explored in more detail, with a deeper focus on how technology is enabling this specific area, and how this is effecting the way the organisation grows.

Additionally, an area of future research could look at the shift towards data-centric organisational decision-making and identify if sustainability is becoming a more integrated part of business strategy organically as a result of the ability to quantify all aspects of the organisational activities and operations and see tangible results of these activities.

This could also lead to an exploration of innovation within the organisation as a result of this granular view of the organisation's operational activities. One organisation interviewed as part of this research uses the data generated by the system to constantly evolve their product offering, innovating both the product materials itself and the cost of production through sustainability orientated directives. Exploring more fully how businesses are innovating their core operations to become more sustainable and the reasons why businesses are undertaking these activities, has the potential to provide rich insights into the catalysts for sustainable change and build a case for sustainable innovation strategies within organisations.

Practically, this has implications for both managers and third-party providers. Within organisations, managers and individuals in charge of sustainability now have the ability to legitimise their roles and drive sustainability objectives by demonstrating, through technology platforms and quantified data, how sustainability meaningfully contributes to the business from an efficiency, reputational, cost perspective etc. These platforms have the potential to enable managers and individuals to have a granular view of the material sustainability objectives of the business and report on these objectives in the same way that other key goals and objectives for the organisation are tracked and measured. Ultimately, through quantifying sustainability indicators and demonstrating the value that the tracking of such indicators can bring to the business, managers and key leaders in the business, like the individuals interviewed for this research, have the ability to embed these objectives into the core strategic objectives of the business.

For third-party providers, such as those that develop sustainability tracking systems and work with organisations to refine their business strategies around sustainability objectives, the current business discourse provides numerous opportunities for such providers to generate new business. By utilising the various practical examples and research that are being generated, these providers can take advantage of this emergent trend of businesses seeking to demonstrate the value of a sustainable business strategy by way of the use of data platforms to show the quantifiable benefit that incorporating sustainability goals has on the business. As businesses continue to seek out new tools and technologies to automate, track and measure sustainability data, the need for third-party providers becomes increasingly important and relevant.

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## 6. Appendix

### APPENDIX A: INTERVIEW PROTOCOL

*The below questions were used as a guide for the semi-structured interviews*

#### **General Organisational Questions:**

- How important is data to your organisational strategic decision making?
- How are you currently utilizing dashboards, or data visualisation systems within the organization?

#### **Context: (Why)**

- What drove you to use dashboards (or other information systems) as a way of tracking your sustainable impact?
- Are there any factors external to the organisation that contributed towards tracking sustainability metrics and visualizing this data?
- Is there anything internal to the organisation that allowed for, or contributed to the tracking of sustainability data?

#### **Process: (How and what) \***

- How did you go about creating these dashboards?
- What are your KPI's and how did you define these targets?

#### **So What? Impact of the above:**

- How is this data effecting organisational strategic decision making?
- Has this effected any internal policies? (are there documents that support this?)
- Is the culture of the organisation affected in anyway by this data and its outcomes?
- How is achieving these targets encouraged? Is this having an effect on performance management

### APPENDIX B: TRANSCRIPTS OF THE INTERVIEWS

FINANCIAL SERVICES:

TRANSCRIPT FS1:

Interview took place at Company Office 02/10/15

INTERVIEWER: We're looking at some of the drivers to quantifying sustainability

INTERVIEWEE: The GRI requirements is like the bare minimum. It doesn't get to the quality of what you are doing as a business and doesn't give a clear picture of the culture of the organisation, which is always a problem with indexes.

INTERVIEWER: Can you tell me a little more about your role?

INTERVIEWEE: Our unit is called Policy, Advocacy and Sustainability so its integrating the areas of sustainability into strategic issues that are important to the bank. Any kind of risks that are important that are not the traditional risks, not so much about credit risks, or capital markets risk. These are more the non traditional risks, are more about policies in the countries in which we operate, the stakeholders you engage with and the broader sustainability issues, such as environmental social and human rights and social political risks. Those are some of the kinds of things we look. It has a huge ethical component and a huge human rights component to it, and then any strategic issues that are important to the country because as an organisation that's quite large in the country anything that affects the country is going to impact the organisation quite substantially and effect our sustainability. So we take the role corporate governance quite seriously and the role of a corporate citizen very seriously in that you have rights and responsibilities and one of your responsibilities is that you have to constantly engage. So that's the model we kind of use.

INTERVIEWER: How important is data in general in your work within the bank? How important in understanding performance within a quantitative frame?

INTERVIEWEE: Its actually one of the areas where FS1 has done really well in, in terms of the data that is available and the way that it is collected and reported on. Our sustainability report has got all of the data in it and we collate it and its huge and all the rest of it. We have very interestingly now gone through some exercises and that is the bare minimum. The way you integrate it into the behaviour and the culture of the organisation is really the step to take. As an organisation that deals with data and with numbers all the time its fine, its done and dusted. Now its about what you do with that data, what is the culture of the people who are

making those decisions and how do they use that data to actually make those decisions at a strategic level.

So its about, um we use a lot, well the data we report on is the SRI, it's the GRI, its our own internal models that we use, its like basic efficiency data but then as well its about transformation issues, so it goes across the board and we have these enormous data bases but the point is that's all well and good but if people see that as a mere dashboard that you report on and then forget about for the rest of the year where's your value? So now it is about integrating that into your decision making. So if you have a new project coming up, how do you use that data to influence your decision making, have you used that data and the information that we collect to develop a product that is relevant to the needs of what that data has shown you, be that the particular needs of a community, or the particular needs of individuals, is there a market segment that has particular requirements that a lot of the sustainability issues tap into? That's what we're grappling with at the moment right now and there's a huge change program in place in terms of sustainability that is about what do you see as a risk for the organisation. We see sustainability as a risk and an opportunity, so what are the risks we've identified, what is material, lets drill down into those and see how it then becomes part of how people then make decisions within the organisation.

INTERVIEWER: when did you start rolling this out?

INTERVIEWEE: we've only started this year, doing revisions so its more like a change in strategy, not like a complete change but more like a tweak.

INTERVIEWER: is your team responsible for activities across Africa or just locally within South Africa?

INTERVIEWEE: It is group wide so across the whole of Africa where we have operations. It's a challenge because countries are at different levels in terms of their sustainability so what we do do, the model that we take is, obviously the south African one, because our south African operations are the most entrenched and the oldest, so those are the ones we're more familiar with but in other countries we tend to then, as a group we offer support, guidance and some strategic focus as to where you should be going but then the country is given the responsibility for how they implement. Bu they do need to report back on the kinds of operations that they have in place and there's like basic things, principles and policies that they need to follow, like the equator principles that are group wide and are non negotiable. But in terms of how they

would put in place specific projects, or how they would include it into their business operations, that is something that is more context specific.

INTERVIEWER: Speaking of context, what was kind of the driver for creating information systems that can quantify sustainability metrics? Internally and externally.

INTERVIEWEE: well there was almost 2 reasons to have it, first of all was the sustainability from a basic efficiency need so sustainable decisions in terms of your basics for example your water usage and energy consumptions, things more on the operational side. You had to have the data to demonstrate financial savings, and you had to demonstrate, or you have to show that a project works so that's a basic but then there's the side that you have that is related to regulatory requirements, so some areas need to be reported back, so for example all of our transformation targets need to be reported on and need to be in there and need to be regulated but that was also expanded as well into the side that looks at how our businesses operate so its not just about their financial targets so its more about the quality of the work they do and that gets fed back. Because another thing we have is that all of this gets fed into the social and ethics committee, and the social and ethics committee role is about a view of the business, looking at our strategic focus and saying show us how you as business areas are feeding into that strategic focus?

INTERVIEWER: How does that data get presented?

INTERVIEWEE: it tends to be, or rather business tends to use it in different ways so there is the regular collecting of information which is a lot more accessible like water usage and transformation targets and those are easy to collect and collate because its your basic management data. The ones that are less easy to collect are the ones that are more to do with human rights issues, and to do with country context, social economic ones and those are collected at a different level. And we need to actually think about what indicators you use to have perspective. These then go into the annual report. And the other ones are collected and presented in basic excel spreadsheets, things we develop that work for the specific committee.

INTERVIEWER: And these indicators you set for yourself?

INTERVIEWEE: they're very dynamic and we're always working on them, we constantly revise.

INTERVIEWER: Do you have targets or benchmarks that you are working towards?

INTERVIEWEE: It's more about the usefulness, so what drives it is how useful it is for the decision making. There has to be a business imperative, we have to know how it feeds into the business. If nobody reads it then what is the point? If nobody uses it then so what? Does that say something about the person who is looking at the data or does it say something about the person who is presenting the data or lets rather say business unit not person but if that information is useful then people will use it but if not then it says something about the information you are collecting and how you are getting the message across.

INTERVIEWER: how frequently do you refer to this data, is it real time or reported at specific points in the year?

INTERVIEWEE: its quite difficult to do it real time because the organization is so large, and not a lot of things are automated in this sector, so some of it you can get bits and pieces but even if you have to take something quite specific like electricity usage, you'd have to collect it from all the branches that we've got, some send back some don't and some don't understand the levels that you are requiring and we're asking quite a lot from people who's training and background is quite different from these issues. Its quite a big ask and there's quite a bit from a training side to do it to to get people to understand why we require this information from them. So as much as it could be real time and we could use dashboards to plug in the quality is not going to be that great. Its quite people intensive at the moment and about sending out requests for people to send back information at the moment which is quite people intensive.

INTERVIEWER: do you think it relates to the culture of the organisation?

INTERVIEWEE: I think the culture is data centric but in relation to the financial data, so people understand it, its nice its numbers etc., and you can see which levers to push. This is harder to see which levers to push and also, a lot of the issues we are dealing with, especially with things like economic climates, those are much longer term and our view is 2-5 years down the line for short term goals and way longer for medium to long term. And to try get a business that is quite short term based in their views to look in that longer term is quite hard. Per project it is easier to look at short term measurable target, for example rolling out a recycling project, that's really easy because then at a project management level you can have a dashboard but then at a strategic level to have something about being a good corporate citizen, or having a human rights policy, or operationalize a human rights policy that is something that you can't really operationalize as red amber green. Because you can put a policy in place but then what about behaviour and culture that goes with it? And that is the area that companies fall down.

In my very jaded view is the fact that large, and even small organisations, can say I have a policy on X and Y and therefore we are sustainable but that is rubbish. An organisation like this, I cannot begin to tell you how many hundreds of policies we have in place but its about the behaviour and the thinking that each of our employees have and that's much more important.

INTERVIEWER: in terms of embedding this into the culture, is this part of the strategic change 'tweak'?

INTERVIEWEE: that is something that has always been implicit in what we do but it is a lot longer term and we need to be a lot more innovative in how it gets done. So it comes from the term, it comes from how the strategy gets positioned to the rest of the organisation and the strategy is positioned that we are a citizen that is, or um that we are directed at the development of each country that we are in. so we are there to be a leading financial service provider and to be a member of that community and its kind of embedded in that and we hang it on the fact that if you are going to be a member of a community you're not separate from them and everything that you do that is going to benefit the business comes from how you benefit the community.

INTERVIEWER: do you think that this is implicit throughout the organisation, for example in relation to branch staff targets and how that relates to sustainable financial behaviour?

INTERVIEWEE: That is a human side that I'm speaking of, what it comes through in and this is our constant challenge. Currently we have people who are driven by their targets and its very difficult to change behaviour when those targets are financially driven, and that is something we are grappling with which is reconciling our sustainability positioning with our branch level operations and ensuring that our strategy is permeating. If you go ask somebody in terms of the branches how they feel about their role in terms of the sustainability of the bank they wouldn't be able to give you a narrative on that, but they would be able to speak about responsibility and the fact that they have to be a lot more responsible about what they do. Its very much a case of it can be quantified at an individual level it would drive your performance in that area but how would you be able to quantify some of the broader sustainability issues for somebody at a branch level, because for them its very much about their daily lives, and the loans they provide and the quality of those loans. So they see that in terms of performance and the levels up would see that in terms of the quality and the checking in terms of what comes back and how many loans are declined.

INTERVIEWER: How are organisational performance targets set within the group and does that relate back to any sustainability KPI's? is there anything that is formalizing the so what within this business?

INTERVIEWEE: it is totally dependent on the business area, and completely depends on the area, with some more than others, so for example with enterprise development which is specifically targeted at a particular type of enterprise which is more innovative and more transformative they will have that in their KPI's but its not across the organisation and it is not something which has been said from the top. So it really is business unit specific. And at an EXCO level their performance bonus is linked holistically to the quality of the business they are building as well as they financial performance but in order for them to be deemed successful they need to show at the end of the day that everything that they do feeds in to final performance and revenue generation. So if you can hang your hat on that, if it just sounds interesting to you then it doesn't make business sense it won't work. You have to show that everything you're doing is in the long term benefit of the business and that would then feed into your KRIs.

INTERVIEWER: So you're collating data constantly, how do you share these insights with the broader organisation?

INTERVIEWEE: So ultimately everything is collected and published in our sustainability report at a very high level, and each of those areas in the report have particular reporting requirements to EXCO's and to risk committees, where they give that data, to particular project project owners when frequently an exercise is project driven. The report is shared across the business and is available on the website and we are looking at revamping it for next year because its become quite long, because there is such a lot of information that is in there and with some of it its debatable about whether it fits into sustainability or not. The way the organisation sees it is anything that is about risks. Anything that is a material risk to the sustainability of the organisation falls into this, for example cyber security, anything to do with economic climate, trust between government and business, so sustainability of the organisation is a strategy. Which also makes it hard to operationalize because it is difficult to define it. So if you speak to one of the guys in business they're not really sure how to respond to you but if you ask them about cyber security issues then they understand that a lot better, so its about speaking the language people understand and then at a strategic level its then about knowing that it actually falls into sustainability. We need to be able to translate that into business talk.

INTERVIEWER: Do you think the work you doing is impacting the culture of the organisation?

INTERVIEWEE: you know you win some you lose some, FS1 employs 45000 people so um, what we are seeing, is that our regulators are requiring a change of culture across the sector. They're demanding that we have a culture of putting your customer front and centre which to us is also placing your community and the country in which you work front and centre. Its about making sure everything you need is relevant to the customer and about making sure that everything you do has integrity and ethics. Because the financial crisis demonstrated that the financial sector is not trusted at all. With so many people and requiring such a huge culture change is a massive undertaking, so the only way we can do it really is through smaller projects throughout the organisation, its more about what comes from the top, from leadership and from the ways that things are done. So one of the mantras for the business for the last couple of years has been right business in the right way and that's really coming through and being filtered down through the business but its taken a number of years to do that. And a cultural change of understanding sustainability relative to efficiency needs to be embedded still so that its not just about the recycling bins but about the way in which we do business.

INTERVIEWER: are you able to track this organisational shift?

INTERVIEWEE: it becomes really difficult, and a lot of it is really qualitative but it needs to be about looking at the multiple indicators of the things that are important to us and seeing how we're improving year on year but currently that is proving to be one of our biggest challenges.

INTERVIEWER: how often do you do benchmarking exercise?

INTERVIEWEE: Annually for the sustainability report. The report drives much of the quantitative measurements. We pretty much have 2 people who collect that information, this is a small team. The data is collected from various areas across the bank, and they are responsible for getting in touch with the relevant people and collating that data.

INTERVIEWER: Have they built any tools to support them?

INTERVIEWEE: they've built their own tools. Spreadsheets that they use for specific areas. They looked at various tools on the market but they don't capture as much as what we needed. So there's a gap. Its been a difficult process and trial and error and looking at what's available and what we've found is that its just easier to build things in house because its quite dynamic

and from one year to the next your indicators change. So you need something as a basis in place.

You know a sustainability report is not required but it's a way we conceptualize the business and the goal is to make this data more integrated as well. It mustn't be seen as flavour of the month, because a lot of the ways people have been reporting on sustainability is really just a marketing exercise, so it has to be something that is integrated into your decision making, because if not then what is the point?

INTERVIEWER: do you have example of how this data has been integrated into decision making?

