Sustainable wealth creation in practice: a framework to manage firms' intangibles

Kendra Lyn Wasiluk

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The candidate confirms that the work submitted is his/her own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

This study investigates how firms in the Australian property and construction sector manage their intangibles in order to operationalise sustainable development. Previous research linking intangibles and corporate sustainability has tended to focus on intangibles as a *phenomenon* endeavouring to establish links between intangibles and corporate financial performance. This thesis makes a unique contribution to knowledge by drawing a conceptual bridge between the intangibles and corporate sustainability literature using both the *phenomenon* and *practice* based approach to intangibles. The *practice* based approach aims to understand how firms manage and mobilise their intangibles towards a purpose – which for this research is sustainable development. A key outcome of this study is a framework to manage firms' intangibles which outlines how firms identify, measure/value, control, and report their intangibles at various stages of corporate sustainability.

The research design is a case study methodology, implemented across two phases, using mixed methods. The first phase focused on the *phenomenon* of intangibles in the wider Australian property and construction sector. Data was collected using a questionnaire, semi-structured interviews and content analysis. In the second phase, four case studies of individual firms were conducted to study the *practice* of intangibles.

There were two key findings of this research. The first is that the *practice* based approach to intangibles more accurately reflected how firms in the Australian property and construction sector manage their intangibles. However, tensions still exist between the more traditional accounting-based *phenomenon* approach to intangibles and the *practice* based approach. This is particularly relevant in the business case for sustainability. The second main finding is that firms in the case study sector are actively managing their intangibles to implement organisational change for sustainability. This finding led to the development of the 'inside- out' approach to operationalising sustainable development which focuses on managing a firm's intangibles rather than just its environmental and social performance.

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Publications related to this thesis

Journal papers

Wasiluk, K.L (2013). Beyond eco-efficiency: Understanding CS through the IC practice lens. *Journal of Intellectual Capital,* 14(1), (in print).

Conference papers

Wasiluk, K.L. 2010. Wealth creation in a sustainable world - from conceptual idea to operational reality: A framework to manage firm's intangibles. *In: 3rd World Knowledge Cities World Summit*, *November, Melbourne, Australia*. Office of Knowledge Capital.

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List of Abbreviations

ABS	Australian Bureau of Statistics
API	Australian Property Institute
AREIT	Australian Real Estate Investment Trust
BCS	Business Case for Sustainability
BSC	Balanced Scorecard
CDP	Carbon Disclosure Project
CEO	Chief Executive Officer
CR	Corporate Responsibility
CSR	Corporate Social Responsibility
CS	Corporate Sustainability
DJSI	Dow Jones Sustainability Index
EM	Ecological Modernisation
GAAP	Generally Accepted Accounting Principles
GBCA	Green Building Council of Australia
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GRI	Global Reporting Initiative
HR	Human Resource
HRM	Human Resource Management
IASB	International Accounting Standards Board
IC	Intellectual Capital
IT	Information Technology
KPI	Key Performance Indicator
MERITUM	Measuring Intangibles to Understand and Improve Innovation Management
NABERS	National Australian Built Environment Reporting System
NZ	New Zealand
PCA	Property Council of Australia
PDF	Portable document format
SME	Small to medium enterprise
SD	Sustainable Development
S&P	Standard and Poor
UNPRI	United Nations Principles for Responsible Investment

Most every new idea is going to sound like nonsense to some people
Neale Donald Walsch

1 Introduction and Overview

1.1 Prelude

The original impetus for undertaking this research project was to address a research gap in the built environment literature, identified by Wasiluk and Horne (2009), regarding the business case for sustainable buildings. In many Western countries the business case for sustainability (BCS) has been a common approach used to present to companies the opportunity or benefits of adopting a sustainable approach to their activities (Salzmann et al. 2005; Steger 2006; Carroll and Shabana 2010). In the early to mid-part of the twenty-first century the 'win-win' business case as a means to justify the costs and voluntary uptake sustainability in the built environment sector became a key theme in the academic (Heerwagen 2002; Morton 2002; Hilderson 2004; Lawther et al. 2005; Revell and Blackburn 2007; Sayce et al. 2007; Wilkinson and Reed 2008) and grey literature (Kats 2003; Lucuik 2005; Building Design+Construction 2006; Fullbrook et al. 2006; Davis Langdon Australia 2007; Wasiluk 2007).

Wasiluk and Horne (2009) argued that while an extensive body of literature exists on the business case for a sustainable built environment, little empirical work had been conducted to understand the nonfinancial benefits or value which is attributed to developing, owning, managing and occupying a sustainable building. Their review of the literature found that many of these nonfinancial benefits are claimed to accrue to an organisation's intangibles, such as its human capital (staff), brand, reputation and organisational knowledge. Wasiluk and Horne (2009) proposed that a methodology to measure and link the intangible value to company financial performance was needed in order to improve the BCS in the sector.

As this research project, informed by the earlier research mentioned above, was designed and implemented the concept of intangibles and contemporary research in this field became better understood through the literature review (see Chapter Two) and the first phase of data collection (see Chapter Five). The limitations of ***popular interpretations*** of the intangibles concept and approaches to its investigation in the literature showed themselves quickly (see Chapter Two). It became clear during the course of this research that a **global** or **universal** tool for companies in a particular sector, which measures intangible value and links it to corporate financial performance, is **not the answer** we should be seeking to improve the BCS. Firstly, from a sustainable development perspective, this would only work to reinforce the worldview that needs to be overcome in order to

move business beyond the efficiency stage of corporate sustainability (see Chapter Two). Secondly, there is a small but growing body of researchers in the intangibles literature calling for a more **critical stance** to the study of intangibles as the limitations of the dominant accounting-based or ***phenomenon*** based approach to the identification, measurement and management of intangibles becomes more evident. This ***phenomenon*** based approach, which is primarily driven by the aim of linking intangible value creation to corporate financial performance, is said to have done little more than raise awareness of the concept of intangibles and lead to the development of a plethora of competing tools and frameworks (Mouritsen 2004; Chaharbaghi and Cripps 2006; Mouritsen 2006; O'Donnell et al. 2006; Dumay 2008; Dumay 2009b; Dumay 2009a). The ***practice*** based approach to intangibles, which is primarily driven by the aim of understanding how organisation's manage and mobilise their intangibles towards a purpose, informed the second phase of the data collection. The ***phenomenon*** versus ***practice*** approach to the study of intangibles is outlined in Chapter Two (section 2.2.6). However, key definitions for intangibles as a ***phenomenon*** versus intangibles as a ***practice*** are provided below in section 1.6.2.

1.2 Overview of the study

This thesis is an empirical investigation of the ***phenomenon*** and ***practice*** of intangibles and their role in operationalising sustainable development in business organisations. In order to achieve this aim a mixed methods research design was developed (see Chapter Four) and a case study of the Australian property and construction sector was conducted.

This research is built on the proposition that all business organisations have three vital resources: financial capital, physical assets and intangible resources (see Figure 1.1). This proposition is supported by across a number of disciplines in the literature including the intellectual capital literature (Marr 2008), the economics literature (Neef 1998; Edvinsson 2000; Petty and Guthrie 2000; Powell and Snellman 2004), the strategic management literature (Wernerfelt 1984; Peteraf 1993; Hamel and Prahalad 1994; Barney et al. 2001; Galbreath 2005; Arend 2006; Armstrong and Shimizu 2007; Newbert 2007; Wills-Johnson 2008) and the accounting literature (Canibano et al. 2000).

The scope of this project is focused primarily on the intangible resources of firms (see Figure 1.1). The scope of this study is also limited by the existing socio-economic system in which businesses currently operate. It was determined that the intellectual capital (IC) literature was best suited to define the concept of intangibles for this research. The IC literature is **broader in its identification of the non-monetary, non-tangible resources** in a business organisation than the more accounting based concepts of intangible assets and

goodwill. A more detailed discussion of the concept of intangibles and its definition for this research is found in Chapter Two.

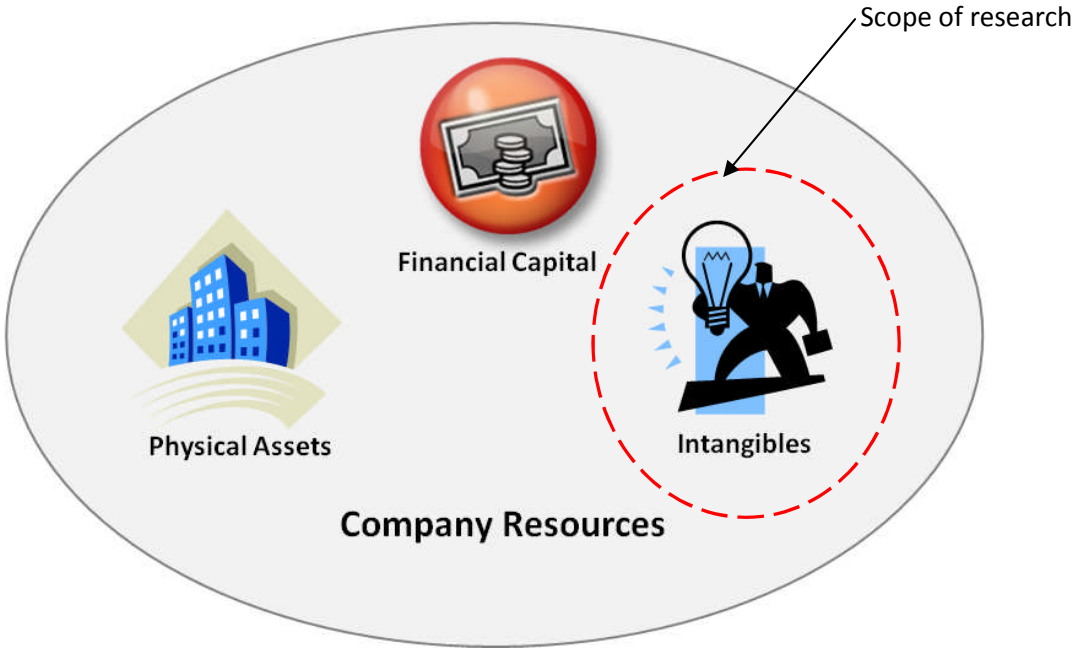


Figure 1.1: Key resources of a business organisation

Acknowledgement is given that all of a company's resources are necessary and important to achieve its intended commercial proposition. However, as will be discussed in this Chapter and the next, improving knowledge about the role of intangibles in a business organisation is an important gap to be filled in the literature on the development and implementation of more sustainable business models. Often conceptual models of sustainable enterprises are based on the notion that a business organisation needs to not only grow and manage its financial capital but also its intangible resources such as human capital, social capital, cultural capital, and natural capital (see, for example, Elkington 2001). Empirical research on firms that are leaders in operationalising sustainable development has concluded that managing and mobilising intangible resources is key in order to not only progress towards a more sustainable business model but to overcome some of the structural barriers in the system in which they operate (see Stubbs and Cocklin 2008b). Additionally many phase models of corporate sustainability require organisations to manage both their tangible and intangible resources in order to drive organisational change for sustainability (see, for example, Dunphy et al. 2007).

The first phase of the data collection focused on investigating the ***phenomenon*** of intangibles in the case study sector and data was collected through a web-based questionnaire, 11 semi-structured interviews and a content analysis of 41 annual reports. The results and analysis of the first phase are primarily presented in Chapter Five. The

second phase of the research, informed by the first, shifts its focus to investigate the ***practice*** of intangibles in the sector, particularly in the context of operationalising sustainable development into practice. It consists of four company case studies: three case studies of publicly-listed companies that are identified sustainability leaders in the sector; and, one privately owned company for contrast and comparison. Data was collected at each firm through a series of interviews (two to five each) and document sources such as the Annual Reports, Sustainability Reports and the company webpage. The results and analysis of the second phase is primarily presented in Chapter Six and Seven.

A second key proposition of this thesis is that intangibles, as mentioned above, play a key role in operationalising sustainable development in a business organisation. The existing literature on sustainable business models and corporate sustainability supports this proposition (see Chapter Two). To this end a framework has been developed and is presented in Chapter Eight. The framework outlines approaches to managing intangibles at the various stages of corporate sustainability, as depicted by Dunphy et al. (2007), companies progress through as they evolve to a more sustainable business model.

This thesis is also framed within the proposition that existing business organisations have the **potential** to make a positive contribution to sustainable development. As discussed above improving knowledge about the role of intangibles in a business organisation is an important gap to be filled in the literature on the development and implementation of more sustainable business models. **This thesis makes a contribution to knowledge by addressing this research gap**. To date the corporate sustainability and intangibles/IC literature has tended to focus on intangibles/IC as a ***phenomenon***. By studying intangibles through the lens of the ***practice*** based approach this thesis develops a conceptual understanding of how firms manage their intangibles to operationalise sustainable development. The next section of this Chapter outlines the aim of this research.

1.3 Research aim

The aim of this thesis is to understand the role of intangibles in operationalising sustainable development into practice in business organisations and in doing so provide a systematic investigation of the intangibles of firms in the Australian property and construction sector as a case study. This research is driven by the identified need (see section 1.5 below) to help existing companies operationalise sustainable development and transition towards business models which are ecologically, socially and financially sustainable.

Applying theory from the strategic management, corporate sustainability and the intellectual capital literature the outcome is a framework to understand how firms identify, measure, value, manage, and report intangibles at the various stages of corporate sustainability. This thesis outlines how the research aim was achieved by:

- Investigating the intangibles of a specific industry sector;
- Understanding them as a phenomenon and a practice; and
- Developing a framework outlining approaches to the identification, measurement, management control and reporting of intangibles at various stages of corporate sustainability.

This research does not intend to provide a 'one-size fits all' approach to the financial valuation of intangibles as it has been demonstrated within this thesis that this is not the best way forward and would only serve to reinforce businesses' current focus on the financial bottom line (see Chapter Two, section 2.4.5). Rather this research adds to the literature by outlining the evolving approaches to managing intangibles in business organisations that are needed in order to secure a sustainable and safe future for the planet and its inhabitants.

1.4 Research questions

The research propositions that have informed how the research has been framed and designed have already been discussed above (see section 1.2) and are summarised below:

P1. Firms in the property and construction sector have an interest in improving their environmental and social performance;
P2. Intangibles are a relevant phenomenon for all organisations, regardless of their current approach and integration sustainable development principles; and
P3. The greater an organisation understands its intangibles the greater its capacity to achieve sustainable development.

These propositions are grounded within the literature review and conceptual framework presented in Chapter Two. In order to address the aim and objectives of this thesis and in light of the research problem and context which initially guided the research (section 1.1), the following three research questions were identified:

RQ1. What are the intangibles of firms in the Australian property and construction sector?
RQ2. How are firms in the Australian property and construction sector managing their intangibles?
RQ3. How does managing intangibles help a firm to evolve towards a more sustainable business model?

As the research project progressed the emerging results suggested there were two approaches to the study of intangibles, the ***phenomenon*** and the ***practice***, which needed to be investigated. The ***phenomenon*** and ***practice*** based approaches to intangibles are defined briefly later in this Chapter (section 1.6.2) and discussed in greater detail in Chapter

Two (section 2.2.6). The empirical research was used to develop a theoretical understanding of the role of intangibles in operationalising sustainable development into a business organisation. An original framework to manage firms' intangibles, based on various stages of corporate sustainability, has been developed and is presented in Chapter Eight (section 8.5). It focuses on the changing approach to managing intangibles adopted by business organisations as they work to create pathways from profit-driven enterprises to sustainability-driven enterprises.

1.5 Research context and justification

A collective concern and aspiration of the world's people for peace, freedom, development and a healthy environment emerged in the post-World War portion of the twentieth century (National Research Council 1999: 22; Kates et al. 2005: 10). As the post-World War quest for economic regeneration evolved into a more general pursuit for sustained economic growth early signs of the modern sustainable development movement began to emerge. While the various threads that make up the sustainable development concept are claimed to be traceable for a number of centuries (Lumley and Armstrong 2004), it was only in the last quarter of the twentieth century when the real synthesis of these ideas emerged (Parrish 2008). Books such as Rachel Carson's *Silent Spring* (Carson 1962) triggered a rise in awareness of the environmental impact of industrial activity, and Erlich's (1968) *Population Bomb* and the Club of Rome's *Limits to Growth* (Meadows et al. 1972) increased awareness of the limits of earth's resources to support unlimited growth and development. These conflicts between the environment and development were formally acknowledged on an international scale at the Stockholm Conference on the Human Environment in 1972 (Kates et al. 2005: 10). Fifteen years later in 1987 the Bruntland Commission popularised the term 'sustainable development' as a way to reconcile the "conflict in some of western society's most deep-seated values and beliefs" (Parrish 2008: 16) about continued economic growth and ecological critiques on the limits to growth. Sustainable development was defined as, "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development (WCED) 1987: 43).