INTERVIEWEE: as part of our advocacy, we do it internally and externally and that's about raising awareness of various opportunities and its about creating linkages between different business areas and different organisations externally and its about looking for opportunities for the bank to participate in. so one could be large projects to do with community development and one could be to do with a large green energy project or low cost housing so its creating linkages between clients so we've got all these diverse clients and its about bringing them altogether and then you have a huge project. And we'll do that in conjunction with government.

INTERVIEWER: does the act of gathering data unlock these opportunities?

INTERVIEWEE: Ya so it unlocks a conversation. Its that speaking about the data creates conversations where opportunities happen. And then as a team, the sustainability team we pick specific goals or a focus for the year and we say, this year is going to be about inclusive financial projects and then we'll create particular work streams to deal with those areas. And one of the things is then facilitating the connection between them.

INTERVIEWER: do you get incentivized to achieve these goals you set for yourself, not necessarily financial incentives but awards or anything else?

INTERVIEWEE: nope its part of our job description. In each persons KRI's you also have your values, which are your individual interpretation of the organisations values and if you don't achieve on these then it affects how you are performing on your overall KRI's.

INTERVIEWER: How else can you track that values are being lived?

INTERVIEWEE: Through external stakeholders, looking at the feedback we get externally from our market, customers, our regulators and government etc. This is interview based and we go out and ask these external stakeholders.

So its really a case, I mean one our indicators, I mean there is a serious lack of trust within the country of the financial sector. We're seen as big business and so one of the things we track is how often government approaches us? And we also have a model of engagement to make sure that that trust is maintained.

INTERVIEWER: do you have a way of measuring this?

INTERVIEWEE: We have a whole oversight committee that looks at this but not quantitatively.

INTERVIEWER: within your team to expedite some of the reporting that you are doing, or to automate it do you have anything you've developed to help with this?

INTERVIEWEE: it is very qualitative, so what we will take to a MANCO or EXCO meeting is not a dashboard it is trends, so for group they will see an issue and we then flag it, but they'll get high level and business needs to take ownership and drill down. I think there are easily quantifiable metrics that align more with business efficiency but with big strategic issues about where the bank is moving and what decisions to you need to make it is very qualitative and not easy to track relative to KPI's.

*Transcript FS2:*

Interview took place at Company Office 30/09/15

Interview with: Head of People and Change and Head of Sustainability Strategy

INTERVIEWER: In general how important is data to strategic decision making within FS2

INTERVIEWEE A: Do you want to guess? We're a business of actuaries so on a scale of 1-5 like a 7, its very important. Critical I suppose given what we define as our shared value strategy. If you can't demonstrate what you say you do as a business with data that backs it up it is just words.

INTERVIEWER: Do you currently use dashboards or other data visualization tools in general

INTERVIEWEE A and B: laughter

INTERVIEWEE B: I know we've done tremendously well over the last decade in kind of strengthening and developing, especially from an executive positioning but we've now started doing is passing these processes into the more operational environments, so especially where there is collective participation and stakeholder engagement within we use dashboards, we're just finding that with the amount of data we have, and with the verification processes we have as well are quite stringent so we have a very robust, I'd say, internal audit team who keep us on our toes, but that is also I think true to any organisation in terms of even the volume of data you provide must be verified. So we try interlink whatever we do with a dashboard in terms of strengthening processes and efficiencies but also in terms of allowing it to define a clear process for verification.

INTERVIEWER: You have volumes of data relating to your sustainability initiatives that date back over the past few years, what drove the business to start tracking/ or quantifying its impact on society and the environment? Was this internally or externally driven?

INTERVIEWEE A: I think its both, because there was an internal thing that said that whatever we claim we've been doing we need to be able to quantify it and measure it and then report on it?

I think the first sustainability report we ever did, I think it was 2011, it was a story rather than a data driven document. But more and more we've shifted towards a view of how we demonstrate our story. The first point was internal- how do we know we're making people healthier? How do we know all the things that we claim to be doing? But also externally, the

publishing of the Michael Porter Case put us in the spotlight and so when you do make these assertions people want to know how you know that that you're having the kind of impact that you claim. Like I say though it is both internally and externally, like the GRI specifies, you know, the kind of data you need to be reporting. So it was all those things coming together.

INTERVIEWER: Do you think the culture of the organization contributed to this?

INTERVIEWEE A: Even long before all of these external things our CEO wanted to know how are we doing at the things we claim to be doing, so as I was saying it was both internal, with our actuarial, data driven culture and leader.

INTERVIEWER: In terms of the 5 key areas or commitments you have to being a sustainable organisation, what are the systems you have to track whether you're achieving these commitments what is the story behind these systems? Has any innovation stemmed from the act of quantifying your impact?

INTERVIEWEE A: To call it a system is a very very big word.

INTERVIEWEE B: the previous question, I'm actually going to say, it's a very big question and I think it's a big word, System. Rather we have a very organic way for how we engage which stems from our culture, and our actuarial base, and being able to deliver towards that, because that's our shared value. That's how we leverage our shared value business model. But I think the question that you're asking, I think we are slowly evolving as well in all the different measurements we are setting up. An example to what you're saying is that in our upcoming report you'll find that we are starting to define our shared value metrics. We're driving that through, were starting with one business unit at the moment and that is FS2 Life.

But it is a very organic process because of the amount of actuaries making strategic decisions within the business.

INTERVIEWER: regarding these organic ways of measuring your sustainability, what role do these dashboards play?

INTERVIEWEE B: I think the questions being asked are totally spot on but I think that we're such a unique business, we're so um, I say to everybody, until a year ago, before I came to FS2, I thought there was a place where all businesses kind of met and were similar and responded the same way. FS2 however is quite unique in that sense, I think number one because of our entrepreneurial roots, number 2 is the volumes of data that we are able to push out but also I

think it has a lot to do with the fact that we have a shared value model so its intrinsic to what we do. But its very unique to us, its not something that we could say is replicable so I'm not sure if it feels like were not getting to the exact response to you question but it is very much because of how unique we are as a business. Its organic, and its totally based on our strategy.

INTERVIEWEE A: Because we did sit in a room with the all the different business unit, and like I said the impetus recently has been the porter case study, so getting everyone in a room saying how will we know that we are really having an impact is a conversation we have been having a lot. So with business unit x, what are the measures, and from a y unit perspective how do we measure it, and then how do we distil this into just a few core metrics because we could go on for ever and ever. So that was the first part, conversations from a business wide level around how we demonstrate that we're achieving what we say we are and what data do we need to quantitatively demonstrate this?

INTERVIEWER: With the measuring, are individuals responsible for gathering and inputting data or is it reliant on an automated, integrated system of sorts?

INTERVIEWEE A: No we don't have a central system if that's what you are asking but each business has to know what is happening within the business. For us, our key areas of sustainability are also our key business drivers so there isn't like a separate system to track these, rather every month the business targets are the sustainability targets. And the spreadsheet that shows performance of each business unit relative to the targets is in fact demonstrating the achievement of these goals.

INTERVIEWEE B: its totally part of their business, so if x says they are making people healthier they have to be doing that, its part of their groups KPI's and with y and z they have to demonstrate how they are exceeding industry averages in terms of profitability margins because of lower lapse rates and all the things the claim to be doing.

INTERVIEWEE A: So I think from a sustainability perspective there isn't anything separate you need to tell them to do to capture how on target they are with reaching their sustainability or shared value metrics because it is their core business.

Its not like a flavour of the month where we have a separate system that people have to input their data into to see if they are meeting some targets set out by EXCO that they have no relationship with. Which is why when we looked, or at least when I looked, at other banks sustainable development model, long before we began this journey ourselves, to me it felt that

it lacked substance, and so in that kind of environment you need to have a separate system because it is less intrinsically linked to the business.

INTERVIEWER: Who sets your targets, how do you define what you are trying to achieve to ensure the sustainability of your business?

INTERVIEWEE A: They're driven from an EXCO perspective and it is determined by the business units' target.

INTERVIEWEE B: So it comes back to a previous point, everything comes back to our business model, it is intrinsic to our model. If it is outside, then it won't fly and it won't be integrated into how we work. Simply because for our business units to take ownership, because that's what we're looking for, they have to feel that it's not just another reporting framework, it's not just another system, not something that the employees think they have to do because "they say it will make us a better corporate". We want everyone to feel absolute ownership, and it's right through even the staff and our processes. But so what's going forward, we'll probably just refine those processes even better rather than trying to create a new system. But the reason I am saying this is that we have, or rather our core purpose is how we can enhance and protect people's lives. And we are now encouraging businesses to start looking at how they can start reporting better on their workforces and start investing in their workforces. But equally that has to translate into their communities. So for example when you look at larger workforces and how they pull their workforces from out of the community, because this is not just about FS2, how do we build a healthy society, so that's what's next. Not to become more sustainable internally as an organisation, but to encourage a healthier external society. That's kind of the thought leadership we are trying to carry forward. Which everybody is talking about, but everyone is asking how do you aggregate this, how do you put this together, and how do you benchmark against your current activities.

There's a term we've been using which is called the 4th bottom line but there's been conversations that this just means adding another reporting system, but how we see it is strengthening our existing pillars, we loosely term it that within FS2 integrating it into the people pillar of what we're already doing and integrating it into the governance pillar in terms of the environment social and other frameworks that already exist.

So our integrated report that is coming will flesh this out a bit further but that's our future, forward plans.

INTERVIEWER: How frequently do you check in on your targets, and if when you do you see you're not performing as is required does this drive innovation processes? How frequently do you review the targets you've set a business unit?

INTERVIEWEE A: Its all the time. So its not separate from business, they check it monthly and they have internal team dashboards that reflect how they're performing relative to their business requirements, its part of financials and growth per month, its what they do to see how engaged the customers are and how they are shifting the middle around how much better driving is becoming in general based on their growth. Same as business unit x, engagement is very much around how healthy are we making people, which is very much linked to the businesses ability to make profit. So they check it the same way they check all their other metrics that they use to check business health. That's why I say we're very lucky as a business because we didn't have to set up a parallel process to check business health, rather everything that is an indication of the health of the business is an indication of sustainability.

INTERVIEWER: are their any incentives that drive sustainability innovation within the business?

INTERVIEWEE B: They are just business innovations in our business.

INTERVIEWEE A: but we do have a lot of innovation initiatives within the business, we don't link performance bonuses to that specifically however it is implicit because of our business model.

INTERVIEWER: how frequently do you refer to your dashboards on the 5 key areas of your sustainability strategy?

INTERVIEWEE B: we have a number of dashboards, but the critical ones are the ones we present to our board committees and those are reviewed on a quarterly basis and um, and that's a standard process so business knows they have to report on that, so its not automated. Its individual business unit's dashboards based on inputs which are the responsibility of the EXCO member, who is usually the business unit head or CEO and then that is collated on his behalf by various individuals within the business but ultimately the ownership and responsibility sits at the business unit head who then sits on the EXCO, which is where Interviewee: A also sits.

INTERVIEWER: Generally speaking, do you find that inputting data daily into the dashboards in any way encourages a behaviour change within the organisations and the daily, or CG1 decisions?

INTERVIEWEE A: Yes, absolutely, but this is at a business level again, so I know I sit on business unit y's EXCO and they look every day so today they were looking at engagement and that is an indication of how healthy we are making people so today they were looking at the various measures of engagement and discussing the levers to pull to impact the one area where engagement was tracking below target. They look at it all the time but in health its monthly. It depends on the unit, for some it is very quick so they measure daily or weekly but others it may take longer to get an accurate understanding so they check monthly and some are every quarter but it just varies and depends on what it is that your measuring and how fast does it move. But again these metrics are based on the business strategy and are drivers of the unit's success within the group. Then they make different decisions based on those measurements.

INTERVIEWEE B: so its interesting that we're discussing this now because it is what we are introducing or starting to look at with various projects that we are doing that are linked to our overall business engagement but have a sustainability turn to it so, when you look at projects like city of Joburg, we have a project which is a partnership which included how were' engaging on ecomobility we have working groups which we have created and what we've created per groups is dashboards which per project is very effective in driving short term behaviour, because its amazing how when you see that red it helps to shift those dials to make sure that there is a deliverable. So there's that which we've looked at and its evolving but its very specific to smaller groups and smaller projects.

INTERVIEWER: does that get plugged into any broader frameworks?

INTERVIEWEE B: Nope, what we're trying to do is not to come in with a big stick to drive people but rather just to make sure that we're able to drive a process that when we are delivering, especially at the end of the year when we have to pull together KPI's, you know our KPI data from a sustainability point of view, then it helps us tie it together because we've already quantified.

MANUFACTURING:

*Transcript M1*

Interview to place at company offices 28/09/15

INTERVIEWER: What is the size of the company approximately?

INTERVIEWEE: Approx. a billion Rand turnover a year, listed on the Johannesburg Stock exchange. We operate through 4 business units with recycling being our biggest part. We probably recycle about 45% of the country's paper requirements. There's a lot of recycling that feeds our paper division- we take waste paper and convert it into paper, and the third business is corrugates business, where we make corrugated cardboard boxes. We're probably the largest manufacturer of corrugated cardboard. The 4<sup>th</sup> business unit is plastics which I am accountable for.

INTERVIEWER: employee size within the plastics division

INTERVIEWEE: about 1400 and the group employees about 4000 people

INTERVIEWER: Geographically you're located where?

INTERVIEWEE: were extending into SSA, part of our strategy going forward, we have 7 sites for plastics around the country with one based in Zimbabwe.

INTERVIEWER: broadly, how important is Data to your strategic decision making process?

INTERVIEWEE: ok so obviously data is incredibly important, for example market information, needless to say we can't readily access market data so there is a lot of intelligence gathering from our salespeople and we use that information to decide whether or not we're going into the right markets, or are there any new markets that we should be interested in. The same or similar data obviously entails competitive information, so we try to establish where our strengths and weaknesses are in relation to our competitors. But to answer your question in relation to our hard-core data, and I'm speaking specifically in relation to plastics we would call on another resource to sell market data to us, for example a BMI report.

INTERVIEWER: and in relation to the data around actual activities, performance, sales, tonnage converted etc. how does that typically get presented to you.

INTERVIEWEE: we have a relatively sophisticated system, so everything is in a fully integrated model from the time we receive raw materials to the dispatching of our finished goods, whether it is tonnage converted, obviously the different types of input materials or tonnage sold to various customers or the units sold for a specific product, we would be able to compare that quite frankly every which way.

We would be able to say year on year month on month how we are performing with specific customers, and be able to aggregate that to industry information. For example, with the carbonated soft drink industry, we would be able to tell a specific customer, such as ABI, how we performed with them, then we were to collectively look at all our customers within the CSD space wed be able to pull those comparisons and get a feel not just per customer but for the industry.

Needless to say from a data perspective you want to be close enough to information that would have a direct impact on your day to day business. I always say you're not in the business you think you're in, you're in all the businesses that have a direct impact on your business. So that's the type of thing we track.

INTERVIEWER: How frequently do you refer to these data sets that you have available? How is the important data shared with you? Do you have access to a dashboard?

INTERVIEWEE: we do have access to a dashboard, and all our information is real time. The information is put into the system as we generate it. We can track on a daily basis our production figures, our sales figures by customer by product every which way you think we track that on a daily basis. But in terms of aggregating that data for further discussion we do so on a monthly basis. Each month our management packs include specific information depending on the focus, whether its production, sales or whatever the case may be. But we have core set of information that we use for discussion purposed on a monthly basis.

INTERVIEWER: How much of the data that you're tracking on a daily basis relates to your impact on the environment, and other social factors?

INTERVIEWEE: OK there is a core set of basic information that we interrogate on a monthly basis specific to my part of the business, for example, our electricity consumption, waste to landfill, recyclable, water consumption in relation to what we produce and stuff like that. In addition to that, and this has been done by the group for a few years, we have group steering committees and all the managing directors of the business on these group steering committees.