1.5.1 A planet in trouble still in trouble

Despite over two decades of effort since the concept of sustainable development was popularised by the Bruntland Commission the overall situation has not improved (Drexhage and Murphy 2010). Climate change, population, the disparity between the rich and the poor, consumption and more accurately overconsumption are issues which affect sustainable development that continue to persist.

For example emissions of energy related CO_2 in 2010 were the highest in history (Engelman 2012) and Gardner and Prugh (2008: 3) report that atmospheric CO_2 levels are at their highest levels in 650 000 years which has put the Earth on a path towards average temperature levels not experienced for "millions of years" and leaving the Arctic Ocean ice free during the summer as early as 2020. Although the rate of population growth has slowed, overall the total human population of the planet continues to grow. Global population has reached seven billion and is projected to reach nine billion sometime around 2050 (Engelman 2012). The recent Millennium Ecosystem Assessment found that approximately 60% of the world's ecosystems have been degraded and the degradation is anticipated to continue at an increasing rate (Corvalan et al. 2005). In the past five decades consumption of products and services (basic necessities and consumer goods) has increased "sixfold from the $4.9 trillion spent in 1960 (in 2008 dollars)" (Assadourian 2010: 4). Even when population growth is taken to account consumption expenditures per person have still almost tripled (Ibid 2010).

With another two billion people set to join the population in the next 40 years Engleman (2012: 121) argues that "confronting population growth is critical to the future sustainability of the planet". The gap between the rich and the poor continues to grow (Hertz 2001) and Dunphy et al. (2007: 3) add that "never before have so many of the world's people experienced such material wealth and so many others lived in abject poverty." Gardner and Prugh (2008) report that some two and a half billion people still live on two dollars a day or less. This growing inequity combined with a rising population is increasingly recognised as "a prescription for accelerating social decay, political chaos, and terrorism" (Hart and Milstein 2003: 57).

Gray (2006: 799) also argues that the 1972 *Limits to Growth* study is remembered "somewhat inaccurately" for its "alleged predictions of doom" about significant future resource constraints and the potential impact on the quality of (human) life. The problem, he contends, is that the impacts were predicted to take hold in the early part of the 21st century which, to the "sceptical public", "growth-obsessed business community" and "range of affluent societies keen on consumption", seemed far into the future (Ibid 2006: 799). However, updated versions of the original analyses (see Meadows et al. 1992; Meadows et al. 2004) have generally come to similar conclusions - that the planet cannot continue to support business as usual.

1.5.2 Business' role: operationalising sustainability

As the global drive for sustainability (i.e. sustainable development) has gained momentum business organisations have increasingly been challenged to respond to the expectations of "a society alerted to the environmental and social risks associated with economic development" (Galbreath 2009: 304). A key proposition of this research is that business

organisations possess the potential to meaningfully contribute to a sustainable future. While the challenge of global sustainability is "complex, multidimensional, and emergent in character" (Hart and Milstein 2003: 64), there is a general agreement in the business and sustainability literature that if it is to be achieved then business organisations have a crucial role to play (Gore 1992; Bansal 2002; Holliday et al. 2002; Hopwood et al. 2005; Dunphy et al. 2007). Dunphy et al. (2007) argue that the rise of the corporation has been a key contributing factor to the current state of the world and therefore they must be part of the answer. Bansal (2001: 48) boldly states that businesses who do not respond to the challenges of sustainable development will "almost certainly face extinction."

Dyllick and Hockerts (2002: 31) reviewed progress on sustainable development from a global, national, local and firm level and argued that although at a global level progress is "suspiciously absent", progress has been made at the other three levels. They argue that in the mid-1990s it was local authorities who were the most active stakeholders attempting to implement sustainable development, but more recently it is business who has become a major actor. This is likely due to growing external pressures on the company such as legislation and civil society demands coupled with businesses internally identifying the opportunities, such as competitive advantage and cost savings associated with eco-efficiency. However, despite the increase in attention given to the role of business in the transition to sustainable development the response from the business community is critiqued for legitimising an approach based on business as usual only done more eco-efficiently (Ellis and Bastin 2010) and failing to address the larger issues of inequality, sufficiency limits to growth (Young and Tilley 2006; Birkin et al. 2009) and shifting the original Bruntland Commission's agenda of sustainable development from addressing the needs of developing countries to developed ones (Tallontire 2007; Barkemeyer et al. 2011).

1.5.3 Changes 'in the meantime'

The business community faces a number of barriers when committing to operationalising sustainable development including the ambiguous, contentious and conflicting interpretations of the sustainable development construct (Kates et al. 2005; Steger et al. 2007; Drexhage and Murphy 2010; Smith and Sharicz 2011) and the limitations of the neoclassical business model (Stubbs and Cocklin 2008b; Tilley and Young 2009). These are both discussed in greater detail in Chapter Two.

Despite these and other barriers there is a growing evidence of business responding to the challenges of sustainable development. An extensive body of literature exists on the subject of assisting existing companies to understand the benefits of embedding the principles of sustainable development into their operations - or the BCS – and more recently a growing number of tools, frameworks and best practice examples. This again is discussed in general in Chapter Two and more specifically in relation to the case study

sector in Chapter Three. Although the literature on business and sustainable development is said to have has shifted its focus from **WHETHER** to commit to action towards **HOW** to commit (Smith 2003; Maon et al. 2010), there is still a large gap in the empirical data when it comes to understanding sustainable models of business and how companies actually operationalise sustainable development (Birkin et al. 2009). This gap particularly evident in the built environment literature (Glass and Dainty 2011). This thesis argues that managing and mobilising ALL of a firm's intangibles (see Figure 1.2) is critical to operationalising sustainable development into practice. The concept of intangibles and the taxonomy shown in Figure 1.2 below are discussed in greater detail in Chapter Two.

Figure 1.2: Intangibles of a sustainable enterprise, Based on: (Allee 2000)

The next section outlines the rationale for the selection of the case study sector.

1.5.4 The built environment and sustainable development

The built environment plays a role in the "economic and social advancement of society, enhancing both the standard of living and the quality of life" (Ding 2005: 4). However, globally the built environment also has a substantial negative impact on pressing environmental issues, such as climate change, water scarcity and natural resource depletion, across its entire life-cycle (Iyer-Raniga and Wasiluk 2007b). For example, the built environment is said to account for 30 to 50% of material commodity flows, 25 to 40% of final energy consumption and generate about 40% of waste to landfill in OECD countries (OECD 2003). In Australia building materials alone account for 54 mega tonnes of greenhouse gas emissions per year, or 12% of Australia's total emissions (Department of Environment And Heritage 2006). From a social sustainability perspective the built

environment can positively or negatively impact the social cohesion of the local community and the health and quality of life of its residents (Cuthill 2010; Dempsey et al. 2011).

There is a consensus in the literature that globally the property and construction industry needs to improve its environmental and social performance in order to ensure a sustainable future for humanity and the planet (see Hill and Bowen 1997; Barrett et al. 1999; Cole 1999; Lockwood 2006). Globally, however, the property and construction industry is often claimed to be an uncaring and profit-motivated destroyer of the environment (Kein et al. 1999). While there may be some truth to this claim, the property and construction industry in most developed countries has locked itself into a competitive strategy which is based upon competitive advantage through cost leadership (Porter 1980; Price 2003; Price and Newson 2003) and maximising shareholders' returns (Jones et al. 2009). This, like in many other industry sectors, means that environmental performance and financial performance are often pitted against each other and a strong 'business case' for sustainability is needed to justify a sustainable approach. The BCS, underpinned by ecological modernisation (EM) theory, is discussed in greater detail in Chapter Two (section 2.4.4).

Pearce (2005: 481) believes that the property and construction industry "can be forgiven if it struggles to take sustainable development, or sustainability, on board since there is a shortage of sound guidance on just what the concept means [for property and construction] and what the industry would have to do to achieve it." Glass and Dainty (2011) note that although the trend in the corporate sustainability literature has shifted from strategy and the business case to organisational change and embedding sustainability within companies, research in the built environment sector still tends to focus narrowly on the products (i.e. building or construction material) and/or the performance of the product.

The Australian property and construction sector was identified as an ideal case study for this research and the detailed rationale for this sector is discussed in Chapter Three. For the property and construction sector the aims of sustainable development have been translated into a growing movement to improve the efficiency building performance, while minimising negative environmental impacts associated with the various stages of a building across its life-cycle (i.e. design, construction, operation, demolition, and refurbishment). In Australia, a number of indicators and metrics exist to benchmark the greenness or sustainability of individual buildings and its components parts (Crawley and Aho 1999; Iyer-Raniga and Wasiluk 2007a). Just as with other rating tools, such as corporate social responsibility (CSR) ratings (Chatterji and Levine 2006; Porter and Kramer 2006), the current profusion of rating tools, checklists and eco-labels only adds to firms' confusion how to operationalise sustainable development in practice (Iyer-Raniga and Wasiluk 2007a). Additionally, as mentioned earlier (see section 1.1), there continues to be an active discourse in the sector justifying **why** a sustainable approach should be taken and a lack of

research focus on embedding sustainability into all the strategic levels and functions of a business organisation (Glass and Dainty 2011). These factors combined make the property and construction sector a topical case study and present an opportunity for this research to fill this gap in knowledge.

1.6 Key definitions

Some of the key concepts used throughout this study, not least in the title and research questions, require further elaboration to aid the reader and help clarify the precise scope of the study.

1.6.1 Sustainable wealth creation

Figge and Hahn (2004) use the terms sustainable wealth creation or sustainable value added to represent a measure of an organisation's (micro) contribution to sustainability at a national (macro) level. Figge and Hahn's (2004; 2005) methodology uses an opportunity cost approach, which is dominant in traditional financial markets, to calculate an organisation's contribution in monetary figures. This thesis does not intend to contribute to this body of literature. While it is important to investigate and establish the actual impact of the strategies implemented by an organisation, it is beyond the scope of this research to do so.

The focus of this thesis is on how companies are embedding sustainability into all of the levels and activities of their organisations in order to create a more sustainable business model. Sustainable wealth, in this context, is created when organisations embed sustainability into their business model and as a result create wealth for the firm as well as "for stakeholders previously marginalised by corporations" (Laszlo 2008: 119). Hart and Milstein (2003: 57) adopt a similar view that a firm creates sustainable wealth when it "simultaneously" creates value for shareholders and stakeholders by implementing "strategies and practices" that contribute to the creation of a more sustainable world. Porter and Kramer (2011: 6) refer to sustainable wealth as "shared value". Accenture and the Committee Encouraging Corporate Philanthropy (CECP) (2011: 28) argue that sustainable wealth is only created when corporate initiatives or strategies are "profitable in addition to beneficial to society." The benefits to society can be environmental or social while the benefits to the business organisation need to "demonstrate a link to profitability over the long term" (Ibid 2011: 28). The links to profitability in the long term can be through direct financial links (such as increased revenues and reduced costs) or indirect links (such as building intangibles and reducing risk). The definition of sustainable wealth creation that has been adopted for use in this study is:

Sustainable wealth creation:	The process of creating business value while simultaneously creating value for stakeholders (incl. the natural environment) as a result of implementing strategies to achieve corporate sustainability.

The title of this thesis – *sustainable wealth creation in practice: a framework to manage firms' intangibles* – signifies that the scope of this thesis is focused on investigating the role of firms' intangibles in implementing sustainable development into business models in order to create sustainable wealth.

1.6.2 Intangibles as a phenomenon versus intangibles as a practice

The study of intangibles as a ***phenomenon*** is the most common and prolific approach to the study of intangibles (Dumay 2009a). It is based on the premise that the intangibles of a firm are connected to financial value and value creation in an organisation in a fundamental way (Mouritsen 2006). The ***phenomenon*** based approach sees researchers focus on developing global or universal frameworks for identifying, measuring and reporting intangibles. The study of intangibles as a ***practice*** is a contemporary critique of the intangibles theory and adopts the perspective that there is "no fundamental formula to understand the role of [intangibles] in organisations and society" (Ibid, 2006: 823). The ***practice*** based approach advocates developing a deeper understanding of how organisations' manage and mobilise their intangibles to achieve their goals. These two approaches have been used in the research design (see Chapter Four) and their relevance to operationalising sustainable development into practice is discussed in greater detail in Chapter Two.

1.7 Thesis outline

To answer the research questions outlined in section 1.4 this thesis is organised into nine Chapters. This first Chapter (One) provides an overview of the study outlining the research problem that has been investigated, the aim and scope of the research, the research context and the research questions to be answered within the thesis.

Chapter Two provides the relevant background information on the concept of intangibles and a discussion of the ***phenomenon*** versus ***practice*** approach to intangibles. This is followed by a review of relevant empirical studies in the literature to understand the identification, measurement and management of intangibles. It proceeds to discuss the relevant background literature to understand the concepts of corporate sustainability and its implementation in a business context. The conceptual bridge between these two primary fields of knowledge, corporate sustainability and intangibles, is then constructed and the conceptual framework is developed which is used to inform the data collection and analysis in the remainder of the thesis.

Chapter Three provides the background information about the case study sector – the Australian property and construction sector - along with a discussion of the previous studies empirical work and gaps in knowledge regarding the concept of intangibles for this sector.

Chapter Four presents the research methodology for this thesis and discusses in detail the research design and how the data collection methods address both the investigation of the ***phenomenon*** of intangibles and the ***practice*** of intangibles in firms within the case study sector. The limitations of the research design are also discussed.

Chapter Five presents the result and analysis of the data collected from across the wider Australian property and construction sector and focuses on the ***phenomenon*** of intangibles. It discusses key themes from the literature regarding the identification, importance and reporting of intangibles and establishes that the intellectual capital approach to identifying the ***phenomenon*** of intangibles is relevant for the case study sector.

Chapter Six introduces the four company case studies and presents the results and analysis of the data collected relating to them, primarily focusing on how these firms currently manage their intangibles.

Chapter Seven presents the results and analysis of data collected for the four case study firms specifically in relation to how they align and mobilise their intangibles in order to operationalise sustainable development. The Chapter is particularly focused on their journey through the efficiency and strategic proactivity phases of corporate sustainability.

Chapter Eight draws together the results and analysis presented in Chapter Five, Six, and Seven and is where the discussion of the main empirical findings of this thesis is located. The framework to manage firms' intangibles is also presented in Chapter Eight.

Chapter Nine concludes this thesis by reflecting on the extent to which the study has resolved the research questions, its primary contributions to knowledge and identifies areas of future research along with the limitations of this study.

1.8 Summary

This Chapter gave an overview of this research study presented in this thesis. It outlined the research problem that has been investigated, the aim and scope of the research, the research context and the research questions to be answered within the thesis. The next Chapter (Two) provides the relevant background literature to understand the concepts of intangibles and corporate sustainability. Chapter Two also draws the conceptual bridge between operationalising sustainable development in a business context and the ***phenomenon*** and ***practice*** of intangibles.

"There are those who look at things the way they are and ask, why?...I dream of things that never were and ask, Why not?"

Robert F. Kennedy

2 Intangibles and Sustainable Development

This Chapter discusses the literature of specific relevance to the topic of this thesis. It also positions the study in relation to the current state of knowledge on intangibles and sustainable development in a business context. This Chapter is split into two parts - A and B. Part A outlines the key background literature on the study of intangibles including the concept of the knowledge economy, various interpretations of the term intangibles in a business context, the difference between the ***phenomenon*** and ***practice*** based approaches to intangibles. Part B outlines the key background literature on sustainable development and in particular focuses on the relevant theories and practices of sustainable development in a business context. It also defines the key terms/concepts of this thesis including corporate sustainability, the triple bottom line, eco-liberalism and business model. Throughout the discussion in Part B a conceptual bridge is drawn between operationalising sustainable development in business and intangibles/IC. Section B concludes with the development of key aspects and assumption which underpin the development the theoretical framework.

PART A: INTANGIBLES

2.1 Background: The knowledge-based economy

> *"In the industrial age of the 20th century, the dominant ingredients in production were tangible ones such as capital, labour and natural resources. But as we move into the new century, it is increasingly the intangible factors that matter most as new sources of growth potential, such as knowledge, information, and cultural character."* (APEC Economic Committee 2000: 1)

There is a general agreement in the economic literature that a shift has occurred regarding the nature of the economy and the drivers of wealth creation from one which relies on physical capital and manual labour to one with relies on knowledge and innovation – or a transition from the industrial era to the knowledge era (Powell and Snellman 2004). Termed the *knowledge-based economy* it is defined as an economy which is "directly based on the production, distribution and use of knowledge and information" (OECD 1996: 7). An continual increase in the "*knowledge intensity* of economic activities and the increasing *globalisation* of economic affairs" are two of the defining forces driving the emergence of

the knowledge economy (Houghton and Sheehan 2000). Additionally the wealth of developed nations is increasingly held within its intangible capital. For example, a comprehensive study of the wealth accounts of nations (published in the World Bank's *Where is the Wealth of Nations*) found that at the macro-economic scale intangible capital, and in particular human capital, accounts for approximately 80 percent of a developed nation's wealth (Hamilton et al. 2005).

The knowledge economy is said to be the latest stage of development in global economic restructuring from an agricultural economy to an industrial economy to post-industrial/mass-production economy to the knowledge economy (Drucker 1969; Drucker 1993). An in-depth discussion on the development and characteristics of the knowledge-based economy is not provided in this thesis. However, Neef (1998) provides a helpful introduction to and background of the knowledge-based economy and Houghton and Sheenan (2000) provide a succinct summary of its major features and implications for the Australian context. It is also beyond the scope of this thesis to comprehensively document the changes in economic theory and the global economy which have led to an increasing emphasis on knowledge as a key factor in economic growth, however, Sabau (2010) provides an excellent review. Key points regarding the knowledge-based economy concept which are relevant for this thesis are outlined below.

2.1.1 More than just information technology

Initially literature on the knowledge-based economy focused on the growth of high technology industries (such as IT) and innovations in technology (ICT) as the source of the paradigm shift in economic growth (Lundvall and Foray 1996). However the literature now recognises that all industries in the economy can be knowledge intensive including so-called old economy industries like mining and agriculture (Houghton and Sheehan 2000; ABS 2002). Smith (2000) also debates the knowledge economy concept by pointing out that previous economies and human societies have been knowledge intensive, not just the current forms. For example, he argues, evidence exists that Palaeolithic societies had well-formed bodies of knowledge about animal behaviour, pyrotechnology, symbolic communication, the aerodynamic properties of weapons, cosmology and medicine and the 19th century industrial economy was intensively knowledge-based. Thorsgaard et al. (1999: 15) , however, make the distinction that in the current knowledge era "knowledge is a core interest of management". While both Lundvall and Foray (1996) and Smith (2000) agree that the ICT revolution (and hence increased technological knowledge) and the contemporary knowledge economy are strongly interrelated, the Asia-Pacific Economic Cooperation (APEC) Economic Committee state that the knowledge required by the contemporary knowledge-based society is "wider than purely technological knowledge" and includes "cultural, social and managerial knowledge" (APEC Economic Committee 2000:

2). Another "major novel characteristic" of the contemporary knowledge economy according to Yigitcanlar (2010: 2) is the imposition it places on organisations to manage their intangibles.

2.1.2 An increased interest in the study of intangibles

Also labelled the *service-based economy* (Cordazzo 2005 442), and/or the transition from the *old* (industrial) to *new* (knowledge) *economy* (Petty and Guthrie 2000; Bose and Thomas 2007: 653) this paradigm shift to the contemporary knowledge economy has spurred growing interest from academia, business and government to "identify new methodologies to determine a company's value and to understand the features of value creation" (Pedrini 2007: 346). In fact, the subject of intangibles is addressed across numerous disciplines, including "accountancy, information technology, sociology, psychology, human resources management (HRM), training and development and management research" (Andriessen 2004b: 56). Kaufmann and Schneider (2004) and Johanson et al. (2001) agree adding that interest in the study of intangibles grew rapidly in the latter part of the 1990s and early part of the 21st century, particularly in the fields of economics, accounting and strategic management.

Although intangibles are said to have been present in organisations before the knowledge-based economy concept (Serenko and Bontis 2004), it was the work of Karl-Erik Sveiby in Northern Europe and Scandinavia (Sveiby and Risling 1986) and two articles by Stewart (1991; 1994) which were catalysts to the development of new approaches to explain, measure and manage these hidden assets (see for example Housel and Kanavsky 1995; Kaplan and Norton 1996; Edvinsson and Malone 1997; Lev 1997; Stewart 1997; Sveiby 1997b; Bontis et al. 1999; Allee 2008).

2.1.3 Resource-based view of firm

The growing interest in the study of intangibles was also bolstered by the field of strategy and strategic management. Wernerfelt (1984) first used the phrase *resource-based view of the firm* to explain the growing limitations of Porterian theories of competitive strategy (Pike et al. 2006). A key proposition of Porter's (1980) theories is that sustained competitive advantage and superior profitability is as a result of how a firm positions itself against the industry structure in which it competes (the five forces model). In contrast, the resource based view (RBV) looks from the "inside-out" (Henry 2008:126) focusing inwardly on the firm's resources and capabilities to explain profitability and sustained competitive advantage (Penrose 1959; Wernerfelt 1984; Barney 1991; Grant 1991; Peteraf 1993; Wernerfelt 1995; Barney et al. 2001). The RBV posits that it is a firm's "intangible assets" that give it a competitive advantage and are a "critical driver" (Bose and Thomas 2007: 653) for the business's long-term success (Bontis 2001).

This tension between the internal resources of an organisation versus the larger system in which it competes has driven the theoretical and methodological development of the field of strategic management since the 1960s (Hoskisson et al. 1999). Hoskisson et al. (1999) argue that the field's development since its inception has swung from the firms internal resources as a focus (inside) to the external industry structure and competitive position (outside) and back again, as depicted in the various swings of a pendulum (See Figure 2.1).

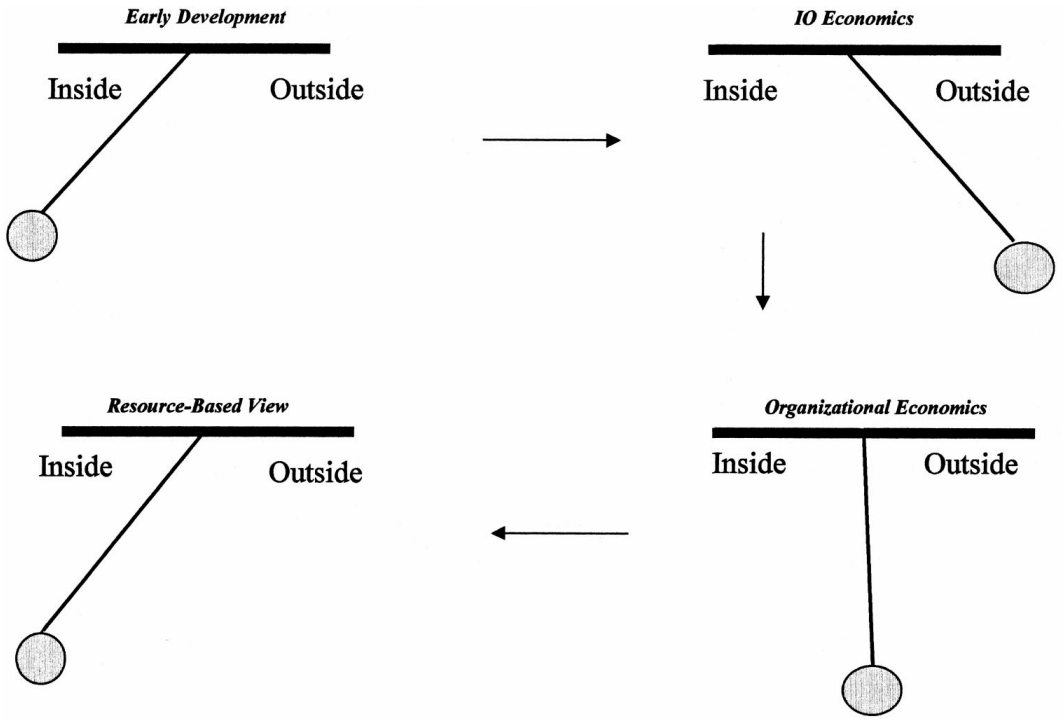


Figure 2.1: Theoretical & Methodological Evolution in Strategic Management
Source: (Hoskisson et al. 1999: 421)

The RBV has become "one of the most influential and cited theories in the history of management theorizing" (Kraaijenbrink et al. 2010: 350). While there are critics and champions of the RBV (for a detailed review see Kraaijenbrink et al. 2010), Amit and Schoemaker (1993) argue that the RBV approach should be seen as a complement to the industry positioning school. Kaplan and Norton (2004b: 10) somewhat agree arguing that when a firm is formulating and executing its business strategies – i.e. how it intends to compete in the market - they must "explicitly address" the "mobilisation and alignment" of their intangible resources. Contextualising this argument to this research project means that when a firm develops a sustainable development related strategy it must also address how it will mobilise and align its intangibles to implement the strategy. In fact, mobilising and aligning the intangible resources of firms was a key first stage in the implementation of the sustainable development strategies for the case study firms in this research project. This is discussed in Chapter Six and Seven. Pike et al. (2006: 236) also note that

"development of a firm is constrained to an extent by the nature and qualities of its intangible resources. This point is also important when it comes to firms operationalising sustainable development into practice. It is a proposition of this research that a business organisation can be limited in its ability to operationalise sustainable development based upon more than just financial barriers, but also its ability to mobilise its intangible resources.

2.1.4 Summary

The previous four sections have provided the necessary background to this study regarding the knowledge-based economy and an increased focus on the phenomenon of intangibles. A result of the growing interest in the study of intangibles was the creation of a "collection of concepts and phrases", such as immaterial assets, knowledge-based assets, tacit knowledge, intangible assets and intellectual capital, to support this new perspective (Andriessen 2004b: 2). As outlined in Chapter One this aim of this thesis is to fill a gap in knowledge about the role of intangibles in operationalising sustainable development into an organisation's business model. It is therefore necessary to undertake a discussion of the relevant definitions of intangibles in a business context and the one adopted for this research. This is the focus of the next section.

2.2 Defining intangibles in a business context

In a business context the term 'intangible' suffers a similar fate as the term sustainable development (see section 2.3.2). There are multiple interpretations, definitions of intangibles are often contested and generally vary based on the academic discipline or background of the person using the term (Canibano et al. 2000; Kaufmann and Schneider 2004; Pike et al. 2006; Kristandl and Bontis 2007; Dumay 2008). For example, when referred to by a financial accountant the definition generally refers to intangible assets reported on the company balance sheet (Canibano et al. 2000) versus when used by a manager in a strategic sense when it often refers to the nonfinancial, immaterial resources of a company which help sustain its competitive advantage (see Galbreath 2005). Even within the same discipline definitions of intangibles vary and can be influenced based upon the application of the concept for example whether it is being used for measurement, reporting, functional, or analytical purposes (Petty and Guthrie 2000; Bonfour 2003; Commission of the European Communities 2003; Tan et al. 2008).

Kaufmann and Schneider's (2004:371) review of the literature on intangibles found that "a large amount of competing terminology exists [and] no consensus on one set of terms and definitions." Often terms such as intellectual capital (IC), knowledge assets, intangible assets and goodwill are used interchangeably (Pike et al. 2006; Choong 2008; Kujansivu 2008), however, there are some key distinctions to be made between these terms. Some of

the key distinctions are outlined below but for a detailed review please see Petty (2000) and Andriessen (2004b).

The terms *intangible asset* and *goodwill* stem from the field of financial accounting and are generally found on the company balance sheet. Goodwill typically represents the premium paid for an acquired company "over the value of its net tangible assets" and intangible assets are the "non-physical and non-monetary sources of **probable** economic profits" (Canibano et al. 2000:105). Both are recorded on a company's balance sheet and their use and application in financial accounting are generally governed by international and national accounting standards bodies (Wyatt 2005). Andriessen (2004b: 58) argues that the "valuation community and some members of the performance management community" such as Kaplan and Norton (1996; 2001) also use the intangible assets terminology.

The terms goodwill and intangible assets were discounted for use during the data collection phases (see Chapter Four) of this thesis as these two concepts are well-defined in the accounting literature and often carry strong associations to financial accounting practice (Andriessen 2004b). It is not within the scope of this research project to investigate which intangible assets should be included on the company balance sheet, nor understand financial premiums in company takeovers – although both could be interesting areas of future research relevant to the development of sustainable business models. For example, through addressing the many voices critiquing the growing irrelevance and reliability of company financial statements (Healy et al. 2002; Kanodia et al. 2004; Gray 2006) and creating "new words and numbers" to express that which is "ultimately of value" to humanity and the planet (Emerson 2003: 40). Canibano et al. (2000) highlight that relevance and reliability are also the current focus of many accounting standard setting bodies. A working paper has also recently been published by the Australian Productivity Commission on the role of intangibles in the Australian economy, which addresses their accounting disclosure (Barnes and McClure 2009).

The term *intellectual capital*, often referred to as IC or IC/intangibles in the literature, is an interdisciplinary construction (O'Donnell et al. 2006) which has been influenced by the fields of management, strategy and accounting (Dumay 2008). The term intellectual capital refers to a firm's "nonmonetary sources of wealth creation" (Andriessen 2004b: 62). The IC construct is **broader in its identification of the nonmonetary sources of wealth creation** than intangible assets or goodwill. For example, intangible assets, in the accounting sense, only include the nonmonetary source of wealth creation which a company has sufficient control over the expected future economic benefit (Wyatt 2005). For example intellectual property (IP) is considered to meet this condition whereas employee knowledge or customer relationships do not because firms do not have sufficient control over the expected probable economic benefits from these resources (Andriessen 2004b).

Based on the discussion above and in order to answer the research questions (see section 1.4) the definition of intangibles adopted for this thesis is grounded in the IC theory and literature. The next section of this Chapter outlines the relevant literature on IC and discusses how it has informed the definition of intangibles for this research and the limitations of this definition.

2.2.1 Intellectual capital

Previous reviews of the IC literature makes it clear that there is no one correct or universally accepted definition for IC (see Brennan and Connell 2000; Petty and Guthrie 2000; Kaufmann and Schneider 2004; Tan et al. 2008). Andriessen (2004b: 60) states that all of the various definitions have a tendency to fall into three main groups: those who limit their definition to strictly individual knowledge resources; those who include additional knowledge resources such as organisational technology, trademarks and patents; and finally those who "look beyond the brain" and include all of an organisation's nonfinancial resources which enable the company to function.

Choong (2008) concluded that a classification approach rather than a definition approach is the best way to define IC in light of the lack of agreement amongst scholars. Kristandl and Bontis (2007) agree that in the absence of an agreed upon definition, many researchers rely upon categories of IC to describe it, but they disagree with Choong (2008) that this is the best way forward. They argue that researchers are missing the point and that by doing this it is like "asking 'what is a car?' and giving the answer 'sedans, convertibles, off-roaders, limousines and vans" (Kristandl and Bontis 2007: 1511).

While these limitations exist within the IC literature, the categorisation approach was deemed as the best available and most widely used practice for defining IC available for the purpose of this research. Additionally it is expected that the definitions of IC in the literature which define it as more than simply the brainpower of an organisation are better suited to describe the intangibles of a sustainable enterprise discussed in later sections of this Chapter (see section 2.5).

2.2.2 IC classification systems

Similar to definitions of IC a wide-range of categories, taxonomies and groupings of intangibles exists in the literature (for detailed reviews see Kaufmann and Schneider 2004; Dienfenbach 2006; Beattie and Thomson 2007; Tan et al. 2008). Andriessen (2004b) provides an overview of some of the more widely-used IC classification frameworks and these are illustrated in Figure 2.2 on the next page.