We have, I don't know exactly what his title is, a group manager on matters relating to health safety the environment and so forth, and he is accountable to all the businesses and we meet quarterly at least where that information is evaluated, discussed, debated etc. So in terms of carbon emissions, we understand that, we know exactly what our footprint is in certain parts of the business that are important obviously from a sustainability perspectives and we track ourselves to establish how well we are performing and how not so well we're performing.

INTERVIEWER: How do you create these sustainability benchmarks or targets?

INTERVIEWEE: That is difficult obviously as you probably know and I wouldn't say to you we are perfect. you know with new things like carbon emissions you know we keep learning and keep adding to the range of information that's collected. Sometimes we stand back and say "hang on, but gee whiz this is increasing or decreasing and then we find its just better gathering of information, things that may have been omitted previously or the system has been refined, you know that type of thing.

INTERVIEWER: And this system that you use to track these metrics, is this part of your integrated system

INTERVIEWEE: We have a second, and I forget the name of the package we use, but its internally developed. So its part of the normal dashboard. You know we have a centre of excellence for these issues. Our centres of excellence are really responsible for driving much of the innovation and strategic change initiatives. they have access to the data and drive much of the data sourcing and decide on the required resources for achieving their unique objectives, for example the tools that need to be developed and the KPI's, roles and responsibilities that need to be assigned. So we would have an environmental centre of excellence where key managers across the group would sit periodically and review what they are currently doing and what they believe needs to be added and what needs to be refined and so forth and from those results, a number of actions in terms of reducing the footprint, how do we go about doing that. Let's take electricity which is a major issue for the country as a whole. So we committed obviously to reducing the consumption by ton converted and then we'd look at all the factors that we need to consider in that process and see what we'd need from an internal and external perspective in order to achieve these.

INTERVIEWER: Has the act of looking at these metrics created opportunities for innovation as a business?

INTERVIEWEE: absolutely, let me give you an example you know, as part of technology advances in our field, as technology has advanced we find ourselves um, having to deal with new and different things, ok so because electricity has become as expensive as it has and obviously the input raw materials are becoming increasingly expensive what you find is that light weighting of the product has become extremely important, developing reusable products as well um the use of recycled materials has become extremely important and of course the cycle time that is required for the manufacture of an article, so what has that led to? We obviously continually look to improvements in our technology, so as we spend money for new investments we make sure that it is the very best available at the time and like computers or cell phones, these things regrettably change ever so often but whenever a big investment decision is taken we would look at the factors that I've just described to ensure that we are investing in the very best.

So M1 is quite good like this, even when we look across our businesses at the type of investments we have made, you; find that it has in many respects, reduced our carbon footprint, we've become more energy efficient, the products are and we produce them faster and so forth.

INTERVIEWEE: So we saw an opportunity in the market to make the right kind of investment, um, in the recycling of PET which is part of our strategic intent to grow that business further, jointly, as a fully integrated model. So we have company X which produces a recycled PET which goes into the manufactures of our own preforms jars etc. like I said earlier, so in making that call for the investment, you know people often ask us why we decided it was the right thing to do.

Needless to say with the environmental focus, governments across the world, as you know are focussing big time on these matters, an opportunity was identified to make this investment, and we've invested 350 million Rands into this investment. We will take out of the market probably 29 thousand tons of scrap, waste material, like your used coke bottles or water bottles and we will recycle that to produce about 21 thousand tons of reusable material which otherwise probably would have found its way into landfills.

You know from a sustainability stand point it is a huge step in the right direction. Hence e you find the likes of the IDC having supported the initiative

INTERVIEWER: just to get back to the questions because its easy to deviate with the interesting work you're doing. Because I'm looking quite specifically at data and dashboards and quantifying sustainability what are some of the external drivers of the choices you have take with regard to how you track your impact, for example GIIR, has this been the case or has there been anything else that has led you to this?

INTERVIEWEE: Um from a number of perspectives compliance has obviously driven certain areas of the information gathering. Whether it is compliance, or the JSE rules or integrated reporting or for that matter what government requires as well, but from a sustainability perspective and shall I say future growth endeavours there have been information that is associated with our marketing drive. So needless to say we've been watching the global platform on the recycling of PET bottles and the pressures. So you have 2 perspectives. One is the selfish perspective, and a reputational thing, and the other is what fits in from a compliance perspective. Some of it actually drives your marketing initiatives.

INTERVIEWER: and internally?

INTERVIEWEE: new business initiatives, definitely and staff

INTERVIEWER: Do you think they feel better when they see your improvements?

INTERVIEWEE: we have internal newsletters where we keep staff informed with whatever developments are taking place within the group and these include how we're succeeding in our sustainability initiatives

INTERVIEWER: and the data that is reflected on your online integrated reports?

INTERVIEWEE: I'd say we're proud of that data, ok we want to ensure that at all times we are ahead of the pack, whether that's peers competitors whatever the case may be. We are also big on customer centricity, we therefore like to ensure that what we are working on appeals to our customers who have in many respects, similar ambitions. We also like to know that what we are doing ultimately adds value to our customers. So we're not going to report for the sake of reporting. There must be some value to be had. Ok there must be a real belief in what we're trying to accomplish. So we do really care about the environment, we do really care about sustainability and we believe all of those rolled up into one ultimately leads to a better business case shall I say, hence recycling, hence going for certain technologies that are streaks ahead of the opposition. You know its all those factors

INTERVIEWER: can you tell me a little about the process to develop a system that could track everything including these sustainability metrics?

INTERVIEWEE: Unfortunately, I have to be honest with you, I don't know all the detail, I've only been with the group since 2013 and when I arrived a lot of that was in place, so the group has been doing this for a while now, and like I said earlier it was a model designed on the platform we had available and was able to read the other systems we had within the group.

INTERVIEWER: and it's all developed internally?

INTERVIEWEE: I think it has been, we have an incredibly sophisticated IT department who are constantly building and refining systems.

INTERVIEWER: has the data you've received around sustainability impacted any policies?

INTERVIEWEE: I think the data collection stemmed from policy decisions, so for instance you know, our commitment to aspects of the environment has actually led us to collect relevant data in support of clear guidelines about what we'd like to accomplish. So if its reduction of electricity consumption per ton converted, as a metric we started collecting it some years ago based on a desire to reduce our consumption. So strategy dictated the choices.

INTERVIEWER: and performance management metrics in place that relate to sustainability KPI's?

INTERVIEWEE: as an aside and as part of a separate and different system, you know we have performance management systems in place for all staff.

INTERVIEWER: ya

INTERVIEWEE: and what you will find is that specific objectives will be agreed with certain people that directly impact in this case with sustainability issues. So as an example we would have an engineer agree with the business that a task for the year is the reduction of whatever, be it recyclables to landfill or minimisation of oil consumption or whatever and that becomes a very specific objective for the individual concerned and that individual will be managed accordingly and we have an incentive scheme around that type of thing.

INTERVIEWER: are these formal incentives? I mean do sustainability targets make up a percentage of their performance bonus?

INTERVIEWEE: I wouldn't say to you that we have allocated a percentage, we haven't done that. But given our overall ambitions um not just from a sustainability perspective when it comes to hard-core consumption or emission issue. But there is a cost element associated to it as well. So you would have KPI's being driven from more than one perspective but it needs to be a real cost reduction initiative but at the same time it goes hand in glove with your sustainability measures. So you know that's how it gets measured and managed.

INTERVIEWER: how much of the rationalisation behind large organisational investments is reliant on data linking to short term gain and how much is based on a longer term sustainable growth?

INTERVIEWEE: we have major projects and all the decisions we have taken relating to investments are with a long term view in mind. Given that sustainability is a core component of our current business model and future growth, its all about gearing us for the future, however we are a listed company and our short term results to get scrutinised each half year and so forth so its balancing the two but we don't have a short term view of the business, only a long term view. But we manage the short term performance obviously.

INTERVIEWER: have the activities you've done around sustainability, has that impacted the culture of the organisation at all?

INTERVIEWEE: I think it has you know, you know we are very aware of the need to A: comply and B: to use this for our strategic competitive advantage because we believe that with, should I say our infrastructure that there is more to accomplish than our competitors. So we use that obviously as part of our strategies and needless to say that since it is incorporated into our incentive schemes and performance management criteria etc., it has inculcated a specific culture, I can't tell you what was there 3 or 4 years ago but what I can tell you is that its dealt with with the required level of enthusiasm. We don't just pay lip service is what I'm saying. We really believe in what were doing and it goes hand in glove with the business model. Ok so when we look critically at consumption of water I can tell you it would be handled with the required level of passion and I think also, the change in the south African climate has also impacted behaviour in general, like you and I treat electricity a little differently at home than we used to many years ago, when it was cheap and in abundance and so forth. So there is the overall awareness within the south African climate. There is the global push also that we see from some of our customers that expect their customers to comply with certain norms and

demonstrate certain improvement. So you have push and pull across a wide spectrum that influences our behaviour. But the culture gets entrenched and enhanced as we go along.

INTERVIEWER: how frequently do you communicate quantitatively measured successes internally to the staff?

INTERVIEWEE: like I said, in our newsletter, our GROUP CEO would use the opportunity as deemed appropriate to communicate very specific points, for example our progress on the recycling plant, and we obviously communicate to the market through our integrated report but whatever other opportunities we have to communicate either internally or externally we try take them.

INTERVIEWER: do you use the data gathered from your systems as a driver of this communication?

INTERVIEWEE: we never shoot from the hip, so we back everything from the data

INTERVIEWER: in your monthly meetings how frequently does sustainability targets come up?

INTERVIEWEE: so KPI's specifically there are annual targets and these get reviewed every 6 months to make sure we are on target and to flag if we are not going to achieve these outcomes. The business has certain trackers that all individual KPI'S's aggregate into and we would see those monthly.

INTERVIEWER: in general, as MD of a large organisation, you are exposed to a variety of technologies and tools that are transforming business. Are you finding this useful?

INTERVIEWEE: our dashboards, certain views are visible to a variety of individuals, depending on the level of confidentiality and the access to this information is contributing to their own work streams.

INTERVIEWER: are these KPI'S's contributing to employees desires to perform?

INTERVIEWEE: we have other forms of recognition that drive performance, so we have annual awards and its quite a glamorous affair and people like to get invited to these and be recognised at them. So that too drives enthusiasm to accomplish certain things.

*Transcript M2:*

Interview took place at company offices 19/10/15 with Specialist SHE: Sustainable Development & SHE Data Management

INTERVIEWER: This is qualitative not quantitative, so it's very open ended. But that CG1 question, I find that asking the broad thing at the end is always the most helpful because, we've kind of gotten to that point. But the main thing is about embedding sustainability into strategic decision making. So I'm applying this model, which is a version of Pettigrew's strategic change model. So it looks at context, all the internal and external drivers. So what internal to the organisation, drove you to start looking at your impact in this areas that effect sustainability in a quantified way? What's external?

INTERVIEWEE: So, from a M2 perspective I think ... M2's been reporting on its environmental impact, specifically, from about 1996. So it's been around for quite some time, especially reporting on all of these things. And bearing in mind that M2 is a very environmentally impactful organisation right, that you know, we can't get away from that. We are very carbon intensive, because of Secunda and then Sasolburg. So, recently, I'm sure you've read up on M2, that recently we've had a change in our operating model and a change in how everything is being done.

INTERVIEWEE: From July last year?

INTERVIEWEE: Ja, so from July last year. So the understanding that we are a carbon intensive organisation, and what that impact has on the environment etc. The strategy in the 'buy, make, sell' model was aimed at, not only creating value within a South African context and in a global context, but also minimising negative impact. So that's why you will see that we talk a lot about our gas to liquids facilities and growing in the gas market, etc. So, that is if you wanna put it in the context of sustainability, where strategy is perceived, that would be one of the big drivers in what, or how sustainability of M2, as an organisation, has looked at sustainability. Because let's face it, we can't keep just putting carbon emissions into the atmosphere, it's not 'good for business' model.

INTERVIEWEE: Ja, absolutely.

INTERVIEWEE: So those ... that ... from a sustainability perspective, that would definitely be one of the things that was driving decision making when it comes to, how we actually do

business, what type of business we're going to move forward with.

INTERVIEWEE: Amazing. Okay, great. So can I start with the general questions and we'll kind of drill down. So, in general, how important, from your opinion, is data to kind of organisations' strategic decision making?

INTERVIEWEE: So, being the person that actually manages all of the data that goes into our report, for me it's a very, very important tool, okay. Firstly, because if you don't measure it, you can't fix it. You can't improve something that you don't know what it actually exists. So, to even get to the point of getting data and systems etc., for a company like M2, we first need to understand what is materially important to us. What is ... where do we have significant material impact. So, like, if we look at our sustainable development report, we have about six of them. Right, so, if we look at what is our material impact on the environment. What is our material impact socially? What is our material impact in terms of our employees? What is our material impact in the broader social economic development of the company, of the communities that we operate in, as well as South Africa? Even in international, in the US etc. And then also our CSR work. So from a perspective of understanding what our impacts are firstly, that's when we can now start deciding or agreeing on what are the key performance indicators that we want to look at. What does that tell us? What, for example, if we look at greenhouse gasses. What do we measure in terms of greenhouse gasses, that will give us an understanding of what is our actual footprint, you know? So from an environmental perspective we look at okay, we have a huge greenhouse gas impact. We use a lot of water, so we pull a lot of river water for example, off of the Vaal river system, into our operations. We generate, and we use a lot of electricity, in our operations. So, what impacts do those have, not only on the environment, but for example, if we pulling a lot of water from the Vaal river system, what impact does that have on society, you know. Does it mean that there's less water available for the communities, because we actually pull in large amounts of water. And an example is, we pull in about, I think in last year's report we reported it's a 143million cubic meters of water. It's a lot of water. So, you know, understanding all of those types of things and up until we actually measure how much water we pull in, we won't be able to understand or figure out what the impact is.

INTERVIEWER: So can I ask you a question about, 'cause it sounds like you're busy measuring, because those things that are material to you, are very important. How did you go about sort of quantifying that into things that are measurable? Did you like undertake like mass

projects or a different stream?

INTERVIEWEE: So, we've had a lot of our environment KPI's and SD KPI's that we've been reporting on for a long time. So like I say, from about 1995 where we started reporting on our environmental performance, you know, those KPI's kind of evolved, as conditions changed, and CG1 economic environments change, you know those things evolved. In 2000 when GRI came about, we took GRI and we said okay, what do stakeholders want to see, from an external perspective, what do stakeholders wanna see. And we said okay, we're measuring greenhouse gasses, we're measuring water, we are measuring. So there's a number of things that we measure but, as the years go by, different thing started happening. For example, in 2008 we had the anti-competitive behaviour and that was a serious topic within the media. So, we addressed that in the sustainability report that year. However, it didn't become a permanent KPI, because that is what was important at that time. Now there's a big focus on carbon tax. So we are already making sure that we are reporting our greenhouse gasses. Where in, I think about seven years ago, when I started specifically in this job, all our greenhouse gas indicators, there were only four of them. So it was methane and CO<sub>2</sub>, broken up into direct and indirect, only. Then we found okay, there's a need for actually, we need to start reporting, what are our Scope 3 emissions. People are getting interested in what is that. Is it something that's material to us, let's go have a look. We went and we did a study to see is Scope 3 emissions important to us, yes, it became ... so we added as an indicator. Then we said okay, we've got CO<sub>2</sub>, can we break it down further. Can we understand where exactly, what are the sources of this CO<sub>2</sub>. Can we break it down a little bit further? So for example, we took methane and we said okay, we've got methane from mining emission, we've got methane that comes through the process at Sinfields, we've got methane that comes out of the use of petrol and diesel, you know. And we started breaking it up and you know, starting to get to finer details of that specific KPI. So the total greenhouse gas KPI is no longer broken up of four. Base KPI's is broken up into more. So, as time goes and we start understanding the data better, and we get better ways of measuring the data, we can understand what is important to us. So for example, from a carbon tax perspective, or carbon budget perspective, it's very important that we know exactly what our greenhouse gasses are made up. So, depending on what are the outside circumstances, as well as the inside circumstances, we ... it's determined which KPI's are necessary to report. So, another example is water. You know, the plant ... the gas to liquid plant in Qatar, you know, before that plant actually came on line, we never used to report things like, water extracted from the sea. Because in South Africa none of our plants sit next to the sea. So it

wasn't necessary. Now, that plant specifically sits on the ocean, they're pulling water off of the ocean, that goes through the cooling process and then it gets put back into the ocean. So we needed to understand okay, what is that impact exactly. Does it have an impact on the fish and etcetera in the ocean, where the water goes back in. Because when it comes in it's cool, when it goes out it's warmer. So does it have a temperature impact. So those are the types of things. So depending on the changing circumstances of the organisation, the KPI's kind of evolve with them. But in general, because the business model of the organisation hasn't changed that drastically, the KPI's kind of stayed the same. To a large extent. But, even like BBEE is a prime example, because of the codes changed recently. It's incumbent on us to actually report on what those codes are, the changes in the codes, what does that mean for M2. We're now going from a level 4, I think, to a level 8, or something. So, it because there are changes in legislation, because there outside factors, maybe even investors are more interested in knowing certain things, we assess how material that is to us, and whether it can improve our reporting as well. So, based on that, we have like for example, where we take GRI we have an internal set of definitions and guidelines on what the KPI's are that we measure, that are sustainability KPI's. And based on that, we roll it out all of the business units, across the international operations, the South African operations, and we say okay, this is our common understanding of what it is that we want to measure. And based on this everybody reports on the same set of guidelines and data definition. So that we can get to this document and say, for M2, this is our data indicators.