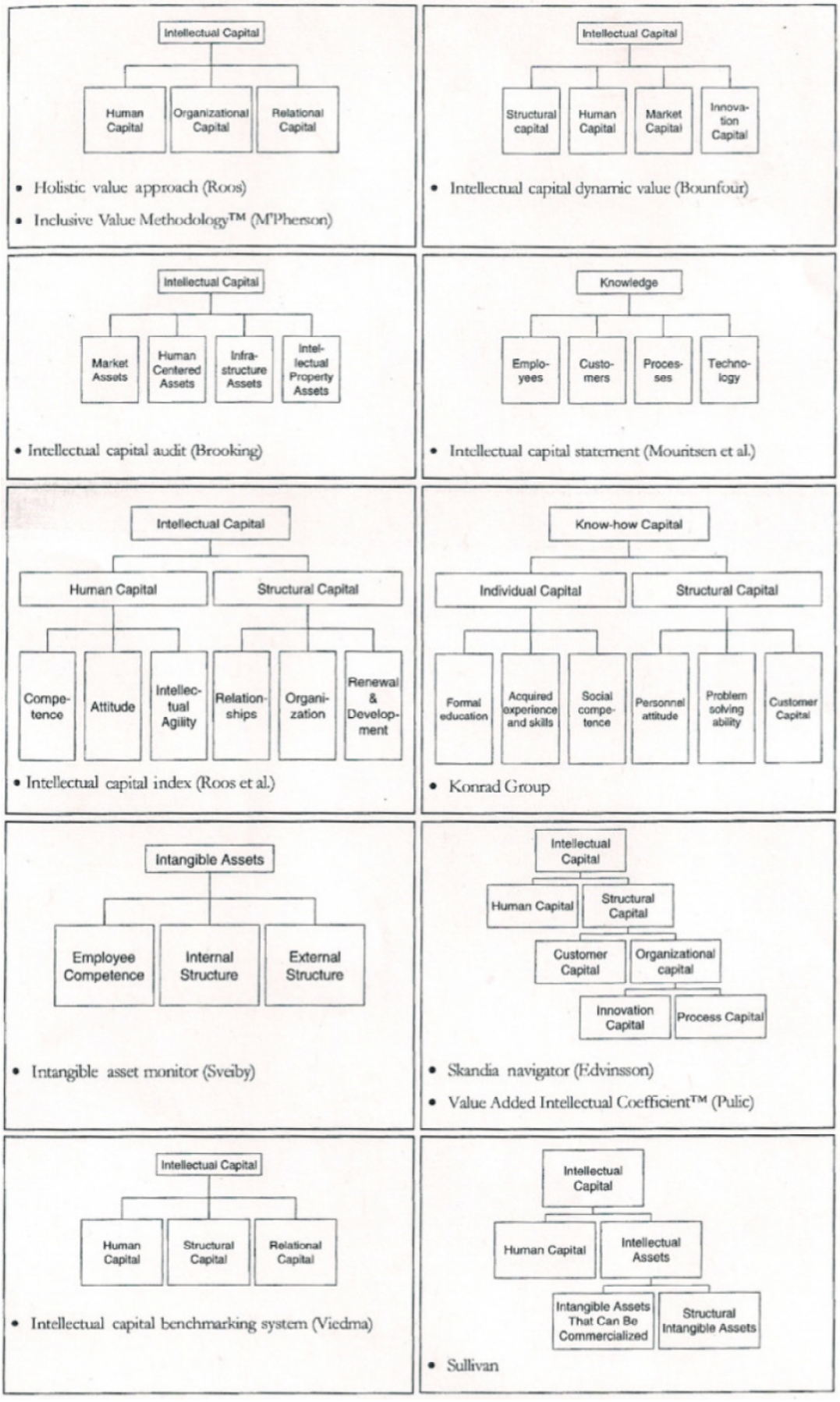


Figure 2.2: IC Classifications, Source: (Andriessen 2004b: 61)

While some argue that more work needs to be done to develop a global taxonomy or classification system (Marr and Chatzkel 2004), a growing number of researchers in the IC literature, particularly those who align themselves with a critical management studies approach, argue that this is neither possible nor necessary. This is discussed in greater detail in section 2.2.5. Pike et al. (2006) argue that as long as the researcher or practitioner adequately defines the terms they use then adhering to one standard taxonomy is not necessary. Marr (2008: 5) also agrees with this argument stating "it is important to stress that there is no generally right or wrong way to classify IC." Edvinsson's (1997) taxonomy which include three categories - human, relational and structural capital – is said to be the **most influential and widely applied** (Kaufmann and Schneider 2004; Marr 2008) and has been depicted in Figure 2.3. These are also the categories which were agreed upon in the European Union's MERITUM[1] project and published in their guidelines for reporting and measuring intangibles (MERITUM 2001). Based on these two observations **the categories of human, structural and relational capital were adopted to inform the research design and data collection in this thesis** (see Chapter Four). Definitions for each of these categories are outlined in Table 2.1 below.

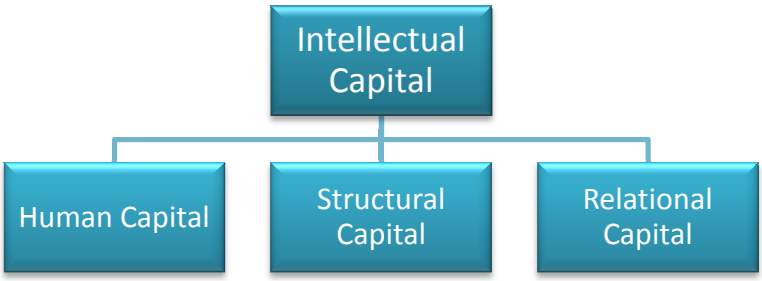


Figure 2.3: IC categories for Phase One data collection, Based on: (Edvinsson 1997: 369)

Category	Definition
Human Capital	Comprises the knowledge that employees take with them when they leave the firm. Includes the skills and competencies of employees; their know-how in fields that are important to the success of the firm; and their attitude and aptitude (i.e. loyalty, innovation, flexibility)
Structural Capital	Comprises the knowledge that stays with the firm at the end of the day, such as firms' organisational routines, procedures, systems, cultures, databases, information flows, leadership and management style
Relational Capital	Comprises all the resources linked to the external relationships (formal and informal) between the firm and outside persons or organisations. This can include customers, suppliers, partners, communities, pressure groups, regulators and investors. Brand, image, corporate reputation etc. fall into this category

Table 2.1: IC taxonomy and associated definitions (MERITUM 2002: 11)

[1] Measuring Intangibles to Understand and Improve Innovation Management

2.2.3 Limitation of the IC terminology

While the IC literature and its interpretation of intangibles form the basis of the research design and data collection a potential limitation of using the term intellectual capital during the data collection was identified in previous empirical studies in the literature. Intellectual capital is often confused by practitioners as intellectual property, which is just a small subset of a firm's IC. Pike et al. (2006) and Andriessen (2004b) suggest the use of the term **intangible resources** is a suitable alternative to the term intellectual capital. The term **intangible resources** does not have the distinct accounting meaning that **intangible assets** has, they both argue, and also avoids the use of the word 'capital' and 'intellectual' – both of which can have undesirable connotations and limitations. Using the term intellectual focuses only on the knowledge portion of intellectual capital and the term capital assumes ownership and the ability of an organisation to accumulate and control the resource exists (Allee 2000; Andriessen 2004b). Allee (2000: 20) also argues that the term capital is too limited in its connotation "to fit the intangible nature of the subject under investigation." The term capital, she argues, is limited by traditional interpretations of IC as something to be "accumulated, controlled, and stored" (Ibid 2000: 20).

The term intangibles and intangible resources were elected to be used during the course of this research project and were often used interchangeably. For the remainder of this thesis the term intangibles/IC will be used – as an indication that the intellectual capital domain of the intangibles literature is being referred to. This is common practice in the literature on intellectual capital.

2.2.4 Measurement, reporting and management of intangibles/IC

Beyond the identification and definition of intangibles/IC discussed above the primary focus of the literature in this field is in two key areas – **measurement and reporting** and **managing** intangibles. A review of the intangibles/IC literature from 1997 to 2003 found measurement and reporting to be the dominant focus of the literature (Kaufmann and Schneider 2004) whereas a more recent review of just over 400 publications from the period of 2000 to 2010 by Guthrie et al. (2012) found the majority of articles focused on management control/strategy and external reporting. Previous literature on the measurement, reporting and management of intangibles is discussed in greater detail in section 2.6.1, specifically in relation to the focus of this thesis - operationalising sustainable development in a business context.

What is important to note here is Chatzkel's (2004) observation that the intangibles/IC field has reached a crossroads of legitimacy. Dumay (2009b) agrees and adds that the past 20 years of intangibles/IC research and related management practice have concentrated on establishing definitions, measures and a plethora of frameworks which have primarily served to raise awareness of the ***phenomenon*** of intangibles/IC. Dumay and Rooney (2011)

also argue that intangibles/IC researchers who continue to focus on developing universal or global frameworks to identify and manage intangibles/IC are doing little to add to our understanding of it. The key to moving through this crossroads, Chatzkel (2004: 337) argues, requires the intangibles/IC research community and practitioners to demonstrate "the relevance of" intangibles/IC "as a working discipline that is useful to organisations". Otherwise the notion of intangibles/IC and "all it stands for will be seen as merely one more set of very interesting ideas that is continuingly elusive to grasp and use" (Ibid 2004: 337).

The next section of this Chapter discusses in further detail the emerging cluster of intangibles/IC researchers responding to this critique of the intangibles/IC field. This then leads into an introduction to and overview of the ***phenomenon*** versus ***practice*** based approaches to the study of intangibles/IC developed to address limitations in this field of study.

2.2.5 Intangibles/IC: A more critical approach

Guthrie et al. (2012) and Dumay (2009b) have shown that the intangibles/IC field has gone through three key stages. First was an awareness raising phase and second a legitimizing and evidence-gathering phase (Petty and Guthrie 2000). The first and second stages contributed to the commonly accepted terminology, the three main components in the taxonomy and a number of competing frameworks and tools for the measurement, reporting and management of intangibles/IC (Dumay 2009b). The third stage, which is in its infancy, is characterised by research that takes a critical approach to the study of intangibles/IC (Guthrie et al. 2012). This third stage began with the 2004 special edition of the Journal of Intellectual Capital entitled *"IC at the crossroads - theory and research"* (Chatzkel 2004; Marr and Chatzkel 2004) and gained further momentum with Mouritsen's (2006) paper *"Problematising intellectual capital research: ostensive versus performative IC"*. It has continued to develop with critical papers by Cuganesan and Dumay (2009), Dumay (2009b; 2009a; 2012), Dumay and Rooney (2011) and Roslender and Stevenson(2009).

Chaharbaghi and Cripps (2006) Mouritsen (2006), O'Donnell et al. (2006), and Dumay (2009a) argue that this critical approach is needed to progress research in the study of intangibles/IC from an interesting, yet contested concept to an understanding of how intangibles/IC is useful in practice. While some, such as Marr et al. (2003) and Andriessen (2004a), propose that more empirical testing of how intangibles/IC elements are linked to company financial value, Allee (2000), Mouritsen (2006) and Chaharbaghi and Cripps (2006) question the usefulness and appropriateness of this as the way forward for the field. Chaharbaghi and Cripps (2006) argue that the full transformative potential of the intangibles/IC concept will not be realised by continuing to use industrial-aged accounting and management approaches to understand intangibles/IC. They argue that it is

"undesirable" to reduce intangibles/IC to "a calculable number that establishes whether an organisation's [intangibles/IC] has increased or diminished" or had an impact on the financial bottom line (Ibid 2006: 30). Allee (2000) agrees adding that any approach which drives indicators of success for intangibles/IC towards financial measures closes the window on other ways of thinking about wealth and value creation. A more critical approach, informed by critical management studies, is required to tackle these complex issues. Critical management studies is said to "interrogate" the "established agendas" of management practices and contemporary society, such as the "profit imperative, racial inequality and... ecological irresponsibility" (Alvesson et al. 2009: 10).

Mouritsen (2006) and Dumay (2008) also argue that much effort has been spent trying to develop a global framework for intangibles/IC when what is really needed is empirical reports on the experiences of intangibles/IC. Guthrie et al. (2012) also noted that there has been a tendency in the literature to focus on intangibles/IC from a general or industry perspective, rather than at an organisational level. This tendency is driven by a grand narrative in the intangibles and intangibles/IC literature – that intangibles are the difference between a firm's market and book value - which remains empirically unproven (Dumay 2012). This narrative is so prolific in the intangibles/IC literature that Dumay (2012) argues those "who come into contact" with the intangibles/IC literature "for the first time are often led to these theories" and led to believe that it is possible to develop truths about intangibles/IC which are larger than any one organisation or one specific context (Mouritsen 2006). Dumay (2012: 12) argues that more research at the organisational level is needed to improve our understanding of the ***practice*** of intangibles/IC and the "resultant changes within an organisation" rather than attempting to link the impact of ***practice*** to "a generalised outcome, such as higher profitability or the determination of a fixed value of intangibles". These observations informed the approach taken in the case studies for the second phase of the research design (see Chapter Four) and the conceptual framework outlined later in this Chapter (see section 2.7).

2.2.6 Intangibles/IC as a practice versus phenomenon

The third stage of intangibles/IC research has lead to the identification of two approaches to the study of intangibles/IC – as a ***phenomenon*** and as a ***practice***. The study of intangibles/IC as a ***phenomenon*** is the most common and prolific approach to the study of intangibles (Dumay 2009a). It is based on the premise that the intangibles/IC of a firm are connected to financial value and value creation in an organisation in a fundamental way (Mouritsen 2006). The ***phenomenon*** based approach sees researchers focusing on developing global or universal frameworks for identifying, measuring, and reporting intangibles/IC – viewing them as things with descriptive qualities. Chapter Five focuses on

the data collected with regards to the ***phenomenon*** of intangibles/IC in the case study sector.

The study of intangibles/IC as a ***practice*** is the result of the contemporary critique of the intangibles/IC theory outlined above. It adopts the perspective that there is "no fundamental formula to understand the role of [intangibles/IC] in organisations and society" (Ibid, 2006: 823). The ***practice*** based approach advocates developing a deeper understanding of how organisations mobilise their intangibles/IC to achieve their goals. The ***practice*** based approach to intangibles/IC takes the theoretical standpoint of the critical intangibles/IC researchers that intangibles are not 'things' but rather the process of choice-makers exploring and exploiting possibilities (Chaharbaghi and Cripps 2006) where words, practices and indicators are mobilised to allow the company to do something (Mouritsen 2004). Chapter Six provides a more general discussion about how firms use their intangibles in practice and Chapter Seven provides a discussion of how the case study firms are using their intangibles/IC to operationalise sustainable development strategies and create more sustainable business models.

Mouritsen (2006) labels these approaches as ostensive (***phenomenon***) and performative (***practice***) or IC1 and IC2 respectively. The key characteristics of each approach is summarised in Table 2.2 below. These two approaches – ***phenomenon*** (IC1) and ***practice*** (IC2) - have informed the research design of this thesis (see Chapter Four) and their relevance to the study of operationalising sustainable development into a business organisation is discussed in greater detail in section 2.6.1.

Intangibles/IC Approach		IC Proposition	IC Concepts	Value of IC
	IC1 (Ph)	IC, knowledge and strategy are linked through causal mapping and related to effects of IC on value creation	Consists of human, structural & relational capital; Each has functional qualities and are thus value generating assets not visible in the firm's balance sheet; IC has descriptive qualities and measurement is essence	Risk and return Predictive information Market-to-book
	IC2 (Pr)	IC is mobilised idiosyncratically in attempts to make a knowledge-based organisation perform towards endogenously defined values	Intangibles/IC is a representation of knowledge resources whose transformative qualities emerge in application. IC has classification qualities and measurement is convention.	Strategic values User values Ability to accomplish something

Table 2.2: Intangibles/IC as a phenomenon (IC1) versus Intangibles/IC as a practice (IC2), Source: (Mouritsen 2006: 824)

Mouritsen (2004; 2006) and Dumay (2009a) both argue that what is required for the intangibles/IC literature is empirical research which attempts to understand intangibles/IC from the ***practice*** perspective. The development of more frameworks, which assume that intangibles/IC are a ***phenomenon*** with universal truths about how they are linked to financial performance in a specific, replicable ways, will not progress the field of study. Rather more understanding of how firms orientate their intangibles/IC towards the production of a purpose (good or bad) is needed. This debate between the ***phenomenon*** and ***practice*** based approaches has guided the research design for the empirical portion of this these. This is discussed in greater detail in section 2.7 (see also Chapter Four).

2.2.7 Summary

Part A of this Chapter has provided the necessary background information on the concept of intangibles, how it is defined in this thesis and current critiques of the field of inquiry. Part B of this Chapter provides the relevant background literature on sustainable development and corporate sustainability relevant to the topic of inquiry in this thesis. This then leads into the development of the conceptual framework for this thesis which builds the conceptual bridge between the intangibles/IC and corporate sustainability literature.

PART B: SUSTAINABLE DEVELOPMENT

Part B of Chapter Two provides relevant background literature on sustainable development and corporate sustainability. It discusses the ambiguous nature of the concept and how this has influenced the implementation of it in practice. It then discusses how the business community has been encouraged to implement and in turn responded to operationalising sustainable development. This is then followed by a discussion of the conceptual framework which draws the conceptual links between the study of intangibles and corporate sustainability.

2.3 Background: sustainable development

The Bruntland Commission popularised the term 'sustainable development' and defined it as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development (WCED) 1987: 43). According to Parrish (2008: 16) sustainable development emerged as a way to reconcile the "conflict in some of western society's most deep-seated values and beliefs" about continued economic growth and ecological critiques on the limits to growth. An in-depth review of the history and development of the concept of sustainable development, while interesting, is not undertaken in this thesis. A number of previous authors have already undertaken this task (see Robinson 2004; Kates et al. 2005; Runnalls 2008; Drexhage and Murphy 2010).

What is important to highlight for this thesis is that although the goal of sustainable development and its various accompanying discourses have become enshrined in government policies, business agendas and institutions around the globe (Hajer 1995; Dryzek 1997; Drexhage and Murphy 2010) actual progress on sustainable development has been slow and incremental (Drexhage and Murphy 2010) and there is an evident gap between theory and practice. Secondly the private sector has shifted from the periphery to the centre of the sustainable development debate and implementation (Runnalls 2008; Barkemeyer et al. 2011) making business organisations a relevant institution to study.

2.3.1 Gap between theory and practice

Kates et al. (2005: 20) state that there is "near-universal agreement that sustainability is a worthwhile value and goal" and Dyllick & Hockerts (2002: 130) contend that sustainable development has become "the mantra for the 21st century." Drexhage and Murphy (2010: 9) agree and add that sustainable development has "transitioned from being an interesting yet contested ideal" to a concept which receives "widespread endorsement from international institutions, governments, businesses and civil society." However, despite the

widespread endorsement of sustainable development as a "guiding principle" a "gap between theory and practice" continues to persist (Drexhage and Murphy 2010: 9). That is while organisations and civil society may purport to understand and support sustainable development, actually operationalising the concept in practice is much more difficult. Dunphy et al. (2007: 4) argue that many large enterprises need to "change significantly the way they do business", however, the current dominant environmental discourse in mainstream business is said to be eco-liberalism (Blair and Hitchcock 2001) and does little to challenge business as usual (see section 2.4.3).

Operationalising sustainable development is not a trivial task and a number of factors add to its complexity. The dominant economic system which emphasises economic growth and the financial bottom line (Smith and Sharicz 2011) means that businesses are driven to "translate the benefits of sustainability" into "the usual financial measures" (Azapagic 2003: 304) which is not always possible (see section 2.4). Rather than implementing a radical paradigm shift in the economic system which better supports sustainable development many have instead adapted the concept to suit their agenda. This is discussed in the next section.

2.3.2 Sustainable development: an ambiguous concept

Kates et al. (2005: 20) state that the Bruntland Commission's definition of sustainable development is criticised for allowing various stakeholders to define and apply the term to suit their individual aims, regardless of their actual merit leading some to critique it as "an oxymoron; fundamentally contradictory and irreconcilable...[and]...meaningless in practice." However these authors counter the critics' arguments, stating that it is precisely the concept's ability to be redefined and reinterpreted , its "malleability", that allow it to remain "an open, dynamic and evolving idea" to address the diverse range of challenges facing individuals, governments, businesses, and industries (Ibid, 2005: 20). Drexhage and Murphy (2010: 6) agree that sustainable development is a "fluid concept" and believe that this flexibility to be adapted to suit individual purposes has underpinned the universal adoption of the concept. Equally it is also a "liability because various interpretations have led to confusion and compromised implementation" (Ibid 2010: 6). For example, prevailing interpretations have allowed the neoclassical economic paradigm to persist (Drexhage and Murphy 2010) which defines development in terms of economic growth and subordinates social and ecological goals to the primary goal of economic development (Freeman and Gilbert 1992; Shrivastava 1995; Stubbs and Cocklin 2008a). This is particularly prevalent in the business context where improved environmental performance is often pitted against financial performance. This is discussed in further detail in section 2.4.4.

Despite the number of definitions which have emerged over the past two decades Drexhage and Murphy (2010) argue that there are three common principles that tend to be

emphasized: a commitment to equity and fairness; a long-term view that emphasizes the precautionary principle; and the three pillars of environment, economy and society. Thin (2002: 1) agrees that this "three-pillars motif" of sustainable development is the most influential and repeated representation of sustainable development (see Figure 2.4). It is also generally accepted that sustainable development calls for a convergence between the three pillars of economic development, social equity, and environmental protection (Kates et al. 2005; Drexhage and Murphy 2010).

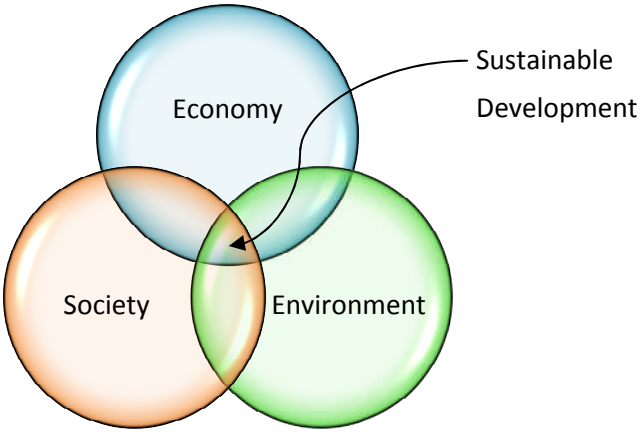


Figure 2.4: The three pillars motif of sustainable development

This model has been extensively used and has been widely accepted and adapted by business, governments, NGOs and academia. In an economic sense it is based on the assumption that organisations need to manage three types of capital (economic, social, and natural), which may be non-substitutable and whose consumption might be irreversible (Dyllick and Hockerts 2002; Hockerts and Wustenhagen 2010). The three pillars model is not without its critics, including Giddings et al. (2002) who argue that the model does not stand up well to scrutiny based on the following three criticisms:

- The artificial distinctions between categories;
- Users may concentrate on only one part and not the whole; and
- Risk approaching issues in a compartmentalised manner and assumptions that trade-offs can be made.

Drexhage and Murphy (2010: 16) support these critiques stating that to date sustainability is "often compartmentalized as an environmental issue" manifested in "a green agenda" or bringing "environmental considerations in economic development". This has resulted in a tendency for business organisations to focus on eco-efficiency and done little to challenge the pervasive neoliberal economic paradigm, which is based on continued growth and expansion, leaving issues such as sufficiency, effectiveness, and equity yet to be addressed (Young and Tilley 2006). The next section of this Chapter explores in greater detail the

background information on how sustainable development is interpreted in the business context relevant to this thesis.

2.4 Business and sustainable development

As outlined in Chapter One there is a general agreement in the literature that business has a role to play if sustainable development is to be achieved (see section 1.5.2). Business organisations are responding to the challenges of sustainable development and becoming actively involved in the sustainability debate. According to Barkemeyer et al. (2011: 2) the discussion about the role businesses play in sustainable development has "undergone a particularly noticeable shift" in recent years from an emphasis on a partnership role to its current focus on internalising environmental and social concerns within the organisation's boundaries. Azapagic (2003: 303) argues that this growing interest in "corporate sustainability" is being driven by both legislation and a growing belief that it "makes business sense to be more sustainable". In essence there is claimed to be a convincing business case to do so. This is discussed later in section 2.4.4. It is first necessary to define how the three pillars motif of sustainable development has been translated into the business context – as corporate sustainability, the triple bottom line, eco-liberalism and the business case for sustainability.

2.4.1 Corporate sustainability

The terms corporate social responsibility (CSR), corporate responsibility (CR) and corporate sustainability (CS) are often used interchangeably, even though they each have distinct bodies of academic literature and historical developments (for a detailed review see Zink and Steimle 2007). Montiel (2008), however, notes that there are now significant overlaps and mergers in their topics of inquiry. A recent study by Ellis and Bastin (2010: 303) also found, particularly in the context of the UK recession, there has been a shift in the language by business and policy makers "away from terms such as CSR (and CR)" towards "terms such as sustainability and sustainable business practices." They attribute this shift to these terms being more generic and appealing due to their connotations with efficiency, longevity and durability.

For the purpose of this research the term corporate sustainability has been adopted to represent efforts by business to operationalise sustainable development. Isaksson and Steimle (2009: 180) argue that there are "no 'right' or 'wrong' definitions of this normative concept" and that corporate sustainability is a company's "commitment to behave socially and environmentally responsible while striving for its economic goals" (Ibid, 2009: 170). Corporate sustainability is usually associated with the three pillars of sustainable development and is the balancing of firms' economic viability, environmental performance, and social responsibility (see Figure 2.5).

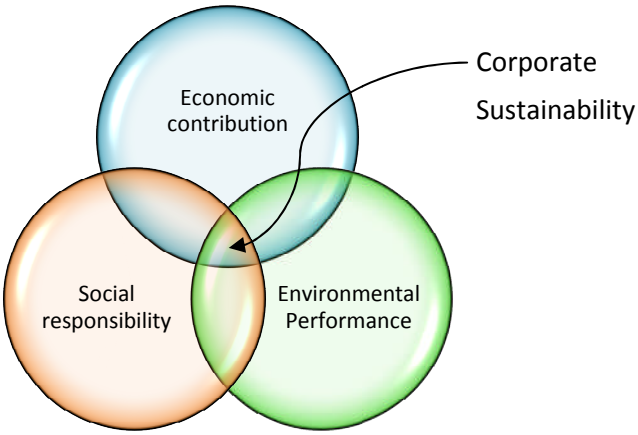


Figure 2.5: Corporate sustainability and three pillars of sustainable development, Source: Azapagic (2003: 304)

The European Commission's (2001: 8) definition also focuses on the three pillars of sustainable development, but also highlights the important notion that firms integrate these concerns into their operations "on a voluntary basis".

2.4.2 The triple bottom line

Translating the three pillars motif into the business context Elkington (1997) coined the phrase Triple Bottom Line (TBL) to help companies identify not only the financial value they create, but also the environmental and social value they add or destroy as a result of their activities. Elkington (1997; 2004) argues that companies should be preparing three different bottom lines – profit, people and planet – in order to assess a firm's performance and its contribution (or lack of) to creating sustainable wealth.

A barrier to the implementation of the TBL is that the financial metrics used in business are fairly well established whereas, according to Elkington (2002), the nonfinancial performance metrics continue to remain misunderstood, unappreciated, underdeveloped and need further study. There a general agreement in the management, accounting and investment literature that there is a demand for nonfinancial performance information regarding firms' environmental and social performance and also its intangibles/IC performance (Gray et al. 1996; Canibano et al. 2000; Everett and Neu 2000; Schaltegger and Burritt 2000; Richardson 2004; Moller and Schaltegger 2005; Yongvanich and Guthrie 2006; Ross and Wood 2008). For a number of decades, researchers in the intangibles/IC field have been studying the nonfinancial performance metrics of organisations with little sharing of the advances in knowledge between the corporate sustainability and intangibles/IC communities (Allee 2000). There is however, growing evidence of the intangibles/IC reporting literature addressing corporate sustainability reporting. This is discussed in section 2.7.5. A larger disconnect between these two fields is discussed further in section 2.6, along with how this thesis fills this gap to make a contribution to knowledge.

2.4.3 Eco-liberalism

As mentioned in section 2.3.1, the most prevalent environmental paradigm in a business context today is eco-liberalism and this also presents a significant impediment to the implementation of TBL performance measurement and reporting. According to Stubbs and Cocklin (2008a) eco-liberalism is based on the belief that:

- limits to growth are non-existent or in the very distant future;
- free markets and technology will solve problems; and
- organisations only pursue environmental reforms if it is: in their self-interest; legislated; the result of stakeholder pressure; and/or to retain organisational legitimacy.

Eco-liberalism conforms to rather than challenges the current neoclassical economic paradigm. Boisot (1995) argues that this is because whenever any "radical alternative to the existing symbolic order emerges, one of the ways the existing social system will try to neutralise it is by making a special effort to incorporate it into existing schemes" (cited in Allee 2000: 17). Stubbs and Cocklin (2008a: 103) and others (Shrivastava 1995; Gray 2006; Tilley and Young 2009) argue that the dominant economic paradigm is "inherently limited in its ability to effectively address social and ecological degradation" as the priority of business models in this paradigm will always be economic growth over environmental health and social well-being. This is a problem for the TBL approach as the economic bottom line still dominates corporate decision-making (Steger et al. 2007). As a result Gray (2006: 806) argues that most businesses have adopted a "business-as(-almost) usual" or "accountability-lite" attempt at TBL accountability which "looks a little like triple bottom line reporting", but fails to acknowledge that the financial bottom line will always dominate a profit-driven firm.

Steger et al. (2007) argue that despite the popularity of the TBL concept many company leaders are still unclear on what sustainable development means for their organisation. Smith and Sharicz (2011: 75) state that this is because they are unsure how corporate sustainability fits within their existing business model and whether it means "overhauling its business models and processes" or simply that they "will survive the next ten years." More importantly they are concerned with how corporate sustainability "impacts the bottom line" (Ibid 2011: 75). Companies that have resisted improving environmental and social performance often believe that there is a trade-off between corporate sustainability and profitability. This has led to a number of empirical studies being undertaken to assess the commercial benefits of corporate sustainability – or the so-called *business case for sustainability*. The next section of this Chapter outlines the relevant background information on the BCS. The BCS is also particularly relevant to this thesis as it plays a

prominent role in the case study sector's experience with sustainable development (see Chapter Three).

2.4.4 The business case for sustainability

The BCS is commonly used as a means to present the commercial benefits associated with the voluntary uptake of corporate sustainability in business practice (Kemp 2001; Holliday et al. 2002; Willard 2002; Salzmann et al. 2005; Wasiluk and Horne 2009; Carroll and Shabana 2010). Kolk (2008) argues that business has increased its focus on corporate sustainability largely as a result of external stakeholder pressures for more accountability and transparency in corporate behaviour. Where sustainable development puts external pressures on businesses to improve environmental and social performance, the BCS is the opportunity that pro-actively responding to these pressures presents for a business. This idea has been illustrated in Figure 2.6 below. However, Carroll and Shabana (2010: 92) found that the business case in recent times has become less about the opportunity and more about the "justification and rationale" or the "specific benefits in an economic and financial sense".

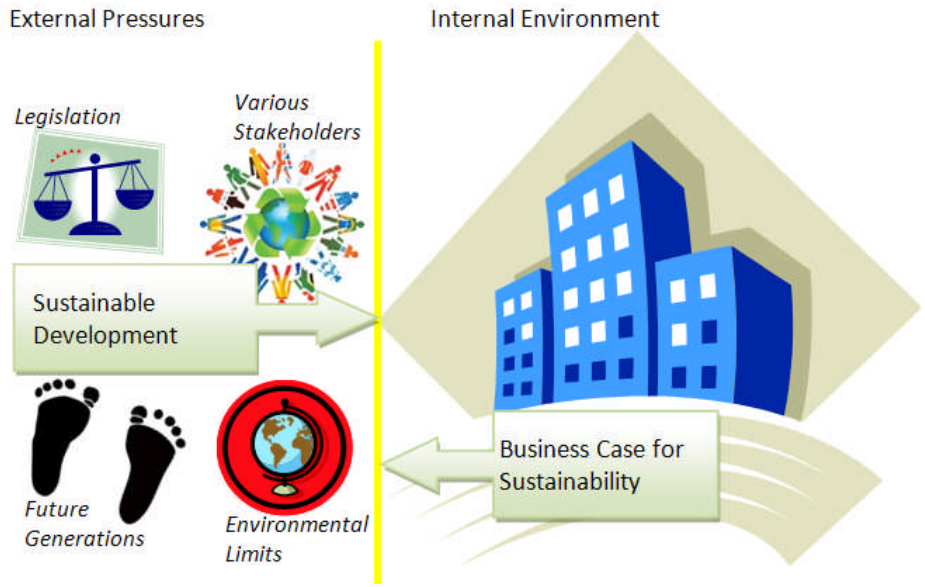


Figure 2.6: External pressures of SD versus the internal opportunity of the BCS

The BCS evolved out of a shift in focus in the academic literature in the mid-1980s from pollution control to the notions of eco-efficiency, win-win solutions and competitive advantage gained through environmental performance. Closely linked to ecological modernisation (EM) theory, it aims to re-frame the win-lose view of environmental protection to one which is win-win. EM's 'win-win' logic has infiltrated the broader corporate sustainability literature and as a result those who develop and present the BCS

are often unaware of the EM theoretical underpinnings, how it has influenced their approach to rationalising the BCS and the limitations of EM's win-win rhetoric.

Although there are numerous interpretations of EM, it is generally agreed that the first world corporatist view is the predominant view (Mol 1995; Everett and Neu 2000). This view promotes the ideology that business as usual, just done more efficiently, is capable of providing solutions to environmental problems (Tilley and Young 2009). EM's position is that existing "political, economic and social institutions can internalise care for the environment" (Hajer 1995: 25), without the need for any "radical change" (Blair and Hitchcock 2001: 19), in order to restructure the economy to be more environmentally sound. Developed by a "relatively small group" of German environmental and social scientists (Huber 1982; Mol 1995) EM's sphere of influence has now expanded to become part of the "mainstream debate in the environmental social sciences" (Murphy 2000: 1). EM advocates addressing environmental issues by designing them out of industrial processes, rather than end-of-pipe solutions, thereby not only making environmental improvements, or eco-efficiencies, but also achieving cost efficiencies as well (Blair and Hitchcock 2001). EM's popularity is linked to its "unthreatening ideology" (Blair and Hitchcock 2001: 19) which is appealing to both businesses and policy makers (Hajer 1995; Revell 2007; Jensen and Gram-Hanssen 2008). Porter and van der Linde (1995) are also well known for their views on competitive advantage and the win-win benefits of eco-efficiency. However, both of these theoretical positions are often criticised for focussing on the low-hanging fruit and easy win solutions of eco-efficiency which mask the more significant and capital intensive issues that businesses need to address (Walley and Whitehead 1994b). In addition, selling the "win-win rhetoric" and convincing stakeholders is difficult as the short-term financial benefits become less apparent (Revell and Blackburn 2007: 412).