INTERVIEWER: Okay, great. So because you have so many disparate parts and they're all pulling on something quite cohesive, how do you systemise that. So, do you have an input system, do you have dashboard?

INTERVIEWEE: Okay. So in the beginning we started off with ...

INTERVIEWER: And you also said you started you know; you've had more sophisticated ways of tracking your impact.

INTERVIEWEE: Ja, so, to a very large extent up until very, very recently, all of our sustainability data we captured on Excel. Everything was captured on Excel but, like I said because we have this set of definitions, to standardise who reports what. It's essentially an Excel template that went out to the business units and we got that information back and put it together, and we started drawing graphs etc., as the data again came in over the years. Recently,

over the last two years or so, 'cause Excel is very ... I mean it's a manual input system. However, we had auditors and we still do have auditors, we have external auditors that come in, they take the information on the Excel spreadsheets, they go to the business units and they check it. They do their audit, they come back and they say okay, this is what the data says, what you're reporting, we're happy you know, there's no material misstated in the data. So we've ... with the whole new operating model that M2's got, we've had a lot of business process optimisation programmes, SAP being one of them. Because all the different business unit's kind of were running different modules of SAP. For sustainability specifically, we've now implemented the SAP sustainability performance management module. So essentially how this works, is it takes Excel, it takes what we have in Excel and just puts it in a system. So it's a centrally accessed system, so we don't have spreadsheets going in between different people all the time, and version control etcetera. So, and it also makes assurance much easier, because all your supporting evidence just gets loaded up into the system. So we've actually implement this system globally, for M2, in August this year it went live. So we're still running with this system, we're still trying to figure out what are the tweaks etcetera, but the ideal is that once it's up and running etcetera, it makes the processing of data information a lot faster. Which means we can trend and analyse a lot better, to get to the point of understanding, when we implement a certain initiative, what is the impact, and we'll be able to see it in the data. At the moment getting those type ... that type of information, out of the data, is next to impossible. Because the process of just bringing in the data, takes so long. So, from a understanding and performance management of sustainability as such, in M2, we haven't really gotten to that point to say, we can implement a initiative and then immediately see it in the data. Because the data process takes too long. So we only see it after you know, some time.

INTERVIEWER: And you have to think back to try and ...

INTERVIEWEE: We have to think back. So when we start doing analysis on a yearly basis, that's when we see the impacts. Prime example is, when the Oryx facility came on-line. Before that we were basically working off of GTL. So our greenhouse gas intensity of production, versus the actual carbon emissions that go out, you know, that ... it kind of was the same. Then we brought on-line a very low carbon facility, but with high production yield. So what that immediately did was, you saw the greenhouse gas intensity just drop. Because that came into the mix of our production and carbon emissions. Then the decision was taken a couple of years, or, I think it was last year, that because they are a joint venture we're gonna start

excluding their data out of M2 data set. And what that did was immediately the greenhouse gas intensity jumped up. But we could only see that after a period of a year, when we could compare it year on year. You see, so, it, because you only start looking at, because the data was coming in on a quarterly basis. So you only see it once you have the full data set. Versus if the data's coming through a system on a monthly basis, which it's starting to do now, you'll be able to see those fluctuations a lot faster. Another example for it is the exposure hours. The number, the amount of time that we have employees and contractors on site. You know, that they are exposed to harm, because that's part of our safety indicators. So, because that information is actually less complex than the greenhouse gas information, it's injuries and number of hours. However, we have a lag of a month, because the data needs to get processed through HR, for contract it needs to be processed through procurement. So we have a lag of a month. So after a month, if there's been a shut down for example, we'll only be able to see it after a month, what was the impact of the shutdown. How many contractors were actually onsite. And how many people were exposed to harm or danger, on a site. So, we just recently had shut down in September, so we'll only really see that data in November, when that data starts coming through.

INTERVIEWER: And will this SAPs system start to enable you to automate that? So will they integrate with your HR?

INTERVIEWEE: So that would be, so that is the end goal. Where, we have all of these SAP systems, from HR, from Procurement etcetera, that will pull through into our sustainability performance management module. So instead of now having people entering the data, which is where we are currently, because we've moved from Excel to this. Once we start integrating into those different ... we'll actually even get to a point where we could probably calculate an RCR, which is our safety measures, the minute an incident happens. So, the minute somebody gets injured and it goes into the system, the system will pull out what are the RCR calculated exposure hours, at that specific point in time. Because a computer can do that, the computer can pick up okay you've had so many people on site, these are the number of hours down to the hour. So if an injury occurs we'll be able to calculate what is RCR, right now we're calculating it on a monthly basis and...

INTERVIEWEE: And that's proactive...

INTERVIEWEE: ...exactly. So once we can get those types of trends you know, we'll be able

to start preventing injuries. Because if we know that if we have certain circumstances and they are high risk circumstances in a plant environment, we'll be able to say immediately, listen guys, this is high risk, be more aware you know, and start preventing injuries and things like that. But because the data's still lagging, those type of preventative actions don't happen. So, from a sustainability perspective, at the moment we are still very active when it comes to using our data to predict, or to you know, look at what can be done to improve the sustainability of our operation and even obviously the wellbeing of our people.

INTERVIEWER: Amazing, that's brilliant, it must be an exciting project to be on, knowing what it could become?

INTERVIEWEE: Ja. Knowing exactly, what it could become yes, but we are still in the very, very beginning phases. You know we also wanna get to a point when the data in the system is reliable to the point that you don't need to go through a disclosure committee, and let the data only becomes available to the public once a year. We want to get to a point where I think, I think it's Marks and Spencer, overseas. You go onto their website and they literally have live data.

INTERVIEWER: Really?

INTERVIEWEE: They have data, as somebody in the public you can have a look, you just click on it if something happens, if something's going on in the news. VW being a prime example, you wanna now go see o, what does this mean for you. And that's something that can't be quantified necessarily at that point in time, because all of these things first need to be calculated and analysed etcetera and we'll only find out what does that mean for them when they publish their SD report, in a years' time.

INTERVIEWER: Exactly. Okay that's really interesting. So what you've spoken a lot about is the process and the KPI's and systems, which is brilliant. So now I want to know a little bit more about the 'so what'. So these impacts of, so I can understand the future impacts based on what you're doing now, but currently. How is this data affecting strategic decision making? So, you're able to kind of quantify these carbon omissions, and you've seen that when you removed that JV out, your greenhouse gasses went up. Did that affect a decision, did that drive an innovation process?

INTERVIEWEE: Okay, so a lot of the data at the moment is aimed at our external

stakeholders. But from a perspective of strategy, and how it works within the organisation, I think, a good example. I think I can give you of how understanding sustainability, or the sustainability data that's coming through in the organisation, and driving change is the anti-competitive behaviour and all of that. So, understanding those types of impacts. Okay look, what does this mean and then from a strategic perspective within the organisation it means that clearly there's something wrong. And that needs to be fixed. So a decision was taken from a group level that look, we need to work on what is ethically going on within the organisation. What do we need to change culturally, within the organisation, to make sure that this doesn't happen again? So it very, it's still very active, where something kinda needs to go wrong first. And then it's really like the tail wagging the dog at this point, when something kind of needs to go wrong first and then we people say okay, to prevent this in future, what do we need to do. But, something that we've implemented recently is our One M2 SHE, One M2 SHE excellent approach, which is a risk based approach. So what we're saying is from there okay, from the data that we've had so far, we understand that we have the most incidents in this area of the business, etcetera, but understanding that from a risk perspective, what is it that we want to avoid. For example, we don't want to have a gas explosion at the Secunda plant, because what does that mean if something like that had to happen. So, you know, in terms of financially, what would be lost. Socially, what would be lost. Loss of life.

INTERVIEWER: Perception?

INTERVIEWEE: Exactly, reputation. All of those things, what would that mean for the community? So as M2, we don't want something like that to happen. It has happened in the past and that the data shows that. So I think the very last time there was a huge explosion, I think it was actually just before I started at M2, it was round about 2004/2005 somewhere. Where I think 30 people died. So it's something that you don't, that's one of the things you don't want to do. So, we're looking at it from a risk perspective. What are the risks, what are the issues that of events, or things that can happen, that we don't want to happen? So then, from that perspective, once we've understood all of that we can say okay, what are the things we need to put in place, that will prevent it. And based on the data that we have available, where do our risks lie. Where potentially, so for example, if we have injuries and we are noticing that there is a trend in injuries of people falling from scaffolding, or people falling from heights. Clearly there's something in the process that's not working properly, or the controls that are supposed to be in place to prevent that, is not working properly. So from a

data perspective, we'll be able to see those results and say okay, we need to take a strategic decision to say something is not working, how do we fix it, and how do we prevent it going forward.

INTERVIEWEE: It then becomes a policy; it then becomes something that needs to be enforced. Okay, but also from a bigger perspective and I mean like, you should clearly understand this, is that sustainability is not just the environment and the...

INTERVIEWEE: No, it's ...

INTERVIEWEE: Society, it's got a financial implication.

INTERVIEWEE: It's your future.

INTERVIEWEE: It is how do we create value. So from a huge sustainability perspective where we're understanding, okay, this is how much money we make, this is the value we're currently creating for our shareholders. This is the impact we have in the environment. So for M2, as an oil and gas petrochemicals company, you know, how do we position the organisation. And this is where the operating model comes from. And understanding what our value chain is, because that's what it was all about. Ensuring that we understand our value chain, from the beginning to the end, where do we have an impact what ... how are we creating value. From that perspective, we then, you know the GEC took the decision that we wanna focus on a gas future, we want to focus on our chemicals future. Because that is where we have a less of an environmental impact. It's not to say that we're just gonna shut down Secunda, Secunda is still there, Secunda is still running. But it means that we're going to start working on programs, or we have programs in place, but you know really looking at what is important. What is gonna give us ... what is gonna get us to the better energy efficiency. What is gonna get us to the better value for our stakeholders as a whole, and not just for the financial shareholders.

INTERVIEWER: Absolutely, because what we've seen ... so what I've historically seen with research is that, sustainability strategies are for two sorts of purposes, from a financial perspective. One is cost saving and that's how you increase your operating profit. But is there a dual sort of focus?

INTERVIEWEE: Exactly.

INTERVIEWEE: There is, there is, very much so. And that ... I think you'll reading it in I

think, in the annual integrated report etcetera, where we've just gone through a business enhancement ...

INTERVIEWER: The only one that's available online is up to 2014.

INTERVIEWEE: Ja, the new ones are coming through, I think the 2015 one was actually published on the website on Friday, so you can go and have a look. So, we just recently went through a, what's it called, a business enhancement programme. Which essentially was a restructuring of the whole organisation, as well as staff. But the main thing, or the main driver for that was, with the oil price dropping at the end of last year and the impact that that had in M2. To keep the company sustainable, I mean M2 is a huge organisation it's not just gonna fall over tomorrow. But at the same time, we don't wanna be caught in three, four years down the line, where the oil price is constantly low and we did nothing about our cost base. We need to get to a point where our cost base is efficient and we're not spending money on unnecessary initiatives. We're not spending money on unnecessary activities within the organisation. So, that whole story happened within the business. So, how do we have an efficient cost base where we're not unnecessarily spending money, but at the same time while keeping our cost down, still expanding in the US, in Uzbekistan and places like that. So that our whole sustainability strategy, the company strategy overall, encompasses all of that. Whether it's, how will we be sustainable within a South African context. How are we sustainable within a global context, and what does that mean for each of our different operating entities. What does it mean for the employees within M2? A very, very good example is M2 moving from the number of different buildings that we're in, to the one building in Sandton. How is that going to change the culture within the organisation, where for example productivity, efficiency, I mean if we were at Sandton you would've come to reception you would've asked me and you would've found me. Not going to one building and then realising actually she's in a different building. It's time, you know, it's your time, it's my time, you're driving up and down trying to find me. It's gonna make things more efficient, so from a sustainability perspective it makes reducing costs so much more efficient.

INTERVIEWER: Ya, absolutely. That ... what I'm curious about is so you're working on all of these metrics you're tracking the KPI's, you're tracking year on year. How integrated is the achievement of these KPI's?

INTERVIEWEE: Okay. So all of these KPI's, and because they get verified externally, they

actually get signed off, or vetted at audit committee level, which is the board, so the M2 Board. So, it doesn't ... accountability for the information that sits in our SD report and in our integrated report, goes up to that level. So it's very important to them. Especially the KPI's that have a significant impact, whether it is from a regulatory perspective, if it's from a financial perspective, and obviously what is materially important to the stakeholders at that point in time.

INTERVIEWER: Ja.

INTERVIEWEE: So for example, and that's why I come back to greenhouse gasses, because it is something that is talked about all the time. The minute M2's name gets mentioned, that's the first thing that comes up. With the carbon tax and the carbon budgets discussions at the moment, greenhouse gas is very important.

*[interrupted by cell phone call]*

INTERVIEWEE: What was I saying?

INTERVIEWER: Greenhouse gasses, carbon tax.

INTERVIEWEE: Greenhouse gasses, carbon tax, and I'm just trying to remember my train of thought.

INTERVIEWER: How important is that at a level to reducing those KPI's, achieving your KPI's.

INTERVIEWEE: Ja. So, because it's in the spotlight, it's a discussion that's happening with regulatory and actually [person x] across the table ... across the way from me. She actually sits on BUSA and negotiates on behalf of M2 when it comes to things like this. Because it ... at the end of the day it will have a financial impact.

INTERVIEWER: And there's some things that you just can't...

INTERVIEWEE: There's just some things that you just can't avoid. So if it's gonna have a financial impact, remember M2 has a very big greenhouse footprint. We need to understand firstly, is the data correct. And if so, what is that mean in terms of the impact it's going to have when carbon tax or carbon budgets actually gets implemented. And that's coming along in a year or two. But I mean we've been working on the data, getting the data ready for the past four years already, understanding that this is what's coming. So understanding what is going

on in the external landscape, helps us to shape what we do with the data and who reviews it, and at what level.

INTERVIEWER: Okay. Can I ask you a quick question, sorry just to side track? So the KPI's you set for yourself is specifically, let's say with greenhouse, is that based on regulatory KPI's, or is it based on internal, like last year emitted X, this year we need to emit Y. Is that an internal?

INTERVIEWEE: Okay, so those types of targets, yes, but a lot of our environmental KPI's in the past, they were voluntary targets where we set it for ourselves. For example, with energy sufficiency, knowing that Secunda is very carbon intensive and uses a lot of energy, the decision was made that we need to get the plant to a more energy efficient state. So, we set our own internal target as to what we want to achieve. We have published them in the SD report to say this is the target that we wanna meet. It also comes from things like the COPS and what is it called now, lost my mind ... [Person x] goes to it we were talking about it earlier ... let's just check here maybe this will jog my memory what it's called. IPCC, International ... I wrote about it; I can't even think ... Climate change.