2.4.5 Linking corporate sustainability and corporate financial performance

The impact of corporate sustainability activities on corporate economic performance has been debated strongly for many years. From strictly an environmental management perspective Schaltegger and Synnestvedt (2002) argue that there is no natural or mechanical law automatically linking environmental performance with economic performance as a number of factors, such as regulation and pressure from stakeholders, can impact the economic incentive for companies. In reality, the relationship between corporate sustainability and corporate financial performance varies from one firm to the other due to various situational contingencies (Barnett 2007). Regardless there are still countless studies in the academic and grey literature which attempt to develop causal links between the two (Hahn et al. 2010; Figge and Hahn 2012).

The results of previous empirical studies are inconclusive as some studies report a positive impact, some a neutral impact, and yet others a negative impact (Salzmann et al. 2005).

For example, Lo and Sheu's (2007) study of Standard and Poor (S&P) 500 firms found a positive correlation between firm value and corporate sustainability where Prior and Faria's (2010: 2) study of Australian public office trusts concluded that no "hard data" yet exists to prove that improved environmental performance adds to the financial bottom-line. McWilliams and Siegel (2000) argue that the inconsistency in results in the previous literature is related to flaws in the empirical analysis used, in particular research and development benefits being excluded. Salzmann et al.'s (2005: 33) in depth review of past studies examining the link concluded that the business case as a research topic has two "major stumbling blocks" inhibiting "more conclusive" results: complexity and materiality. They state that the business case is complex because it is contingent on a number of factors which vary between industries, countries and points in time. Carroll and Shabana (2010) and Wasiluk and Horne (2009) agree with this point, both arguing that there is no single BCS, no single rationalisation of how sustainability improves a company's economic bottom-line. The second stumbling block suggested by Salzmann et al. (2005: 33), materiality, relates to the elusiveness of the economic value of sustainable business strategies beyond "easily measurable" eco-efficiency management practices. They argue that the effects of corporate sustainability on intangibles, such as brand, staff loyalty, staff competencies and corporate culture, are difficult to quantify.

Often the so-called commercial benefits are claimed to accrue to an organisation's intangible resources, such as its reputation, organisational capabilities, and individual competencies (Kemp 2001; Holliday et al. 2002; SustainAbility and UNEP 2005; Wasiluk and Horne 2009). Wasiluk and Horne (2009) argue that more work needs to be done to understand these intangible benefits and their link to corporate financial performance. This thesis argues that few, if any, previous BCS studies have looked to the intangibles/IC literature to investigate how intangibles are linked to company financial performance. As previously mentioned Allee (2000) argues that researchers addressing corporate sustainability and those researching intangibles/IC rarely engage with each other and/or use breakthrough work from each other. Researchers in both areas are struggling to "make the formerly unseen and unappreciated both more visible and more valued" (Ibid 2000: 18).

However if corporate sustainability researchers do venture into the intangibles/IC field they will initially be confronted with a situation where the measurement and valuation of intangibles, and its links to company financial performance, is an unresolved and ongoing challenge. Intangibles/IC researchers have spent much effort attempting to develop approaches to measure intangibles and link them to company financial performance. Despite the numerous frameworks and methodologies that exist there is no one approach that has been embraced and, as discussed in section 2.2.5., this approach to intangibles/IC is questioned for its desirability and effectiveness.

Digging deeper below this surface level barrier of measurement, one can see that corporate sustainability researchers are only looking at intangibles/IC as a ***phenomenon***, which is based on the underlying assumptions that intangibles are things to be measured and whose value is missing from the company balance sheet (see section 2.2.6). This ***phenomenon*** approach, while prolific, has a growing number of critics (see section 2.2.5) and it is argued in this thesis that it currently presents a barrier to the uptake of sustainable development in business beyond the easy wins of eco-efficiency. The ***phenomenon*** based approach to measuring intangibles does not challenge the BCS discourse to shift beyond its focus on justifying why, in financial terms, a company should manage its environmental and social performance. It will also only serve to further reinforce the current eco-liberal worldview and limit companies' ability to see the benefits of being sustainable. Proponents of the BCS run headlong into a brick wall when they are not able to link higher profitability or direct financial returns to the intangible outcomes attributed to corporate sustainability.

The ***practice*** based approach to intangibles/IC provides a ladder over this wall by instead focusing on how firms' mobilise or orientate their intangibles towards "a purpose" (Mouritsen 2004: 262) – in this case embedding sustainable development into their business model. This argument is illustrated in Figure 2.7 on the next page. The ***phenomenon*** based approach takes an outside-in view, focusing on the intangibles/IC benefits – or outputs of a sustainability strategy - which accrue to an organisation that manages its (primarily) environmental and social performance whereas the ***practice*** based approach takes an inside-out view focusing on how firms utilise its intangibles/IC – or inputs to the strategy - in order to create a more sustainable business model. As mentioned earlier in this Chapter, Dumay (2012: 12) argues that the focus is then on the management of an organisation's intangibles/IC and the "resultant changes within an organisation" rather than attempting to link the impacts to "a generalised outcome, such as higher profitability or the determination of a fixed value of intangibles".

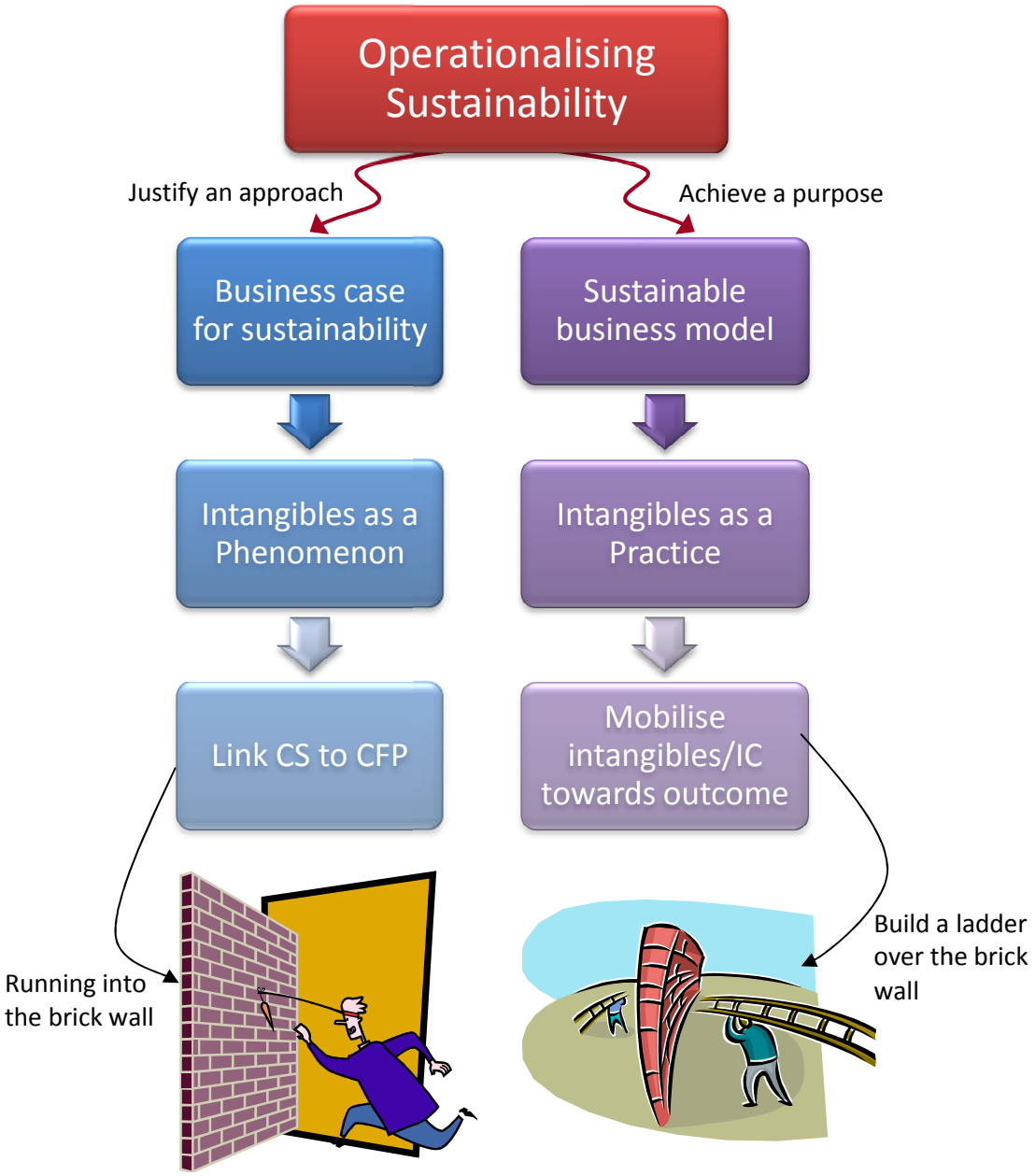


Figure 2.7: Climbing over the CS/CFP brick wall

It is necessary at this point to provide some relevant background information on sustainable business models as it is a concept referred to a number of times in this Chapter and this thesis. A number of conceptual models of a sustainable business have previously been proposed in the literature. The next section of this Chapter presents some of these sustainable business models and examples in the empirical literature related to the implementation of more sustainable business models.

2.5 Sustainable business model

According to Elkington (2001) a sustainable business will develop new models of wealth, value and success that are relevant to a sustainable economy. A sustainable business is one that contributes to sustainable development by delivering simultaneously economic, social, and environmental benefits—the so-called TBL. The term *business model* has become increasingly popular in management research and practice and was born out of the literature about internet firms (Shafer et al. 2005). There is no generally accepted definition for the term (Porter 2001; Shafer et al. 2005), however, there is consensus in the literature according to Wüstenhagen and Boehnke (2008) that it describes how a business creates value (financial, social, or other forms of value) and is "a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network" (Shafer et al. 2005). George and Bock's (2011: 99) discourse analysis of over 150 executive managers' interpretation of the term concluded that it is defined in practice as "the design of organisational structures to enact a commercial opportunity." There are three primary dimensions of the organisational structures which include the resource structure, the transactive structure and the value structure. These dimensions determine: how the firm's resources are identified and managed (resource); how the firm interacts with its partners and stakeholders (transactive); and, the "system of rules, expectations, and mechanisms that determine" how the firm creates and captures value (value) (Ibid, 2011: 100).

2.5.1 Business models are flawed

Dunphy et al. (2007) argue that the business models of existing companies, large and small, need to significantly change in order for sustainable development to be achieved. Business models in the current neoclassical paradigm focus on progress through economic growth and shareholders returns (Gray 2006; Dunphy et al. 2007; Stubbs and Cocklin 2008a). However, according to Shafer et al. (2005) trouble arises in business models when:

- Flawed assumptions underlie the core logic (i.e. flawed assumptions about the future or current situation);
- Limited sets of strategic choices are considered and/or in a piecemeal and isolated approach;
- Misunderstandings occur about value creation and value capture; and
- Flawed assumptions about the value network are relied upon.

By applying Shafer et al.'s (2005) criteria to the current neo-classical business models it can be argued that not only is their ability to achieve sustainable development limited, they are also blindly ensuring that their long-term survival is threatened. This is because of their:

- flawed assumptions about abundant natural resources, unlimited growth and the planet's capacity to absorb pollution and waste (Dunphy et al. 2007; Birkin et al. 2009);
- strategies which are limited by management paradigms which see the organisation only as an economic entity (Stubbs and Cocklin 2008b; Stubbs and Cocklin 2008a) and subordinate environmental and social goals to the primary goal of creating economic value (Freeman and Gilbert 1992);
- acceptance of wealth and well-being indicated by measures of financial capital (Emerson 2003; Gray 2006); and
- they view the economy as a closed system separate from nature (Allee 2000; Stead and Stead 2004; Stead and Stead 2008).

Accordingly there is a growing body of literature outlining typologies of sustainable business models (for example Elkington 2001; Griffiths and Petrick 2001; Young and Tilley 2006; Parrish 2008; Birkin et al. 2009; Glass and Dainty 2011). Some of these are discussed in greater detail in the next section along with examples from the empirical literature of firms' experiences with implementing more sustainable business models.

2.5.2 Sustainable business model – archetypes and empirical studies

As mentioned above, a number of conceptual sustainable business model archetypes have been proposed in the literature, most notably, Elkington's (2001; 2004) 'chrysalis economy' concept. He argues that as pressures mount for businesses to transition and adopt a sustainable approach four main types of companies will emerge: locusts, caterpillars, butterflies and honeybees. Honeybees will be the sustainable entrepreneurs who "model new forms of wealth creation" for butterflies to "mimic" and "scale up" (Elkington 2004: 12). Caterpillars have the potential to transform into butterflies if supported by a mixture of incentives and subsidies; however locusts will always be highly destructive and require regulation to minimise their impacts. Honeybees will have sustainable business models, based on innovation and create sustainable production of natural, human, social, institutional and cultural capital – all of which, with the exception of natural capital, are currently identified in the business paradigm as intangibles. Elkington makes no specific mention of financial capital perhaps seeing it as a means to the creation of sustainable wealth rather than as an end itself. He is also not explicit about how firms will measure, manage or create these intangibles in practice. Glass and Dainty (2011) have developed three archetypes of a sustainable construction business based on a phase or stage model of corporate sustainability and these are discussed in Chapter Three as it is relevant to the case study sector (see section 3.4.2).

The sustainable entrepreneurship literature has also developed a vision of a sustainable business models (Young and Tilley 2006; Tilley and Young 2009) as well as conceptualising

the design principles and processes of establishing these sustainable enterprises into practice (Parrish 2007; Parrish 2010). According to Parrish (2008) a sustainable enterprise is one which is environmentally and socially driven using profit as a means – not an end goal. Young and Tilley (2006) argue that a sustainable enterprise addresses issues such as sufficiency, equity, and futurity, not just efficiency and effectiveness (see Figure 2.8 below).

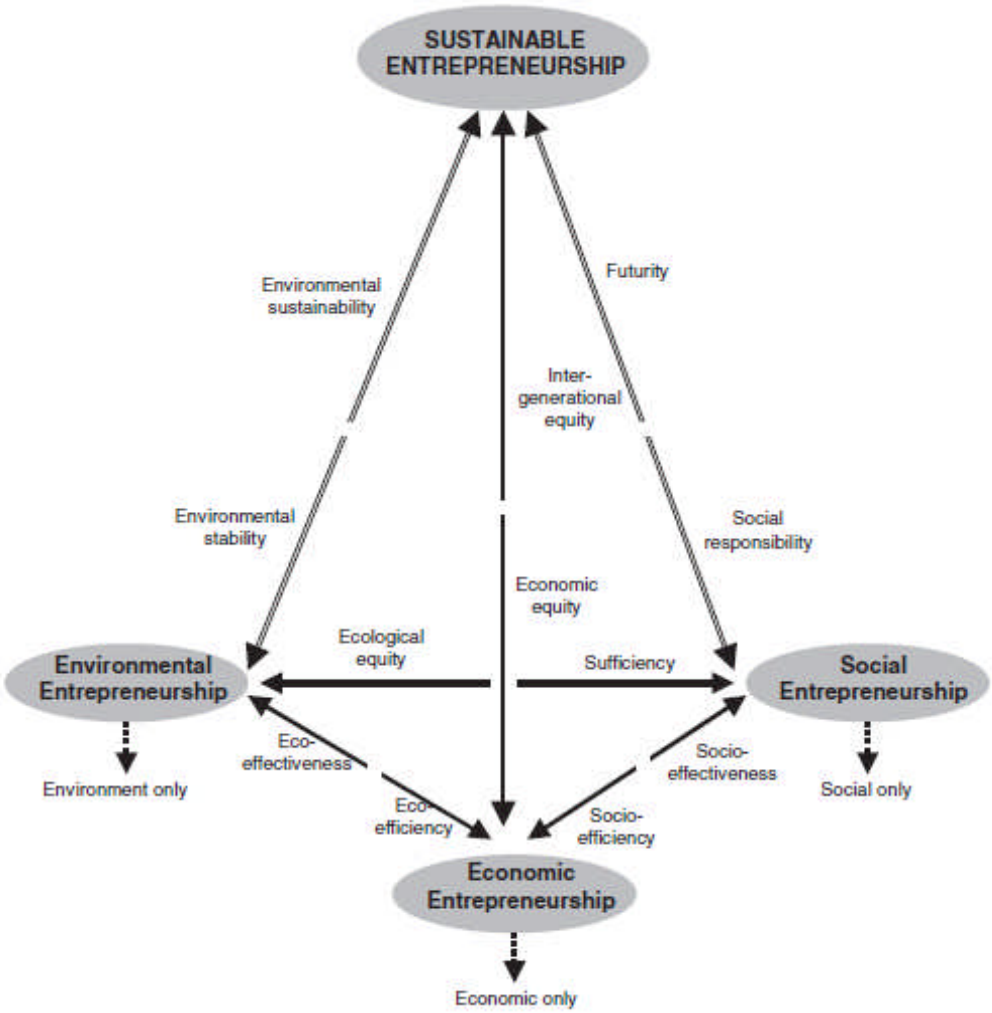


Figure 2.8: Sustainable Entrepreneurship Model (Young and Tilley 2006: 410)

A key proposition of this research is that existing businesses **are able to make progress to achieving sustainable development**, even within the context of the existing neoclassical economic paradigm, by making changes to their existing business model and focusing on mobilising their intangibles and not just managing their environmental and social performance. Based on the resource-based view of firm (see section 2.1.3), intangibles are relevant to and present in all business models regardless of their current approach to sustainable development. This idea is illustrated by me in Figure 2.9 below. The versatility of intangibles concept means that changes in how firms identify, measure, manage and

report their intangibles/IC across the various stages of corporate sustainability can be identified. Phase or stage models of corporate sustainability are discussed later in this Chapter (see section 2.5.4)

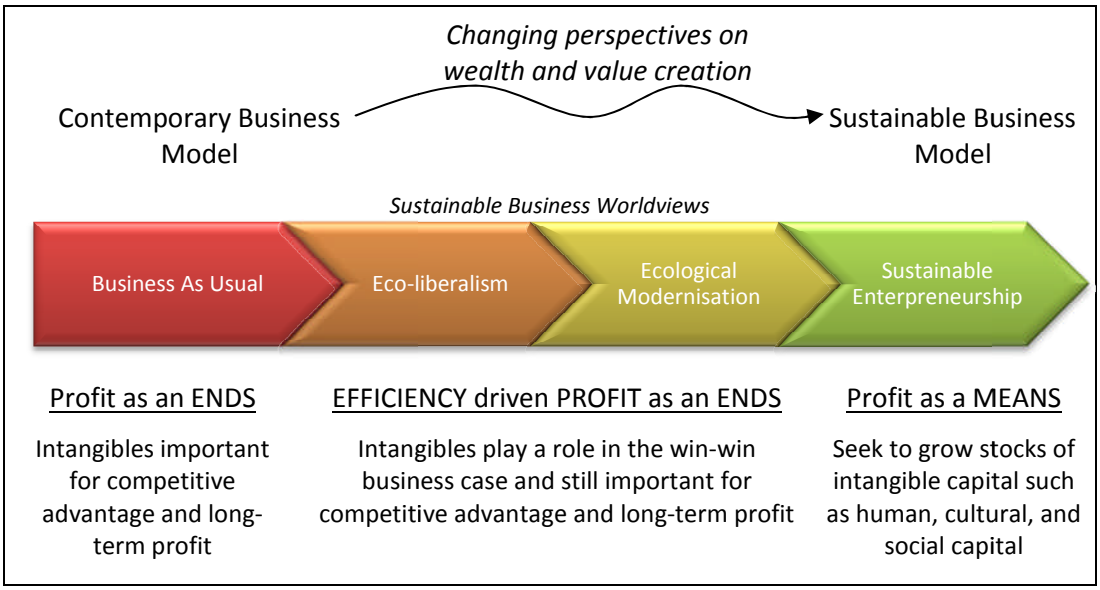


Figure 2.9: Intangibles relevance in business models from traditional to sustainable

Birkin et al. (2009: 378) argue that although there have been various attempts to identify what a business model MIGHT look like if it were to prioritize sustainable development there have been fewer attempts to "explore what business is currently attempting to do in practice to incorporate sustainable development considerations" into their business model. Sharma (2002), Bansal (2005), Stubbs and Cocklin (2008a) and Maon (2010) all agree that current understandings of sustainable business models and how sustainable development is operationalised in firms is weak.

Some empirical studies do exist on organisations that are embedding sustainability into business models (Stubbs and Cocklin 2008b; Birkin et al. 2009; Bryson and Lombardi 2009; Smith and Sharicz 2011); the authors/studies primarily focus on the key successes and constraints experienced to implementing the new business models. For example, Stubbs and Cocklin's (2008a: 103) case studies of two Australian organisations, which are leaders in operationalising sustainable development, concluded that organisations that adopt a sustainable business model "must develop **internal structural** and **cultural capabilities** to achieve firm-level sustainability and **collaborate with key stakeholders** to achieve sustainability for the system that an organisation is part of." They also found that there is more to implementing sustainability "than changing internal business processes, practices and policies and deploying new technologies" (Stubbs and Cocklin 2008b: 520). For example, carpet manufacturer Interface® has pursued implementing a service-orientated model, i.e. whereby customers lease the service of floor covering, rather than a product

orientated model where they purchase it. The company has had limited success as their customers' business models do not value the concept highlighting that that successful radical re-orientation of a company's internal business model to achieve sustainable outcomes is contingent on their value chain changing as well. In essence Stubbs and Cocklin's (2008b; 2008a) empirical work identified that organisations need to **manage and mobilise their structural and relational capital**, part of their intangibles/IC, in order to progress towards a more sustainable business model. Bryson and Lombardi (2009) conducted a study of the business model of two UK-based property firms, however, this paper is discussed in Chapter Three as it is specifically relevant to the case study sector (see section 3.4.2).

Birkin et al. (2009) also found that new environmental management tools and approaches helped companies to embed sustainable development into their business model. However, more importantly it was the personal values of staff, based on their Nordic nationalities, which was identified as key to the studied firms embracing sustainable development into their business models. These studies help to support a key proposition of this thesis: firms' need to consider all of their intangibles/IC components – i.e. human, structural and relational capital (refer back to Table 2.1 above) – when operationalising sustainable development into their business model. This is discussed further in section 2.6.1. Smith and Sharicz's (2011) agree with this proposition and argue that overlooking key areas of intangibles/IC, in particular the structural capital around the organisation's governance system, can lead to negative reinforcing cycles which make implementing sustainable development more difficult and less successful (see Figure 2.10). Equally they argue that by addressing key intangibles/IC elements leads to a positive reinforcing cycle (see Figure 2.11 below).

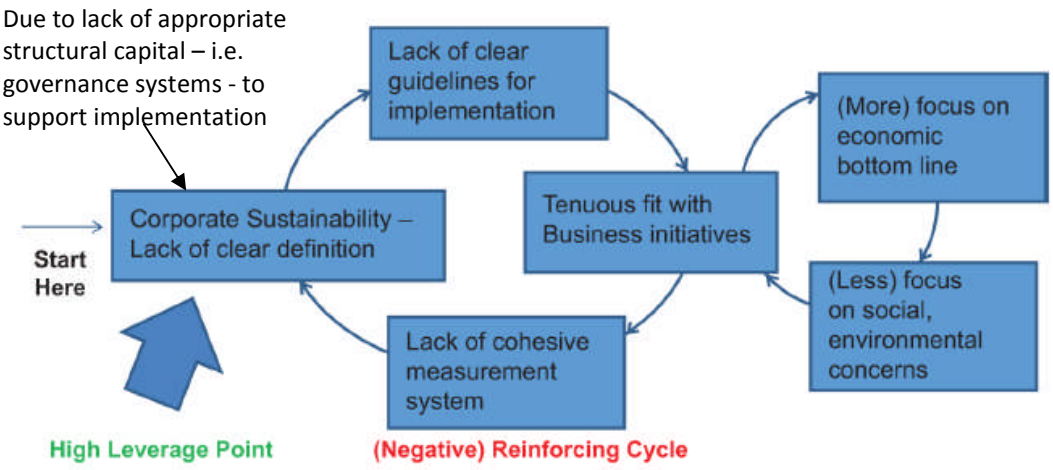


Figure 2.10: Current approaches to implementing corporate responsibility and why they fail, Source: (Smith and Sharicz 2011: 81)

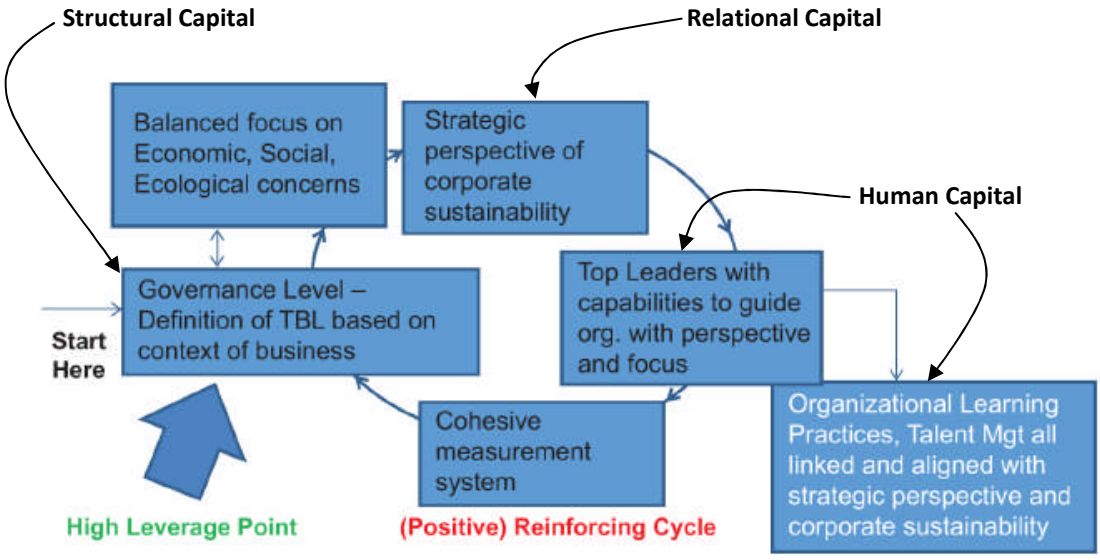


Figure 2.11: Positive reinforcing cycle developed when addressing intangibles/IC to implement corporate responsibility, Source: (Smith and Sharicz 2011: 81)

A common thread in the conceptual models and empirical literature outlined in this section is the need to better understand how to identify, measure and manage a firm's intangibles/IC in order to embed sustainability into a firm's business model. By improving our understanding of how companies manage their intangibles in practice can improve our understanding of the changes companies make to their business models towards more sustainable business models. The next section of this Chapter presents a critique of the most widely accepted intangibles/IC taxonomy presented earlier in this Chapter (see section 2.2.2) in light of the limitations of the neoclassical business model discussed above.

2.5.3 Intangibles/IC taxonomy for a sustainable business model

Allee (2000) was ***the first and only*** scholar in the intangibles/IC literature to argue for an expanded taxonomy of IC which integrates the aims of sustainable development. The current IC taxonomy Allee (2000) argues is still rooted in industrial-age thinking and simply stretches old thinking a bit further rather than challenging mindsets and questioning underlying assumptions traditional business models. Allee (2000) argues that the existing intangibles/IC categories do not recognise that value exchanges (primarily nonfinancial) occur beyond stakeholders with which a business has direct or traditional financial relationships (i.e. customers, shareholders, suppliers). These might include, for example, local communities in which they operate, future generations and the natural environment. Environmental health and social responsibility, Allee (2000) argues, are important areas of value creation that have business and economic impact and are currently excluded from the intangibles/IC discourse. Allee's (2000) expanded taxonomy takes the traditional IC categories of human, relational and structural capital removes the word 'capital' from their label and also adds three new categories. Figure 2.12 below illustrates how sustainable

enterprise (dark blue) taxonomy expands upon the categories found in the traditional (light blue) IC taxonomy. As mentioned earlier (see section 2.2.3) others have also agreed with the concept of removing the word 'capital' and 'assets' from the intangibles/IC discourse, as these terms conger up certain characteristics and connotations that are not always relevant (Pike et al. 2006). The categories include human competence, internal structures, corporate identity, business relationships, social citizenship and environmental health; definitions for each category are summarised in Table 2.3

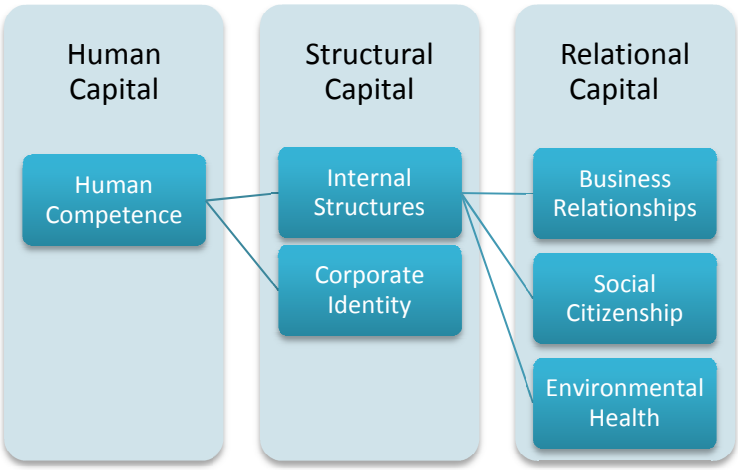


Figure 2.12: IC taxonomy: Traditional (MERITUM 2001) versus Sustainable firm (Allee 2000)

Category	Definition
Human Competence	Individual capabilities, knowledge, skills, experience, problem-solving abilities that reside in people.
Internal Structures	Systems and work processes that leverage competitiveness, including IT, communication technologies, systems and software, databases, documents, images, concepts and models of how the business operates, patents, copyrights and other codified knowledge.
Corporate Identity	The value of one's vision, purpose, values, ethical stance, and leadership as it contributes to brand equity and economic success in business and employee relationships.
Business Relationships	Alliances and business relationships with customers, strategic partners, suppliers, investors, regulatory bodies and government groups.
Social Citizenship	The quality and value of relationships enjoyed with larger society through the exercise of corporate citizenship as a member of local, regional and global communities.
Environmental Health	The value of one's relationship with the earth and its resources as understood through calculation of true costs of resources consumed by an enterprise or economy and determination of equitable exchange or contribution to the health and sustainability of the environment.

Table 2.3: Allee (2000: 20) taxonomy and associated definitions

Lopez-Gamero et al. (2011) proposed adding the term 'sustainable' to each of the three existing categories in the intangibles/IC taxonomy order identify the human, structural and relational capital a business creates as a result of implementing an environmental management system. Chen (2007) also proposed a similar idea but instead opts for the term 'green' instead of sustainable. However both of these propositions, while perhaps appropriate to push firms toward the efficiency stage of corporate sustainability (see Table 2.4 below), do little to challenge traditional business model boundaries and push firms towards more sustainable business models. While the categories presented by Allee (2000) appear better suited to a sustainable business model, these have not been tested in any previous studies in the literature. In order to allow for comparison of the results of this thesis the traditional intangibles/IC taxonomy outlined in section 2.2.2 provided the starting point for the first phase of data collection (see Chapter Four).

This section has outlined some of the literature on sustainable business models, which highlight that the business models of existing companies need to significantly change in order for sustainable development to be achieved. However it is acknowledged that in order to bridge the gap between existing business models and sustainable business models companies will progress through a number of phases or stages of corporate sustainability. The next section of this Chapter provides a discussion of the literature on stages of corporate sustainability and its relevance to this thesis.

2.5.4 Stages of corporate sustainability

A number of phase or stage models have previously been developed to document the phases a company progresses through as it operationalises sustainable development into its business model. It is beyond the scope of this paper to provide a detailed review and critique of these stage/phase models, however, Maon et al. (2010) provide an excellent overview of the current empirical and theoretical literature.

A common factor that can be observed in these frameworks is that most highlight that moving from one stage to the next requires companies to change how they approach their intangibles/IC. For example, in Dunphy et al.'s (2007) model in order to move beyond eco-efficiency companies need to change their approach to managing their human capital from one of cost savings and efficiency to a management approach which supports personal growth and innovation (see Table 2.4). Many of the models also agree with Stubbs and Cocklin's (2008a) empirical findings about the important role of mobilising a firm's **structural** and **relational** capital, but models such as Dunphy et al.'s (2007) and Maon et al.'s (2010) acknowledge the importance of **human** capital to help firms progress to more sustainable business models.

However, as noted in section 2.5.2, there is a lack of empirical studies to support whether these proposed practices assist organisation's with their actual implementation and

embedding of sustainability into their business model. Bertel et al.'s (2010) meta-analysis of 179 sources (both academic and practitioner literature) on practices that support embedding sustainability into an organisation's business model identified 59 distinct practices that organisations use to embed sustainability. The practices can be group into two primary dimensions: first, what the firm is trying to accomplish (fulfilment or innovation) and second, how they are going about it (formal or informal). Fulfilment practices are for delivering on current sustainability commitments and innovation practices move the organisation further along the path to sustainability. Formal practices establish the rules and procedures and informal practices affect behaviour. However, their review found that most of the 59 practices proposed remain empirically untested or unproven and that more comparative studies were needed as well as empirical investigations "across various 'stages' of implementation" (Bertel et al. 2010: 51).