INTERVIEWEE: Yes.

INTERVIEWEE: That stuff. All those climate change, inter-governmental panel on climate change and those things, right. So you know, understanding what they want, and you know having like for example [Person x] sits on the negotiating teams for the UFCCC and since the Kyoto Protocol and all those types of things. So, as especially as she understands what is coming.

INTERVIEWER: Okay.

INTERVIEWEE: From developing countries, from developed countries, all of that ...

INTERVIEWER: And she comes in and says as a business we need to ...

INTERVIEWEE: We need to do this and that gets put in to part of the strategy to say okay, we need to do this, we need to report on these things. How is this going to impact us going down the line. What do we need to change within organisation to have those? So, for example, specifically carbon tax, when we knew carbon tax and carbon budgets were on the table, from after somebody like [Person x] being on these negotiating parties in Paris and in Bonn

wherever. You know, they had a, what was it called, a mandating committee that was designed to just look at what was going the impact going to be. And that mandating committee then gave strategic advice on how M2 needs to move forward to the GEC and to the audit Committee and to the Board.

INTERVIEWER: Okay.

INTERVIEWEE: You know, the same type of thing happened with the air quality legislation, they came in into the country recently. And the types of permits like, that we needed to apply for. And extensions on permits, I'm sure you heard in the year somewhere, that M2 would've gone to court with government, on those air quality permits, and all of those types of things. So we had [person y] that was also on a committee on how is M2 going to deal with this. And they advised the Board and they advised the GEC and say look, this is the information, this is the data that we have available, you know. These are the pro's and con's of whatever it is that you decide to do, strategically going forward, for the organisation.

INTERVIEWER: Do you think, I mean it sounds like it, but do you think that sustainability with this new operating model is very much a core component of the business strategy?

INTERVIEWEE: Yes, definitely.

INTERVIEWER: Can I ask you a question around performance management, in the context of sustainable KPI's. So, you set targets for yourself, how are people incentivised to achieve them?

INTERVIEWEE: Okay, so, specifically, okay, from ...

INTERVIEWER: As a business unit.

INTERVIEWEE: Ja, from a full SD scope, there are specific performance targets that are set and they actually go to a individual level.

INTERVIEWEE: Okay. So for example, if we ... from a safety perspective. The CEO, right down to the person on the plant, you know, signing a piece of paper, their performance bonus, or their performance increase for example, has a safety component to it. Because that is how important safety is within M2, you know. Each person is accountable for the next persons' safety. Each person is accountable to make sure we all go home safely and we come back to

work safely the next day. Every time that there's an injury, or ... and that's the RCR, so the improvement on that RCR, whether we have fatalities, it impacts your individual performance, as well as the organisation's performance. So, for certain sustainability KPI's, yes, it goes to actually a individual performance level. And how the improvement of those KPI's, so as we measure the data if there's an improvement, you get obviously a better bonus. If there's not, you don't get a bonus.

INTERVIEWER: Okay.

INTERVIEWEE: Okay. That's kind of how it works. But there are certain KPI'Ss that are only from a group level, because for example BEE. I can't be responsible for BEE, I ... you know, it's ... you need to understand the practicalities of the KPI's that we're looking at. From a group perspective, yes. You know if the group achieves a certain BEE level status, you know, based on initiatives that were run via through HR, how .... what the change in the recruitment process, all of those types of things. The change in the procurement processes, all of those types of things it's a group effort to get there. So not one individual can actually be responsible for that, you know. So, based on the group's performance that then has an impact. You'll actually see once you get the 2015 integrated report, there's a breakdown of exactly how performance is incentivised within individual's salaries, etcetera.

INTERVIEWER: Okay, great.

INTERVIEWEE: From a, ... all the way from the CEO down and how it's structured, within the different levels within the organisation. So there's a lot of things that actually contribute towards that. So, but for example, with us in SHE function, where you know, where your individual performance obviously is based on how you do your work, and what you do. But also, on how the team functions, and how the team achieves certain targets, based against set plans that we have, and what the targets are that we set for the team itself. That rolls up into what is set for the business unit. That rolls up into what is set for the organisation. So what are our goals for the next year, and what do we want to achieve over that period of time. And it essentially cascades down to an individual's performance. But those goals will have certain sustainability aspects to them. So it won't just be a financial thing. So, a prime example within the SHE function is okay, how well do we manage cost savings. How well do we improve our safety record? How well do we ... if we say okay, we have initiatives to start reducing emissions, or looking at emissions or whatever the case may be, you know. What was the

success of that initiative, what is the progress initiatives, has it made an impact, does the data show that once that initiative went live, you know, does the data show that there was actually an improvement in our performance? So all of that, it's all structured based on your performance, individually, as a team, as an organisation.

INTERVIEWER: Okay, great. I'd love your opinion, it's one of the questions that have come up a lot. Is that a lot of organisational, organisations who have sustainability divisions, departments, some of them have said that it was very difficult to quantify impact.

INTERVIEWEE: Yes.

INTERVIEWER: And that these effects are so long term and others have said that we live in a day and age where you can see exactly what you were doing and make responsive decisions.

INTERVIEWEE: Okay.

INTERVIEWER: From your perspective as a group, do you veer more towards data is crucial to understanding how we're impacting the environment, or qualitatively we will only be able to measure this from a societal level?

INTERVIEWEE: Okay. I think data for me quantitatively is very important, because of M2 being a manufacturing concern. Our impacts are very real; our impacts are very physical. So you can measure it. In terms of the environment. In terms of society however, no, not as easy, because we have an impact. So for example we have Secunda, that plant is there. When Secunda got established some 60 odd years ago, there was nothing there. It was just a plot. Today, 60 years later it's a flourishing city. And it's mainly because of M2, but not only because of M2, but you can't quantify how much of it is because of M2.

INTERVIEWER: Ja.

INTERVIEWEE: So that's where it starts becoming difficult. We say in the SD report and the integrated report, we spent billions, or millions of Rands on education. We've got bursaries, etcetera. So we can quantitatively tell you okay, this is how much we spent last year. These are how many graduates started working for us. But only in a number of years, if it is tracked consistently.

INTERVIEWER: When you see effect ...

INTERVIEWEE: Okay, of the 10 graduates that came into M2 in 2010, five of them still work for M2 and are now senior engineers, or whatever the case may be. But then you can't really say, okay those five engineers built the plant, because it's not just them building a plant, it's the whole organisation building a plant. So you can't really quantify okay, we spent so much on bursaries, but what did that actually mean for us financially, we can't get to that point. We can say yes, we have minimised the impact of skills shortages by you know, giving bursaries, spending money on education, making sure that there are more engineers coming through the system.

INTERVIEWER: Ja.

INTERVIEWEE: But, we have contracts with these engineers coming into M2, they work for us for five years, get their experience and then they leave, maybe they go overseas. What impact is that? So, we can't measure for each of those engineers that came through the process, what impact do they actually have on society. What does that mean for their family? How does that impact their community where they are in? So those are the softer things, the soft issues that you really can't quantify. Because it will essentially will take one person for each engineer walking around and you know, tracking their life for 10 years type of thing. So we can measure the ... what we spend, we can measure the number of people coming in through the system, how many go out, how many come in.

INTERVIEWER: So you can measure it to a point, and thereafter ...?

INTERVIEWEE: You can measure it to a point. But then also, like you say and like other people are saying, from a society perspective it's a long term thing. So for example, we have feeding schemes at creches and primary schools, with the intention that if a child is fed better when they are younger, their brains develop better that means that they can learn better as they grow up. And hopefully this child decides okay, maths and science is important I want to become an engineer and I'll work for M2. That's a 20-year timeline that you're looking at. And then something you can't quantify, because let's be honest, I probably won't even be here by the time that child start working, you know. So to keep those types of things running, it's really understanding all of that and under ... I mean, sustainability reporting is not like financial reporting, it's still a very, very new subject. It's still very, very fresh and in its infancy stage, were people are only starting to these types of things now. I was at a seminar last week for example Transnet, you know they're only really starting to understand what is materially

important to them. So they haven't even started measuring any of these things yet, and quantifying what is the data, because they haven't even decided what KPI's they want to use. So it's very difficult to get to that point where, over a period of 50 years, what was the impact. Because 60 years ago when M2 started, it wasn't even on their radar that we need to measure these things.

INTERVIEWER: Absolutely.

INTERVIEWEE: So we started really reporting on it since 1996, so we've only got really, what, 15, 20 years' worth of data, really, you know. BEE only became an issue in South Africa post-1995, you know. Before that it wasn't an issue because there was no such thing, you know. So all of these things, because of the south African context we're in, there's a lot of factors that change constantly, that changes what and how we measure.

INTERVIEWER: Ja, absolutely.

INTERVIEWEE: And if those things keep on changing we're never gonna get to a point over a long term period to actually understand socially, what is our impact, environmentally yes, it's science. Environment is science, you take a flow meter measurement, you can work it out. Socially, not so much.

INTERVIEWER: Financial?

INTERVIEWEE: Easy, it's money, you know.

INTERVIEWER: So the last question really is, how do you think performance management and measurement systems contribute towards sustainable strategic decision making?

INTERVIEWEE: I think from a perspective of performance management systems, help integrity of the data. Because if you're not tracking something firstly, you can't test whether or not it's accurate. Only once you understand that this is something that I need to measure, firstly, can you test its accuracy. Once you understand where its accuracy lies, can you start using systems to start improving that. And once you start using systems, 'cause there are a lot of systems out there, that can assist with reporting and pulling data from different sources, and really putting a system in place that gives you that financial, or sustainability, or even environmental information, that you can start making decisions on. And you can only start making decisions, strategic or otherwise, if you can rely on the data. And that's why a

sustainability data process is not just the gathering of the information, it's the actual quality assurance of that information. And so systems can firstly help you organise your data, it can help you understand okay, what do I need to assure, do I need external assurance. If you have a robust system, that's been working for years and it's in place, you can rely on the controls, you know. Okay, assurance is not important anymore because we trust the data we, we trust the integrity of our systems. If you don't have that trust, you're going to need assurance. And all of that actually forms part of the whole process, it forms part of the whole system. So, a performance management system, a technology software solution of some kind, you can't use that in isolation. You need to use that together with what it is that's materially important to you, what it is that you want to measure, what it is that you want to achieve at the end of the day by getting that data. Because a lot of people or, I've heard of organisations that you know they hear o, M2is doing this, let's do it as well. But they don't really understand why they are doing it. So they need to understand first, yes you can have a performance management system, it's not going to mean anything to you if you don't understand what it is you want to performance manage in the first place.

INTERVIEWER: Absolutely.

INTERVIEWEE: So first, the understanding needs to be there on, what it is do we want to achieve, what is the impact that we want to measure, and do we want to improve it, yes or no. If you can answer that question then we can say okay, what systems can we use that will get us to that point. What ... and with sustainability performance management systems, you can tailor make a lot of it. Our one that we've just implemented recently, is very much tailored to what it is we want to report, we're not just using the generic system. And there are generic systems for people or for organisations that aren't yet sure what they want, but they know they want a system to make things easier.

INTERVIEWER: Ja.

INTERVIEWEE: And if things are more efficient within the process itself, you get to your end goal faster. And you get to a point where you can start taking that information and making decisions off of it.

INTERVIEWER: Perfect. Thank you.

INTERVIEWEE: My pleasure.

Transcript CG1

Interview with Environmental Sustainability Analyst at Company Offices

19/10/15

INTERVIEWER: And so the big question is how do performance management and measurement systems contribute towards sustainable strategic decision making? So this is qualitative, it's open ended, it's a story.

A lot of companies haven't fully quantified their impact and so the reasons they haven't have also been very helpful in answering a lot of questions, so this is not like a yes or no; it's just like a bit of a discussion.

INTERVIEWEE: Okay.

INTERVIEWER: So to begin there are a few general questions. I'm using a specific model for my research so it's context

INTERVIEWEE: Okay.

INTERVIEWER: Which is the why, then the process or the how you do the things, the what and then the so what. It is based on Pettigrew's Strategic change model.

INTERVIEWEE: Okay.

INTERVIEWER: So is there any effect like at a performance management level, at a bonus level or at a policy level like what is; what have some of these activities like what are the outcomes been? So do you want to tell me a little bit about your role first?

INTERVIEWEE: My role.

INTERVIEWER: Yes.

INTERVIEWEE: Okay so my role is a very interesting one. There is four of us in the team, in the sustainability team; well five of us. And we sit inside of corporate affairs. We report directly to the corporate affairs executive who reports directly to the CEO which is great because in the space that we in, we need top level type of support and how our department is split, we have one; what is this, what is she called? Corporate social investment specialist so she does all our social sustainability and then there is [person x] and myself. [person x] does;

he's the sustainability manager. Well we call him the sustainability manager, he looks after the entire space; social and environmental and his core focus is operations in terms of the space that we are in so water waste energy.

INTERVIEWER: Yes.

INTERVIEWEE: So his big focus is on that and working with our different operations directors. My role is corporate accountability so I do all of our accountability reports. With that comes our carbon footprint and that's how we quantify our impact so we measure our scope 1, scope 2 and scope 3 emissions.

INTERVIEWER: Yes.

INTERVIEWEE: Scope 1 is obviously our directing emissions from generator combustion, through our fridge and gases to our mobile fuels and our electricity and scope 2 and scope 3 would be paper usage, water, contractor trucks and so forth. I also work very much with our supply chain who are my key KPI, is working with our supply chain and with our division so I'm basically; I don't like to use the word consultant but I'm a consultant for environmental stuff.

INTERVIEWER: Yes.

INTERVIEWEE: For our supply chain. For example, seafood.

INTERVIEWER: Yes.

INTERVIEWEE: I look at all our seafood and say x company, Supply x, y and z. It doesn't sound sustainable, so we are taking a decision to delist it from our business. We are taking a decision to bring in the WWF or MMC to go work with our supplier to improve the management of that fishery.

INTERVIEWER: Yes.

INTERVIEWEE: I also work with them on key metrics, water, energy, waste logistics, climate change, bio diversity impact, social impact, packaging our product attributes. The commercial aspect of being green, public disclosure so a lot of elements that I work with; our supply chain we do the same things internally so we generally don't expect our suppliers to do things that we are not doing.

INTERVIEWER: Yes.

INTERVIEWEE: Although in terms, I mean, our biggest impact is electricity as a group but it doesn't mean if our supplier's biggest impact is water we are not interested. We are interested; or if their biggest impact is I don't know, some, I don't know but we are interested and where we don't have the expertise, we get somebody else from outside. [person y] takes care of compliance.

INTERVIEWER: Ja. And so I want to hear a little bit about the journey and then I want to get into a little bit more about how you set KPI's. How much time do we have?

INTERVIEWEE: We have an hour.

INTERVIEWER: Okay great.

INTERVIEWEE: Cool.

INTERVIEWER: Because I found that when I ask big questions upfront and we haven't had the dialogue.

INTERVIEWEE: Perfect.

INTERVIEWER: Like sometimes when I re-ask them later on the answers are a lot richer.

INTERVIEWEE: Okay.

INTERVIEWER: Because we kind of got the context.

INTERVIEWEE: Cool, cool.

INTERVIEWER: So just in general, as an organisation.

INTERVIEWEE: Yes.

INTERVIEWER: How important is data to CG1's strategic decision making?

INTERVIEWEE: I think data is very important to our strategic decision making because if the data is inaccurate you get; you are at a risk of making the wrong decision.

INTERVIEWER: Yes.

INTERVIEWEE: For instance in the space that we are in, electricity, water, waste, those are our metrics we collect on a monthly basis.

INTERVIEWER: Yes.

INTERVIEWEE: And they have to be absolutely accurate; why? Because we've got goals around energy, we've got 20/20 goals and we need to measure how we are doing with those goals. So it's important for us to know. We started off as ... I'm just going to use electricity as an example just because it's our biggest impact.

INTERVIEWER: Yes.

INTERVIEWEE: We started off saying; geez we use a lot of electricity; our electricity bill is really high. Then we said, let's put in energy metres in our stores, external to see exactly how much electricity we use.

INTERVIEWER: Yes.

INTERVIEWEE: And we found that the municipality was over billing us.

INTERVIEWER: Oh.

INTERVIEWEE: That's how important data is.

INTERVIEWER: Okay.

INTERVIEWEE: The municipality was over billing us for a lot of stuff and then but you also get to a point where you are like; okay this is our usage. How do we minimize the electricity we use? Where is our biggest impact within the store? Is it in the bakery, is it the refrigeration, is it with air-conditioning? Where is it and we found it's very useful when you have accurate data.

INTERVIEWER: Yes.

INTERVIEWEE: And we've got external companies who obviously manage that for us and you can make very good decisions. You can make decisions around; okay we are going to change the refrigeration gases in our stores. We are going to use 100 percent LED lighting. This is the amount of savings we expect. We are going to change behaviour. The reason our

electricity usage is so high is perhaps because the store manager walks in and puts on all the lights and everything all at the same time. Let's model behaviour within stores to save energy so we use this much. We are certain we use this much; we have done this to reduce our electricity or let's set these goals.

INTERVIEWER: Yes.

INTERVIEWEE: It's so ... that's how important it is because if at any point we find that perhaps in terms of energy we have the wrong data and we've made 20/20 goals.

INTERVIEWER: Ja.

INTERVIEWEE: And we can't reach our goal or we reach it too quickly because there was a data problem, it's a problem or we invest in energy efficient technology when we are not supposed to or we under invested in that.

INTERVIEWER: Ja.

INTERVIEWEE: So it's quite important.

INTERVIEWER: Okay great. And then do you currently use any dashboards or systems to track your sustainability targets?

INTERVIEWEE: So we don't use dashboards or systems per se except for with regards to our energy and water, that's where we have external check metres and our waste where we have service providers who give us data. We do track on a monthly basis, like I say we track everything on a monthly basis. We still a bit old school. We use Excel spreadsheets most of the time but we have people that are dedicated to checking that data and that accuracy and ...

INTERVIEWER: Do you have a sustainability report that you put out?

INTERVIEWEE: Yes we do.

INTERVIEWER: Tell me about that.

INTERVIEWEE: So we have a sustainability report within our annual report and we also do a global reporting initiative.

INTERVIEWER: Okay great.

INTERVIEWEE: And that is available on our website.

INTERVIEWER: Yes.

INTERVIEWEE: And we have internal sustainability reports that are not necessarily ... that don't necessarily go out for instance in the areas of seafood and timber and specifically with our supply chain and all the things we measure the metrics we measure there. We have reports like that but we don't necessarily publish them externally even with energy and water, all those internal reports are what we file are not necessarily externally communicated but you will get externally would be what's in our annual reports and what's within our GRI report.

INTERVIEWER: Okay. So context, which you touched on like a tiny bit now, so what drove you to start tracking sustainability as a group? So is it externally GRI index. Is there external drivers or was it driven internally as a cost saving and innovation strategy?

INTERVIEWEE: I think it's a bit of both. There definitely is a cost saving but I think as a group we are just ... we want to be responsible Corporate citizens as a group. Cost saving and we want to be responsible; so it's both. We want to do what's right. We know we have an environmental impact. Our biggest one is energy like I said and water and waste so we need to focus on that. We also understand that our biggest environment impact lies within our supply chain and we have to measure and track and try and reduce impact as well. Generally, there is a cost saving; I think with energy use, having just external check into big cost saving because now you are paying less for electricity because we were over billed before, logistics, one of our biggest impacts as well. I mean you can imagine ... we have 400 stores and we have over 5000, estimated 5000 suppliers. We need to feed into those stores and we built DC's through trucks on the road, but there is a cost saving attached to that as well. So I think the context is a bit of both. I can't say it's this specifically or that only but it's a bit of both. We want to be responsible, as you know our annual report is also in king 3 format, sustainability forms a big part of that and so ja.

INTERVIEWER: Okay. So a bit of both. So factors external to the organisations specifically would be king 3, GRI, anything else?

INTERVIEWEE: I think after the whole CG1 merger, sustainability because of the way [global holding company] are sustainability orientated, we are in a bit of pressure to you know, get to that level although we were doing things, we are not doing them at that scale. Also you

must remember CG1 is not a consumer facing brand.

INTERVIEWER: Ja.

INTERVIEWEE: So we don't communicate a lot of the stuff and.

INTERVIEWER: Like an investor level?

INTERVIEWEE: Yes.

INTERVIEWER: Do you feel that pressure or not necessarily?

INTERVIEWEE: Not necessarily, I think I don't think but our investors do request that we fill in the CDP every year so we do that. I don't know if you are aware of the carbon disclosure project, so we do that. I'm just trying to think of a reputational; there is a reputational benefit towards, to that.

INTERVIEWER: But it's predominantly compliance and internal drives, from what it sounds like from you. And internally so some of the things that contributed towards tracking this data was there was a drive for increased transparency within the organisation from a top level down or what were some of the factors that led you to start like internal; that led you to starts going oh well let's get really granular. The merger sounds like was one, what.

INTERVIEWEE: I think as we grow and as we measure a few things, the more we realise internally we need to do that. So for instance I'm going to use our environmental survey. I think at first I had 5 questions asking around energy, water, waste, logistics and packaging and then you realise climate change and then you realise disclosure, then you realise geez fish are; have their own thing, we need to focus on fisheries. We have fish coming into our business. Is it sustainable; and then timber you know, we do what we call highest products assessment here in the store, we also do highest risk environmental impact as a group and we generally focus; we do it on our hierarchal or like priority basis, the highest first.

INTERVIEWER: Yes.

INTERVIEWEE: And I think that's how we approach the sustainability in the group. Where is the biggest impact where we can do something about it and we start there? So biggest impact first.

INTERVIEWER: Okay great.

INTERVIEWEE: Ja.

INTERVIEWER: Because sort of like what other clients are saying is that they can have around 200 indicators in their company that they are sort of constantly tracking.

INTERVIEWEE: Yes

INTERVIEWER: Do you have each of these priorities or set of indicators that you are checking on?

INTERVIEWEE: So it's product specific so far; we do it internally, ourselves so [person x] is probably the best person to talk about internally, as well of the type of indicators we measure like these specific ones will be measured every month but generally energy, water and waste and we have what we; every year we do a highest product assessment every year.

INTERVIEWER: Okay.

INTERVIEWEE: What's; what haven't we been focusing on? Let's focus on that and the things that we are focusing on that, what's changed, what do we need to start thinking? For instance, first we started off by saying we don't want any red listed species in our business, then we move towards saying we have orange species in our business, let's find greener alternatives.

INTERVIEWER: Yes.

INTERVIEWEE: To replace them. Then it became let's help our supplier; instead of just saying we are not sourcing this, let's help that supply chain.

INTERVIEWER: Okay.

INTERVIEWEE: Because it's not exclusive to CG1. Other retailers buy from them we are just saying we are not buying from you. We're not necessarily making a greater impact.

INTERVIEWER: Yes.

INTERVIEWEE: So we do ... we do have product assessment, we do have internal assessments of stuff as well and we measure that very closely; very closely.

INTERVIEWER: Okay cool. And tell me about the process, like how you do this, how you measure it. Can you give me a little bit of an insight into how you go about measuring it? So I know you say monthly but is it an individual in putting data into how much; you know where the difference is and?

INTERVIEWEE: Yes it would be an individual so at store level we have somebody dedicated in store who will send us certain data every month.

INTERVIEWER: In the form of a spreadsheet?

INTERVIEWEE: In the form of a spread sheet. So we have spreadsheets designed, they are very like automated so if you say for instance you are in South Africa ... South Africa and it will show you all the different brands then you will say ... like CG1 then it will be your store will come up CG1 and then you will have to put in your data.

INTERVIEWER: Okay.

INTERVIEWEE: And then for energy for instance we have a dedicated person, [person y] who sits and waits for those data on a monthly basis and calls and says your electricity is a bit too low this month, what's going on? Have you measured it correctly, have you done this so we make sure that that data is accurate in terms of our supply chain; what we do is we have annual surveys and I think about four of them, palm oil very specific, seafood very specific to the areas needed there, timber very specific then have the general survey that cover I think about thirteen different types of metrics. And then we analyse that data and we monitor it; for suppliers it's on an annual basis.

INTERVIEWER: Okay.

INTERVIEWEE: And from that data we will pull out geez for seafood our suppliers are struggling with by catch reduction, we got industry experts, WWF someone our suppliers are struggling in this area, how can we help them? Who are those suppliers, do we have a workshop with them internally? And bring expertise and say; guys, this is what you guys should be doing. We also visit our top performing suppliers. First we want to verify what they said is true, secondly we want to get some knowledge from them so we can go and visit the smaller guys and say; this is how you should consider doing it. And we are; what we call our supplier engagements advocacy because we prefer to work with suppliers and so that's how we do it

here at CG1.

INTERVIEWER: Okay cool. And so how did you define your kind of KPI targets per metric; so there are priorities? How did you define the targets that you are trying to achieve? Is that based on like just decreasing on one year or is it based on a bench marking exercises that you do internally?

INTERVIEWEE: So I think, I can't necessarily say. I'm not the right person to ask that. You can ask [person z] real quick but I know how we have set it. We want to become more efficient right? And we set a target, we want to be 2010 as our baseline and we use what is called "The Business as Usual" model so we understand that our footprint will always grow because we are going to open more stores. And our energy usage; total will energy increase but looking at 2010 as a baseline.

INTERVIEWER: Ja.

INTERVIEWEE: We'll say 2010 is our baseline and if we continue opening stores the way we are opening them prior to 2008. So 2008 is before the CG1 merger and all those stores are called legacy stores so their technology is not as advanced and so forth and if we continue opening our stores the way we were then this is how much electricity we use but if we start putting in energy efficient technology within our stores, this is how much electricity we'd use and that's how we set our goal.

INTERVIEWER: So it's going at a negative?

INTERVIEWEE: Yes. And so that's how we set our goals.

INTERVIEWER: Okay cool. So let me ask you a little bit about the effects of these initiatives; So how is this data that you are getting; that you spend all your time accounting for, what does it; what does it end up doing?

INTERVIEWEE: It does a lot for us.

INTERVIEWER: Okay.

INTERVIEWEE: I mean, we just talked about gas, I know it's methane gas but for instance, because of ... we do the CDP we copy the carbon footprint every year. And the nice thing about our type of business is that because we've got so many different formats. Refrigeration

is a big thing for us and then we do a bit of pilot with CG1.

INTERVIEWER: Ja.

INTERVIEWEE: Where you will see your two-way refrigeration and it works because its global warming potential is one compared to traditional refrigeration gases like R22 which is global warming potential I believe is something like 1 thousand, 8 hundred and 10 kilograms, right.

INTERVIEWER: Ja.

INTERVIEWEE: So the fact that we know that we can do this with CG1, we can do that will all our other stores. So; and then our carbon footprint goes down. So everything we measure has an impact. Water, we are not a big user of water in the group and previously how we used to measure our water is what the municipality bills us but we are now so good with energy efficiency where we I mean like a traditional; any traditional CG1 store today is more than 30 percent more efficient than any other existing store. CG 1 B is the same as well so with each and every store we build and because of the measurements we do, we become more efficient and that's our goal. Each and every store we build, we become more efficient than a legacy store. More efficient than a 2008 store 2010, I mean a store open in 2015 will be more efficient than a store opens in 2014 because technology is improving. We know exactly what we are measuring, we know exactly where the biggest impact is so for instance if we knew our biggest impact was in a bakery we would say; okay when we open a new store, we need to do something about the bakery section. How can we save energy there, how can we save water there?

INTERVIEWER: Okay.

INTERVIEWEE: Water is now a big thing for us where before we were like the municipality bills us this x amount of Rands, we translate that into kilo litres. But now we are saying let's put in external check metres and actually measure our actual water consumption because we harvest water at our stores, which we use for our nursery, which we use to wash our types of fruit for irrigation and so we don't use municipal water for those things. But we want to know how much municipal water we are dealing with because water is a new thing in South Africa and it's going to be a problem soon, running out of quality water. Let's start to measure our impact and see how we can reduce our impact if we can, where can we?

INTERVIEWER: Ja.

INTERVIEWEE: So there is always a next step, we don't just measure things for the sake of measuring it and say hey we measure our energy usage. We want to see real change; we want to drive impact. We don't necessarily communicate it as well as we should like other brands but it's important in terms of the way we do business.

INTERVIEWER: And does this sort of the way; sort of the way you do business the right way; has that effected any kind of internal policies?

INTERVIEWEE: We do have policies around all these things.

INTERVIEWER: Okay.

INTERVIEWEE: So we generally don't just say we have an energy policy, we have a waste management policy, we don't have a water one yet but we do have a seafood policy, a timber policy. So most of the things; and it's usually let's just measure first and once you've measured, you kind of figure out where you are and then you have a policy which is support and how we do our policies here, we would draft a policy, the group corporate executive brands will approve and say okay I'm happy with this policy. We then present it at forum so each and every month we have this thing called forums.

INTERVIEWER: Ja.

INTERVIEWEE: We have different forums and different things. So we have operations forums which would deal specifically with our operations and everything that's going on with our operations and all the directors and sometimes he will sit in on one of those forums so it's a very top dog approach. We present this is the new policy; what does everybody think, put an impact, get a stamp on it and that's the policy.

INTERVIEWER: Okay.

INTERVIEWEE: And we communicate that and say guys this is our new energy policy; this is what we are following. Guys this is our new seafood policy; this is how we are sourcing seafood going forward. So that's in terms of the "so what".

INTERVIEWER: Okay.

INTERVIEWEE: Where all of this; we don't just measure the things and sort of.

INTERVIEWER: Perfect. And do you think the culture of the organisation is affected by this data. Like what I've historically found when you have KPIs and you see you haven't met those targets and that like makes you quite aware and you; it inspires you to change to switch you to, whatever the KPI is that you are measuring. Do you think the act of quantifying a lot of these areas has changed the culture of the organisation?

INTERVIEWEE: I do think especially I personally think so at store level. Why I say that is before, if you just switched on all the lights, that's what you did. But if I come to you and say listen CG1 WoodMead is the same size as CG1 crown mines and you use more electricity and it's because of x, y and z and if you did this a bit differently, your electricity consumption would go down. Store managers take that seriously.

INTERVIEWER: Are they incentivised to kind of compete with each other?

INTERVIEWEE: In terms of sustainability?

INTERVIEWER: Yes. Are they incentivised, so how do you; how do you change their behaviour though?

INTERVIEWEE: So it's really just ... I feel the way you change, I personally feel the way you change behaviour is making people feel like they are significant, they are part of this goal that you are trying to reach; for instance, with my carbon foot printing stuff I actually go to the people who collect the information and say listen this is why it's important for you to send me this information because they are not necessarily environmental scientists like the rest of us. So to say this is why it's important for you to send me this information. This is what it means for the group. This is your current carbon footprint and this is where we are trying to be and I found when I started doing that and actually meeting people and saying ... and helping them understand why it's important, there's a change. They'll even call you and say you know we've only been telling you about A4 paper, we also use A3 to be reported on definitely so there is that sort of ... it's the awareness of why it's important and I feel that kind of change is, I mean even with seafood.

INTERVIEWER: Okay.

INTERVIEWEE: We have a buyer now calling me before they list the species and say hey

[person a] there's this new species that comes from this, this is how they fish it... I'm sorry the fishing gear that they use, what do you think? And I'll do an assessment and I'll say sure in fact you can put that in our stores or no we are not putting that in our stores. So there is sort of a behaviour change because of the data because people... but it only happens because we explain it.

INTERVIEWER: Yes.

INTERVIEWEE: We could sit here and collect all this data and just not explain it to anyone but as soon as people get an understanding of why it's important, what it means for the group and what it means for them, definitely a behaviour change.

INTERVIEWER: And is there any kind of sort of performance management system like performance system in place in managing these KPIs like at a buyer level? Like you know or how the KPIs are calculated like how many of those KPIs aligned with or are linked to sustainability if any?

INTERVIEWEE: I'm not too sure about that, I don't think so per se.

INTERVIEWER: Yes.

INTERVIEWEE: The way people are rewarded and that's basically through CIO citation awards.

INTERVIEWER: Ja.

INTERVIEWEE: So if you are performing well in that area you will get a CIO citation award in sustainability and from any other area actually, that's how we reward people for doing well here.

INTERVIEWER: Okay great.

INTERVIEWEE: But I do think at our forum level people are held accountable so for instance if somebody listed a species that didn't pass by us and it's now relisted they are going on a forum level; they are held accountable.

INTERVIEWER: Okay.

INTERVIEWEE: To say or why didn't you tell us or forum makes a decision that we will not source this thing. that's big even though with operations forum, that's our big decisions that get made there and that's just the stamp. Everybody will need or everybody will do x, y and z, or this is how we do business.

INTERVIEWER: And then operations forum or when you report it forums, how do you visualise all of these different data? The data, do you just trend on graphs, manually so when you aggregate so you said there is this man who's responsible for energy. So how do you report on that on at an EXCO level?

INTERVIEWEE: So on an EXCO level we do a monthly EXCO report, every month about the stuff that we do in sustainability. Every month we do a EXCO report, every 6 months we do your bio, annually we do a social and committee report, social and ethics committees in charge of that space as well and sort of determining what we do in this space. So ja, we are accountable to the EXCO every month we are accountable to social and ethics committee every 6 months.

INTERVIEWER: And do the... the ways in which you are accountable... do you show your performance on graphs or?

INTERVIEWEE: If we are... it depends. It depends on the type of information we are reporting on. Yes, in some instances we'll put a graph and show them this is how, some instances just at an Ops forum it's definitely a presentation with a graph and say this is where we want to be or this is where we are, this is how it looks so you give them appraise about exactly what's happening.

INTERVIEWER: You know systems exist to track all of this stuff and other companies are undergoing the same thing and a couple of other areas where they are very heavy in supply chain and where their business model is relatively sustainable and they are shifting towards kind of automating and aggregating all of this so that they can get real time insights. Do you think that is a project you will ever undertake or do you think your... do you think the way your business is structured is sort of your individual spreadsheets?

INTERVIEWEE: For energy stuff like that it's already automated.

INTERVIEWER: Okay.

INTERVIEWEE: Because it's real time. We can go and log online right now.

INTERVIEWER: Who's automating it?

INTERVIEWEE: [external company].

INTERVIEWER: Okay.

INTERVIEWEE: So you can actually go online and say, and even with our logistics I believe we are more than two business management. We move to business management at store level when you can get real time data, this is what we are doing in this space and etcetera, etcetera. I do think, we have spoken about that a lot and we are in those talks for instance our carbon foot print of information. How do we automate that process and I think the only glitch... we are talking? We are talking to the company that calculates our footprint to work out our system, if it's feasible or who would run it or is it run by us entirely all the time. Do they run it all the time and if they run it how will they pick up errors and so forth? Our only thing is errors.

INTERVIEWER: Ja.

INTERVIEWEE: Minimising errors. Because our thing is... our data is assured externally every year.

INTERVIEWER: Okay.

INTERVIEWEE: We do external assurance of our current open data. I think my only thing is whether it's on a spreadsheet or whether it's automated, somebody needs to be checking it for data accuracy so.

INTERVIEWER: Ja. Can I ask you a question, I mean in your experience, do you think that from a sustainability reporting perspective it's difficult to quantify the impact that you have as a business? So certainly when it comes to like carbon and things that are easier to measure it's easier to quantify and it's easier to see improvements but at a social level, do you think that it's easy to apply qualitative I mean quantitative measures or are you much more reliant on qualitative and anecdotal evidence of improvements in those areas?

INTERVIEWEE: Internally or externally?

INTERVIEWER: In general, in your opinion.

INTERVIEWEE: Ja.

INTERVIEWER: In your opinion as CG1 where do you think it's more relevant to think that actual quantification is important or just constantly measuring and discussing and talking about those whys? Anecdotally gathering evidence or performance is important?

INTERVIEWEE: That's an interesting question. I'm trying to think about where our position as a group is. I think generally speaking, because of the type of business we in measuring our operational impact is... is easy in numbers. To say in terms of numbers, if we are just measuring energy but to say we are reducing our energy because of the social changes or this or this. That is difficult to quantify. In terms of our supplier chain, that's a very difficult space for me to quantify. It's difficult for us to say we are seeing these changes in our supply chain because of x, y, z because we said x, y, z. It's difficult because our surveys are very, don't know how to put it. They are not... they have no numbers. It's tell us for instance if I said the progress you are making on your energy consumption is not progress considering my position all the way down to how I've set targets. I've reached targets, I've externally assured that I have reached targets but to say that they are doing that because of us, it's hard to quantify that. It's a bit of both.

INTERVIEWER: And I think where errors like directly have a financial impact, it's much easier to attribute a number to that....

INTERVIEWEE: Yes. Definitely.

INTERVIEWER: Whereas social impact is.

INTERVIEWEE: Social impact is very difficult. I mean I have never looked at social impact to say this is why we are seeing this change, because of a social impact. It's usually... usually a number. Usually it's a number.

INTERVIEWER: So it sounds like especially from a fishing and timber perspective like from fishing and timber and a few other areas that sustainably sourced products are a core component of your business model.

INTERVIEWEE: Yes.

INTERVIEWER: Do you feel that as a group that there is an integral sustainability strategy or

sustainability is sort viewed as a much more compliance?

INTERVIEWEE: No it's not compliance orientated, we have a compliance department that does that. So [person x] although she sits in our department... she is part of CG1 compliance team but she sits on our department because a lot of her work touches on the stuff that we do so we need her close. But I think, although we won't write it out in black and white that sustainability is all about business strategy, it is.

INTERVIEWER: Okay.

INTERVIEWEE: We don't say that out loud but it actually is. If you think about the types of decision, I mean investments and energy efficiency, water, logistics is big investments you know. Building... putting up DCs and changing.

INTERVIEWER: What is DC?

INTERVIEWEE: A distribution centre.

INTERVIEWER: Oh.

INTERVIEWEE: So that's how we reduce our logistics. We've built distribution centres and things go up and down from the CEMS. You can't have one supplier driving to CG1 and driving there and driving there. It's centralised we have a system. You order online and so forth and so it is part of our business strategy because... just because we are consumer facing doesn't mean it's not very hard for us to communicate the things we do. As you know, our brands are competitive.

INTERVIEWER: Yes.

INTERVIEWEE: So which brand talks about it because we do it for all brands. If you walk into any CG1 store all the seafood has been checked in you know and signed off but does CG1 communicate about it? Does CG1 communicate about it? We don't because we are not a consumer facing brand. We try have a culture of competition, our business model is one of competition - stores of the same size - pitting against each other like Store A against store B, Woodmead against Sunninghill and we bench them against each other for sustainability, like how come Woodmead is using less energy than you and they're bigger etc.

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INTERVIEWER: And so just to like... last question really is; do you think that measuring or quantifying sustainability contributes towards sustainable strategic decision making?

INTERVIEWEE: Yes.

INTERVIEWER: Do you?

INTERVIEWEE: Yep. I do think because I think you can't make a decision on what you don't know so it's important to know what you are making a decision on. I mean even with our journey, it started a long time ago we are now making 20 pinnacles I mean 20 pinnacles we only made them last year. But we went through a process from 2009 when we first put in our first check metres.

INTERVIEWER: Really.

INTERVIEWEE: We first put in our check metres in 2009 and then we started saying okay we've got these check metres, where's our biggest impact? So every year we sort of grow. Okay we found that refrigeration gas is not an issue or generator combustion is an issue or our logistics or our paper so it's really a step by step.

INTERVIEWER: It's very dynamic.

INTERVIEWEE: Yes it's very dynamic and also like a step by step process where we check like okay we think that we figured out this energy thing, let's set a target. We think the technology that we are putting in and the technology that's coming, we can reduce our missions by x, y, z. And also you must remember a lot of our goals are driven by [global partner] goals so they had 3 major goals. First one is to supply a 100 percent by renewable energy so there are some things we need to start looking at as well. Produce zero waste landfall that's why we are so big on waste and trying to reduce our waste landfall. I think currently we are diverting something like 72 percent of our waste from landfalls.

INTERVIEWER: That's amazing.

INTERVIEWEE: So that's a very big area for us as well and to sell products that sustain people and the environment. So that's why we have these high risk product assessments, always keep on track of where is our biggest impact in terms of price let's focus on that area. There's some area I haven't spoken about right now mainly because we are still you know; we are still

in test phase so we are not ready to publicly say hey we are doing this or around this or around that.

INTERVIEWER: Ja. Amazing. Do you have anything else to add or any other questions?

INTERVIEWEE: Do you have any other questions?

INTERVIEWEE: We have... there is so much for us to do especially for us in supply chain. We going to really have a drive towards our supply chain because figure out where our biggest impact is. That's where we feel like.

INTERVIEWEE: Like we sort of we think we are figuring this out and we are doing pretty well but our suppliers... our biggest thing is suppliers. I mean last year a couple of suppliers filled out our survey. We can pick up who's not doing well and who's doing great and we put them in contact with the NBI. It's the NBI supplier do audits. They have never done them before, please help them. And some of them are subsidised and some of them are partly subsidised, some of them are paid for completely by the suppliers. So our supply chain is our biggest impact. I mean my thing is if I can find a way to automate system that would be very great.

INTERVIEWER: Ja I mean all companies they are in different stages of formalising.

INTERVIEWEE: Yes. Ja. But in terms of our supplier chain we were also sort of in that space and I think the decision we have made is that the key focus areas we focus on energy, water and waste. Logistics is what we want our suppliers to.

INTERVIEWEE: Focus on as well because we've got the expertise in the business. Also because we felt that that's what drives costs in the supply chain so if we can figure out a way for our suppliers to reduce the amount of energy they use, we will see a difference in costs of products to customers so we helping our customers as well. So ...

INTERVIEWER: Ja that's a nice drive actually.

INTERVIEWEE: It is a nice drive. If you think about it maize, Maize has gone up by over 200 percent in price I think from 2005 whenever it's gone up. That's a lot it's gone up more in price than a packet of Simba chips. Why? You know but if you look into that supply chain which is something.

INTERVIEWER: The customer won't...?

INTERVIEWEE: In our minds, you could probably find it's a water issue. I'm not saying it is but you'll find maybe it's a water issue. It's a land issue, land use issue. There's an issue there and it's driving the increase in maize and that's a staple food in South Africa, it shouldn't be increasing the way it is. So finding those things within the supplier, that's, that's the space we are moving into now. Finding those key things in different supply chains and say... if you guys actually looked at this, this is how much you could drive down costs in your operational costs. And you know projections like that... but that really works for supplier that we're engaged with very closely, we've seen a lot of progress but then again it's difficult to quantify that. What we can say is that.

INTERVIEWER: It's also difficult to try when you have over 5000 suppliers.

INTERVIEWEE: Yes we do. We have over 5000 suppliers. It's chaotic but we can say is that from when we started doing our environmental survey 50 percent of our suppliers are now setting targets.

INTERVIEWER: Oh brilliant.

INTERVIEWEE: Or 30 percent of our suppliers are now measuring their water they use you know. Ever since... that's the nice thing about the survey because it's done on an annual basis and we sort of track, and we give every single supplier customised feedback. So we say to you, supply x, y, z in 2005, 2009 you are still considering your position of energy, we think you should be doing something around that. This is what we think you should be doing so we give them that individualised feedback. Our suppliers are always open to engage with us and say okay, I'm a very small supplier, how do I get this done? You tell them try doing that, try doing that and so forth but ja that's why we try to do.

We have supply chain incentives, with the better suppliers incentivised or rewarded with a lunch, or press and sometimes improved space on our shelves etc. so that also encourages them to be more sustainable.

Telephonic Interview– Sustainability Head

INTERVIEWER: In general, how Important is data to strategic decision making at CG2?

INTERVIEWEE: Fairly essential. Its obviously really crucial to make any really informed strategic decisions so kind of full analysis of all the factors effecting us from a data perspective are really important.

INTERVIEWER: Do you currently use an integrated dashboard or other data visualization tools or systems in the business?

INTERVIEWEE: Yes, we do.

INTERVIEWER: What drove you start tracking and quantifying sustainability areas?

INTERVIEWEE: I think its been a really important way of trying to integrate sustainability into the way we operate as an organisation and about trying to make something that was in the past a little bit less sort of of numerical or measurable a bit more quantifiable and measureable. The drivers were sort of a collection of factors, internal accountability, reputation and also global reporting requirements. It was important for us because we've set targets for the whole business and each business unit and to be able to set those targets means we've got to be able to measure progress and then integrate this into peoples balanced scorecards.

INTERVIEWER: How did you set those targets? Are they based on regulatory requirements or on internal objectives?

INTERVIEWEE: A little bit of regulatory, I suppose especially on the transformation side that was regulatory in a way, but it was more looking at our internal aspirations plus benchmarking against other retailers and food and beverage companies and clothing brands globally and in South Africa were doing and kind of saying what are the different issues that we think are important, and looking at the GRI and various other sustainable indexes internationally and saying these are the , you know 200 odd things that we actually need to be doing as a business.

INTERVIEWER:200 indicators?

INTERVIEWEE: Ya these are based on the various reporting frameworks and other reporting guidelines we need to use and also the fact that we have a very diverse business between food clothing financial services etc. etc.

INTERVIEWER: Can you tell me a little about the dashboard system you're using to track this?

INTERVIEWEE: it requires individual inputs to measure progress and then really kind of just weights each of the different objectives across the business. we have a kind of scoring kind of scale behind the scenes and it's a fairly convoluted excel spreadsheet I suppose that's been systemized and then kind of pops out a single figure of progress for every business unit and for the business as a whole.

INTERVIEWER: How frequently do you check in on progress?

INTERVIEWEE: we do a full measurement twice a year, it is reported at an EXCO level where we have a review twice year with each business unit on their progress. And also is reported into our holdings board sustainability board committee.

INTERVIEWER: Can you tell me a bit about the so what with regard to how this data is affecting strategic decision making?

INTERVIEWEE: I think obviously having a really clear idea of where we are and where the challenges lie in terms of meeting our objectives at any particular point in time has been really important and that has helped us to prioritize resources and effort over certainly the short and medium term and also has helped us to identify what some of the key challenges are over the long term as well.

INTERVIEWER: can you share some examples?

INTERVIEWEE: without sounding depressing there are many, we've got a lot of challenges obviously in South Africa around water and our supply chain so there's a lot of work in that space a lot around packaging and recycling, a lot around transformation space based on changes around Black Economic Empowerment codes and quite a lot of work around sustainable fibres in clothing as well.

INTERVIEWER: Are there any policies internally that have been created to drive this shift

towards a more sustainable business?

INTERVIEWEE: Ya, quite a lot. There's been a lot around of work around how we as a business deal with certain challenges that arise. And testing the way we doing some things from a process perspective and testing whether they still make sense from a sustainability perspective. We're doing this all the time.

INTERVIEWER: can you explain that a bit more?

INTERVIEWEE: sure, so I guess at a process level you know we have a logistics system, so we take stuff from suppliers to distribution centres then to a store, and then trucks go back. We've got a reverse logistics system in terms of things like plastic and cardboard that get taken out of storerooms and distribution centres for recycling. how can reuse materials and how can we optimize the way all of these different systems work and that's sort of happening across the business all the time in many different discussions on a daily basis.

INTERVIEWER: what is the perception of the driver of all these activities, is it cost saving or with a view of being more sustainable

INTERVIEWEE: I think it's a bit 50/50 sometimes its been approached from an environmental side and had a cost saving benefit and other times its been kind of cost efficiency things that have also had environmental benefits.

Individual business units are sort of responsible for driving these initiatives, because each of our business units have sort of got a set of targets for specific things that they do and then within each unit we have a champion that would be responsible for helping to deliver a lot of these projects, so they would coordinate a lot of the work.

INTERVIEWER: does this get managed through performance management processes, are their incentives to deliver on the more sustainability orientated projects?

INTERVIEWEE: Ya absolutely, the sustainability objectives are part of everyone's balanced scorecard so it absolutely effects their remuneration and bonus.

INTERVIEWER: is there a formal percentage of remuneration associated with this?

INTERVIEWEE: it depends on the role of the individual involved and also on the different business units who have different weighting. But its based on a mixture of both achievement

of overall objectives and also against specific metrics within their balanced scorecard.

INTERVIEWER: who is responsible for capturing the data into this system? is a single person or does every person have access to a dashboard view?

INTERVIEWEE: no we have one or two people within each business unit who are the people with access to the system and who are responsible for inputting progress info.

INTERVIEWER: what is the form of the system they have access to and does it give real time feedback?

INTERVIEWEE: its not a spreadsheet, it is an online web based system.

They then put in feedback for each of their indicators that are an aggregation of their team's data and we can kind of give them pretty much instant feedback in terms of the progress and the scoring.

INTERVIEWER: is there anything anecdotally that you can share that demonstrates how this data is effecting any specific decision?

INTERVIEWEE: I guess probably from sort of early days we've ended up, because we've got such a broad range of indicators we've ended up measuring things that maybe we haven't been looking at things in as much detail as possible. So for instance people on the real estate team who do our stores development and manage the score card, we had a whole thing around gas losses, refrigeration gas losses and it just kind of came out of the fact that percentages were really high so we started digging into more detail and we've got third party providers who do that work for us and then we started renegotiating the targets for processes because the third party providers were actually not doing what they were supposed to. So it does tend to pick up concerns on a broad scale on a lot of detailed issues.

INTERVIEWER: How has the act of looking at these targets or indicators done to you at a business level?

INTERVIEWEE: I think its given us a level of comfort that we are considering and trying to manage the majority of the sustainability issues that our business impacts. So its helping from that perspective and then its also given us a basis to, from both an internal and external reporting perspective have the right information available.

INTERVIEWER: how does this dashboard system contribute to sustainable strategic decision making at CG2 s?

INTERVIEWEE: I think it gives us a really clear view of what we're doing well at and where the kind of challenges are that we need to focus on addressing. And also a kind of 5-year view in terms of the longer term targets that we are working towards. So it creates a good balance of short medium and long term focus for each of our business units.

INTERVIEWER: Is there anything else that you can share with me about how this system is impacting the work you do?

INTERVIEWEE: well this is obviously a very simplistic and general comment but obviously measurement is really crucial in this space. So in the sustainability space there has always been this view that it's the softer side of business so having proper tracking, information and targets in place has been really crucial for us, not just at a broad scale but also, if I look at energy for example, one of our first investments was around an online system that could track energy usage on a real time basis and that's helped us to understand how we drive efficiency across the business on the first side, so we've actually got accurate information available to us and we're not dependent on waiting for a municipality to send us a bill so that's helped us a hell of a lot and also when we've invested in new technology around energy efficiency like refrigeration and lighting and stuff, being able to track the financial benefits or the energy saving benefits immediately through the measurement processes and systems we have means we can prove the business case of each of those investments immediately.

INTERVIEWER: what is your thoughts on some organisations view that sustainability is tackling macro issues and as such is difficult to quantify goals and rather relies on qualitative means of tracking progress or success?

INTERVIEWEE: I think we've moved on from that to be honest. Probably that applies to 5-10 years ago but the level of information and detail that companies are now able to track means that this area is no longer non quantifiable?

INTERVIEWER: do you think that culture contributes towards this shift towards being more analytical and evidence based with regard to sustainability?

INTERVIEWEE: ya I think it probably has from a company culture perspective, both from the

data side and also with sustainability being one of the keys values of the organisation and that goes, where possible, down to the lowest level of our employees. At least we try but it is by no means perfect. But if you go into a store, that store is being measured in terms of their energy and water reductions, their reductions of plastic bag sales etc. so it is trying to drive this as far as possible across the business.

## APPENDIX C: THE PRACTICAL OUTPUT OF THIS RESEARCH

The above research has been a part of a broader exercise that is both theoretical and practical. Part of this exercise has been to explore how theory can be used to inform a practical solution to the problem identified through this research. The business plan below demonstrates how this research can be applied practically, in a local context. This takes the form of a prototype business model, which is a first attempt at outlining a solution to a problem in a way which is tangible enough to receive feedback and get buy-in.

The problem defined in the theoretical component of this research is that companies need to integrate sustainability into their business strategy if they are going to be sustainable in the long-term. The challenge is that, unless the business model is relooked at and the operating processes of the business are adapted to align with this new way of working then sustainability will remain bolted on, creating dependencies between the business and its society and environment in a way which does not create actual value but sits on the periphery, under the CSR umbrella. One solution to this challenge is to provide a service that gives business the guidance they need to succeed in this new sustainability orientated economic environment and provides them with a roadmap, and the tools required to successfully transform their business around creating shared value. This was the departure point for developing the prototype.

In order to successfully design a prototype which solves this challenge there needs to be sufficient research undertaken in order to ensure that the solution is aligned with the market needs.

### THE PRACTICAL RESEARCH

The research for this prototype was undertaken both as part of the theoretical research explored in the previous sections of this document, as well as amongst other organisations and consultants in this field. In addition, the researcher's work in the field of consulting and digital strategy served to supplement the research with insights.

What emerged is that locally South African companies are becoming aware of the need to adapt their business activities in a way which ensures their sustainability in spite of increasing social, environmental and political risk. There is a growing need, as a result of both internal and external factors to integrate sustainability more deeply into the business.

Externally compliance, increased regulations and enhanced requirements for corporate transparency are requiring companies to focus more on how and where they are operating and what the impact of their activities is. These need to be quantifiable and verifiable. In addition, heightened awareness amongst consumers of sustainable corporate behaviour is forcing companies to act more sustainably to ensure their reputation remains positive and credible in the market place. There is a growing requirement, especially amongst younger socially responsible consumers that businesses contribute positively to their communities, societies and environments in which they operate. Companies that are not living up to this and are not tangibly demonstrating this quantifiably have their credibility challenged and their business attacked in public forums which has the potential to increase scrutiny and negatively effect both brand perception and business growth.

Internally, leaders who believe in the legacy they leave behind and who care about the impact their organisation has, both positively and negatively, are transforming the way they are operating. In addition, new operating models that are 'good for business' are being adopted and there is a growing shift towards wanting to create shared value. Business is finding new ways of decreasing their dependence on finite natural resources and adding value to their communities in order to ensure holistic growth. The efficiencies that result from decreasing organisational consumption and reducing negative impact have a positive cost benefit to companies which is serving to drive this sustainable agenda more deeply into organisational culture and activities. To further support this shift towards sustainable business models are the examples that are arising that demonstrate how having a sustainability focus has the potential to drive innovation within the company, and give them a competitive edge within their specific market.

External consulting firms as well as technology companies are leveraging this shift to provide means of enabling organisations to meet the needs created by the new paradigm in which they are operating. However locally no single organisation is providing an integrated solution.

## THE PROTOTYPE

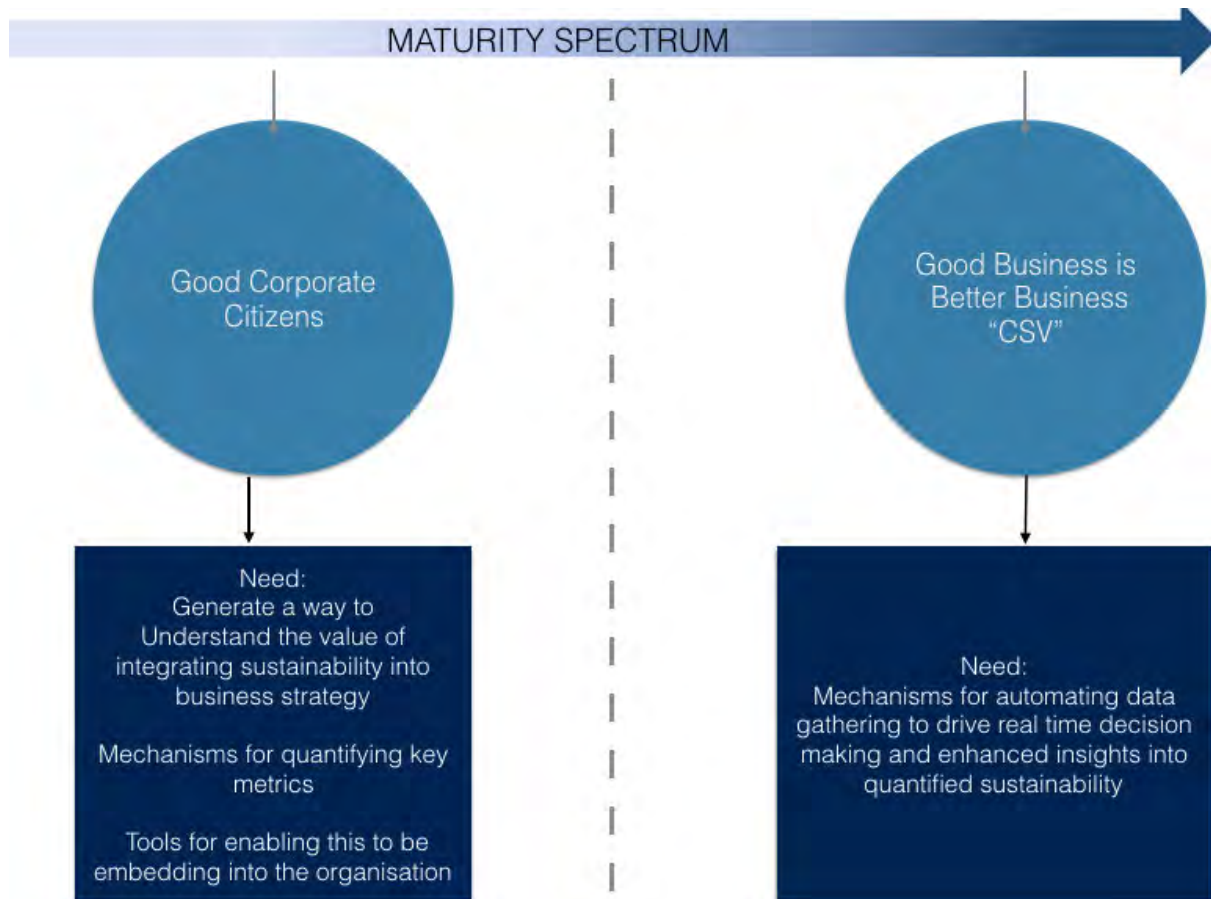
A company built to provide local organisations the strategic and technical support required to facilitate their transition towards creating shared value. The below is based on a framework outlined by Osterwalder, Pigneur, and Clark ( 2010).

The value proposition of this business is that “we help organisations embed sustainability into their core business strategy by understanding areas where sustainability can be integrated into their business model and quantifying these key sustainability metrics and tracking them in real-time with online data dashboards to provide real-time insights for integrated organisational decision-making.”

## CONSUMER INSIGHTS

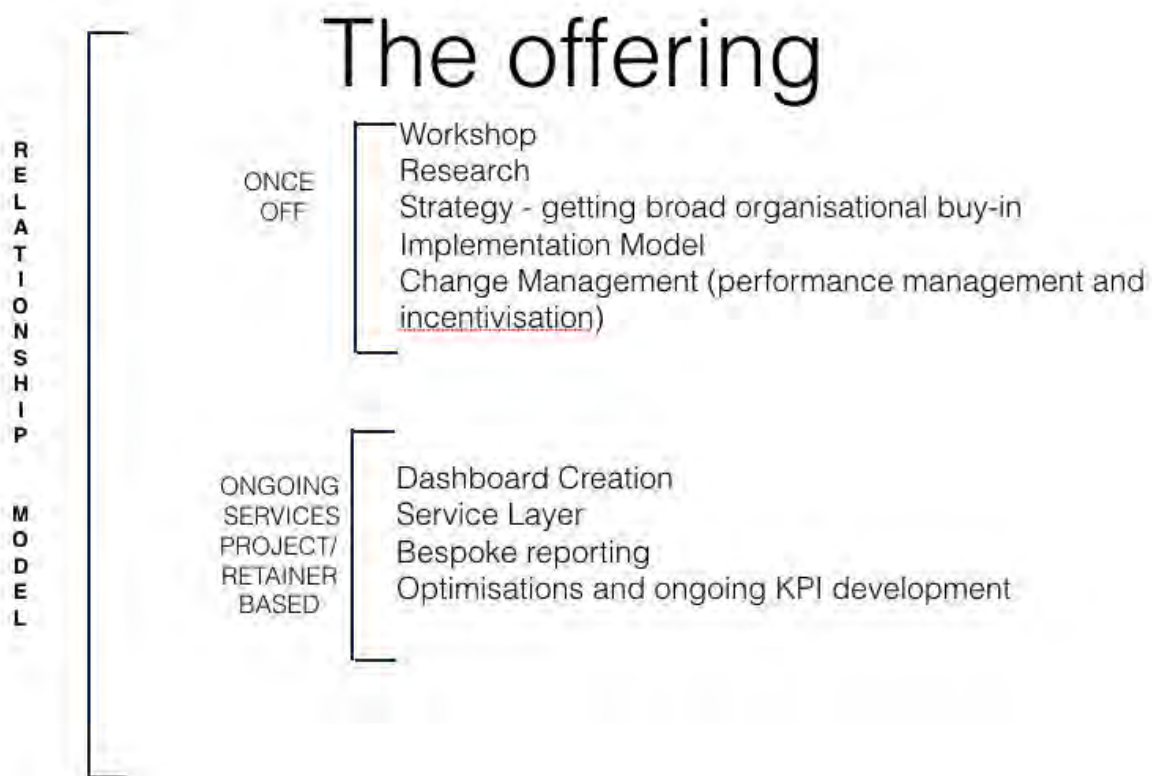
Several consumer insights were generated which informed the design of the business model:

- You can't change what you can't measure
- Organisations are complex with multiple dependencies
- It is difficult to make decisions in real-time to respond to external and internal needs because there is a lag in understanding impacts and effects of decisions
- Systems are able to simplify this complexity through automation
- This automation enables real-time data and insights gathering which leads to real-time insights for strategic decision-making
- companies need to be more focused on the sustainability of the business model
- in order to integrate sustainability into organisations it needs to be quantifiable so that there is a value attributed to an activity and a target
- there is a need for a means of identifying how to create a shared value business model and for tools which enable this to be embedded into the organisation



**FIGURE 17 MATURITY SPECTRUM**

THE BUSINESS MODEL



**FIGURE 18 THE BUSINESS OFFERING**

## THE CUSTOMERS

The ideal customers who would find this target appealing are:

- Organisations whose company values and strategy is geared around becoming more sustainable for various reasons (including long-term cost-saving)
- Existing organisations with leadership wishing to leave a legacy
- Emerging Organisations - Inclusive Business Models and Start-ups who are attempting to embed this thinking from the outset

## KEY RESOURCES

- Developers and Integrators
- Data visualisers
- Platforms (opportunity to become reseller/preferred partner of 2 existing platforms)
- Data Analysts
- Tracking technology partners

- Data-gathering tech implementers

#### KEY CUSTOMER ACQUISITION CHANNELS

- JSE and Sponsors
- C-suite targeted media campaign (through LinkedIn, etc.)
- Public Relations - Roadshows and Conferences.

#### WHY THIS MODEL HAS THE POTENTIAL TO ADD VALUE

- It is a ‘good for business’ model in that it shapes better, more sustainable business
- It is a ‘good for staff’ model in that it contributes to changing mental architecture of the organisation towards a heightened consciousness, giving meaning to the workplace
- It is a model that is holistically beneficial for the environment, society and business
- There is a gap in the market and people are receptive to this: tapping into current zeitgeist