Dunphy et al.'s (2007) phase model of corporate sustainability outlines six distinct phases in which organisations progress towards human and ecological sustainability. The phases characterise how organisations treat their human and natural resources at each phase and include: rejection, non-responsiveness, compliance, efficiency, strategic proactivity and the sustaining corporation (see Table 2.4). It provides a useful and accessible model for making comparisons between and within organisations to assess their current sustainability practices and was selected for use in this thesis. Others such as Maon et al.'s (2010) was discounted for its over-complexity and its primary focus on corporate responsibility, generally overlooking environmental performance. Glass and Dainty (2011) have highlighted that models specifically suited to the property and construction sector (the case study sector for this thesis) do not exist and have applied the model developed by Dunphy et al. (2007) in their conceptual sustainable construction business model. Previous empirical work on the UK construction sector has also used Dunphy et al.'s stages (Holton et al. 2010).

However Dunphy et al.'s (2007) model is not without its limitations. For example, even their sustainable enterprise still has the appearance of a profit-motivated firm. Tilley and Parrish (2006) and Tilley and Young (2009) all argue that a truly sustainable enterprise is one where profit is a means and not an ends. Additionally the issue of sufficiency does not appear to be addressed (Young and Tilley 2006). As such it can be argued that further stages of corporate sustainability exist beyond Dunphy et al.'s (2007) sixth stage. This is illustrated in Figure 2.13.

Phase	Human Sustainability	Ecological Sustainability
1 Rejection	– Employees and subcontractors are a resource to be exploited. Minimum expenditure on training – Personal and professional development avoided – No responsibility for the health, welfare of its employees, or local community – Community concerns rejected outright.	– Environment is a 'free good' to be exploited – Owners/managers hostile to external stakeholders aimed at achieving ecological sustainability – No responsibility for the environmental impact of its ongoing operations – No modification of operations to lessen future ecological degradation
2 Non-responsiveness	– Financial and technological factors dominate business strategy and HRM excluded – Labour a cost to be minimised – Industrial and employee relations strategies directed at developing a compliant workforce responsive to managerial control – Training, if present, focuses on technical and supervisory training Wider HR, social responsibility and community concerns ignored	– Ecological environment is not considered to be a relevant factor in strategic or operational decisions – Financial and technological factors dominate business strategies to the exclusion of environmental concerns. – Environmental risks, costs, opportunities and imperatives are irrelevant or not perceived at all
3 Compliance	– Financial and technological factors still dominate business strategies but senior management views the firms as a 'decent employer' – Emphasis on compliance - primarily a risk-reduction exercise – Community concerns addressed only when the company faces risk of prosecution or where negative publicity may impact the financial bottom line	– Financial and technological factors still dominate business strategies but senior management seeks to comply with environmental laws and reduce risk of potential environmental liabilities – Most obvious environmental abuses eliminated – Environmental issues unlikely to attract litigation or strong community action ignored
4 Efficiency	– Systematic attempt to integrate HR functions into a coherent HR system to reduce costs and increase efficiency – People a source of significant expenditure, to be used as productively as possible – Technical and supervisory training is augmented with interpersonal skills training – Community projects are undertaken where funds are available and where a cost benefit to the company can be demonstrated	– Ecological issues with costs systematically reviewed in an attempt to reduce costs and increase efficiencies by eliminating waste and by reviewing the procurement, production and distribution process – Evidence of environmental management systems but environmental issues which do not reduce costs or increase efficiency ignored.

5	Strategic proactivity	– Intellectual and social capital used to develop strategic advantage through innovation in products/services – Programmes to recruit and retain the best talent – Individual knowledge developed into organisational capabilities to make the organisation less vulnerable to the loss of key staff – Communities affected by the organisation's operations are taken into account – Initiatives to address adverse impacts on communities are integrated into corporate strategy – Corporation views itself as part of the community and contributes to its betterment	– Proactive environmental strategies supporting ecological sustainability are seen as a source of strategic business opportunity to provide competitive advantage – Product redesign reduces material use and new products and processes are developed to replace existing environmentally damaging ones or to satisfy community needs around sustainable issues – Organisation seeks competitive leadership through spear heading environmentally friendly products and processes.
6	The sustaining corporation	– Adoption of a strong and clearly defined corporate ethical position based on multiple stakeholder perspectives – Seeks to exert influence on key participants in the industry and in society in general to pursue human welfare, equitable and just social practices and the fulfilment of human potential of all – People are valuable in their own right	– Actively promotes ecological sustainability values and influence key participants in the industry and society – Environmental best practice is espoused and enacted because it is the responsible thing to do – Assists society to be ecologically sustainable and uses its entire range of products and services to this end – Promotes positive sustainability policies on the part of governments, the restructuring of markets and development of community values to facilitate the emergence of a sustainable society – Nature is valued for its own sake

Table 2.4: Phases in the development of corporate sustainability (after Dunphy et al. 2007:22-25)

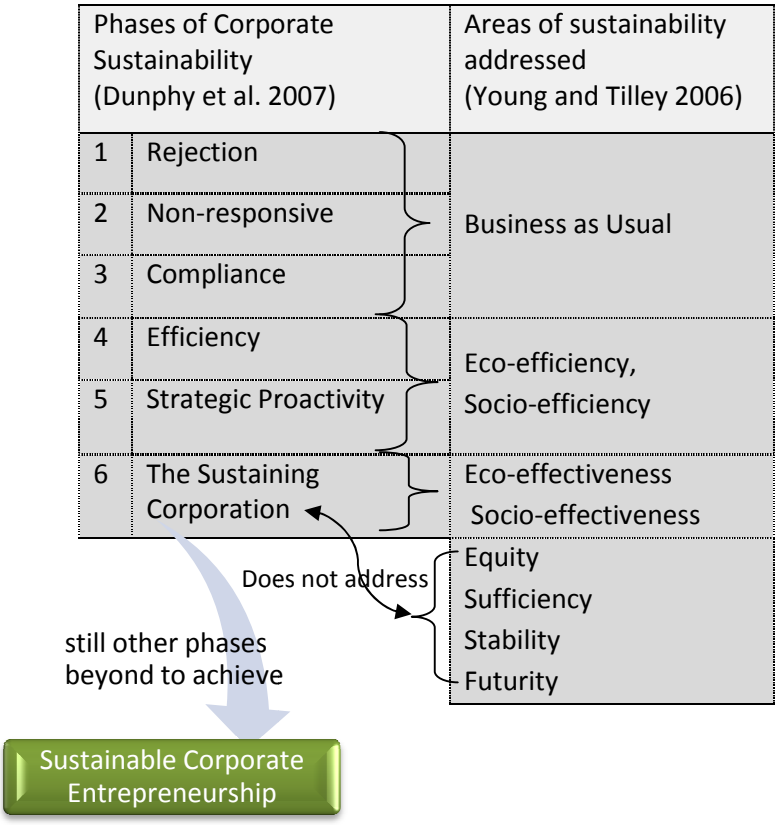


Figure 2.13: Phases of Corporate Sustainability and Sustainable Entrepreneurship, (after Young and Tilley 2006; Dunphy et al. 2007)

The next section of this Chapter draws together the concepts, theories and arguments presented to this point of Chapter Two in order to develop the foundation of the framework to manage firm's intangibles.

2.6 Intangibles and corporate sustainability

> *"The intangible perspective allows us to look at companies differently...various disciplines use this perspective to create a new view of organisations. This new view makes us see things differently and notice different things. It allows for new ways of diagnosing organisations and defining new problems. It also helps in developing new solutions to those problems" (Andriessen 2004b: 8).*

The shift from the industrial era to the knowledge era is well established in the literature outlined in section 2.1. In the industrial era "companies valued margins, investment and asset productivity for competitive advantage" but 21st century organisations it is argued "must focus on intangible elements", and their ability to create and exploit them, as an indicator of their success (Higgison 2003: 30). This 21st century shift acknowledging the importance of intangibles is not happening in isolation. As discussed in section 2.3, sustainable development has also become the mantra of 21st century business organisations (Dyllick and Hockerts 2002) and the importance of managing more than just

the financial bottom-line of a company is also emphasised. Literature on sustainable business models and stages of corporate sustainability also highlight the importance of a firm's ability to identify, measure, and manage its intangibles in order to response to the challenge of operationalising sustainable development into practice.

There is a very evident overlap between these two fields of research, corporate sustainability and intangibles/IC, in that they both highlight that a business needs to develop a new understanding of how to create and exploit their intangibles/IC in order to not only be successful in a post-industrial era economy, but also for the health and well-being of the planet and all its inhabitants. This overlap is currently under explored in the existing literature and it is this gap in knowledge where this thesis aims to make a contribution. Allee (2000) agrees with this observation arguing that researchers in the intangibles/IC community have been trying for a number of decades to answer questions similar to those the business and sustainability community have been trying to answer with little sharing of the advances in knowledge between the two communities. This thesis builds a conceptual bridge between these two fields by creating a conceptual framework based on the ***phenomenon*** and ***practice*** of intangibles/IC and their role in implementing more sustainable business models.

According to Maxwell (2005: 33) a conceptual framework is "the system of concepts, assumptions, expectations, beliefs and theories that supports and informs your research" (see also Miles and Huberman 1994; Robson 2002). Chapter Two, so far, has discussed these various elements of the conceptual framework for this thesis. In doing this, Chapter Two has also provided credence to the conceptual bridge being built. This section of Chapter Two draws together all of the concepts, theories, assumptions and arguments made above to identify elements of a framework to manage firms' intangibles and lay the foundation for the research design presented in Chapter Four (see section 4.3). The next section of this Chapter briefly outlines the previous research on intangibles/IC in relation to corporate sustainability and is then followed by sections which discuss the various elements of the theoretical framework.

2.6.1 Intangibles and corporate sustainability: current research

At present, there is a limited but growing body of intangibles/IC literature engaging with the sustainable business literature. This engagement can be categorised into four key areas which include: corporate reporting; managing for sustainability; green or sustainable intangibles/IC; and knowledge management. However, to date, the majority of the research linking the intangibles/IC literature to corporate sustainability is in the area of voluntary corporate reporting of nonfinancial performance. This literature is discussed in greater detail in section 2.7.5 of this Chapter. The literature in the other three categories has been referred to in various sections earlier in this thesis (for example see section 2.5.3).

This thesis sets itself apart from the existing intangibles/IC and corporate sustainability literature as it extends the conceptual bridge between these fields of research beyond reporting the ***phenomenon*** of intangibles/IC and the creation of metrics, to the ***practice*** based approach using it to understand how sustainable development is operationalised into business models. This is discussed in the next section of this Chapter.

2.7 A framework to manage firms' intangibles

The aim of this thesis is to understand the role of intangibles in operationalising sustainable development into practice in business organisations and in doing so provide a systematic investigation of the intangibles of firms in the Australian property and construction sector as a case study (see Chapter Three). The outcome is a theoretical framework to understand how firms approach intangibles at various stages of corporate sustainability (see Chapter Eight).

The framework developed in this thesis focuses on identifying, measuring/valuing, controlling, and reporting intangibles as they are identified in the literature as key features of any intangibles/IC management framework (Sanchez et al. 2000; Johanson et al. 2001; Kujansivu 2008). Each of these activities will be discussed briefly in the remaining sections of this Chapter. The next section of this Chapter, however, first provides a discussion on how the practice and phenomenon approaches to intangibles/IC underpin the framework and research design.

2.7.1 Phenomenon and practice of intangibles/IC

Figure 2.14 illustrates how it is proposed in this thesis that the ***practice*** and ***phenomenon*** based approaches intangibles/IC overlap with Dunphy et al.'s (2007) stages of corporate sustainability. This proposition forms part of the theoretical foundation of the framework. Figure 2.14, on the next page, also acknowledges the previously noted limitation of Dunphy et al.'s (2007) phase model (see section 2.5.4).

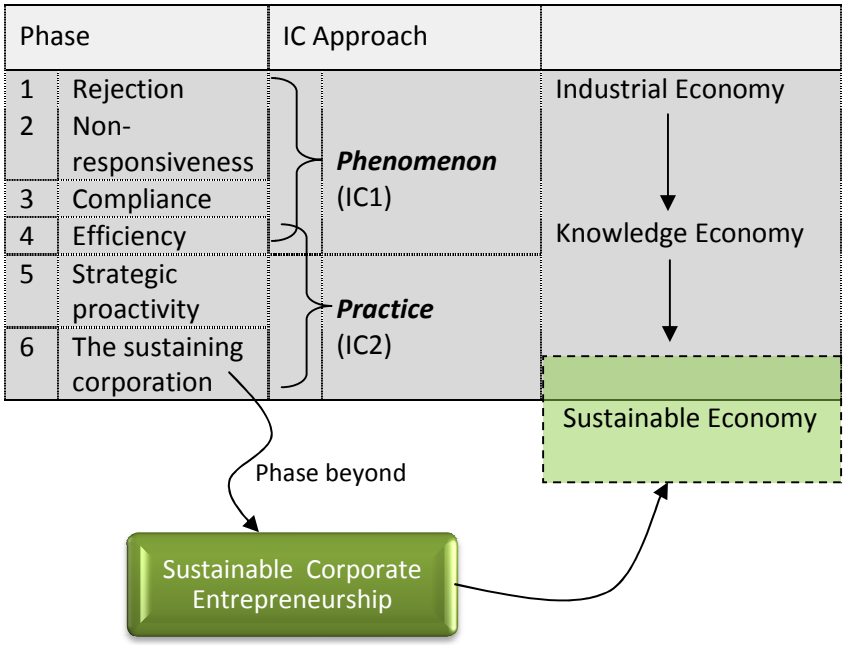


Figure 2.14: Intangibles/IC's relation to phases of corporate sustainability

As previously argued the ***practice*** based approach helps to change the discourse around the BCS, which focuses on linking corporate sustainability performance to company financial performance (see section 2.4.5). The conversation shifts to one which is focused on using a firm's existing resources to achieve a more sustainable outcome. This is illustrated in Table 2.5 below. However, it is also recognised that the shift from one conversation to the other is complex, nonlinear and messy. The ***practice*** based approach is also more congruent with the ideals of TBL corporate sustainability. It is critical of traditional financial accounting's influence on previous theoretical and empirical research in the discipline. Dumay (2009a: 194) puts it clearly when he argues that the ***practice*** based research agenda has "concluded that the potential of [intangibles/IC] will not be realised if management continues to force thinking about [intangibles/IC] into existing frameworks" - in essence striving to monetarise everything in order for it to be seen as valuable.

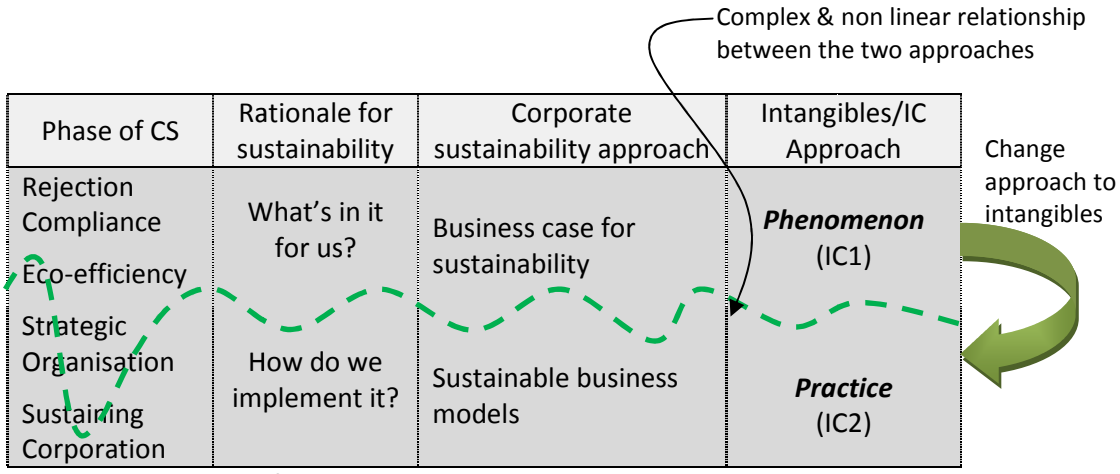


Table 2.5: Intangibles/IC approaches change the conversation from benefits to action

For the ***practice*** based approach Mouritsen (2004) argues that the management of a firm's intangibles is about orientating the production of a firm's intangibles/IC towards a purpose, which for this thesis, is sustainable development. A gap in the literature exists in relation to the ***phenomenon*** of intangibles/IC in the case study sector (see Chapter Three) and so the research design consisted of two primary stages. The first stage focused on the wider Australian property and construction sector and the ***phenomenon*** of intangibles/IC. The second stage narrowed its scope to a series of four case study companies to investigate the ***practice*** of intangibles in relation to operationalising sustainable development into their business models.

2.7.2 Identify

The identification of the primary categories of intangibles/IC was previously discussed in section 2.2.2. What is relevant to the development of the theoretical framework is the proposition that in order to both operationalise sustainable development into a business model and also progress to more advanced stages of corporate sustainability firm's must embed a sustainable development logic into all aspects of its intangibles/IC. This is illustrated in Figure 2.15 below.

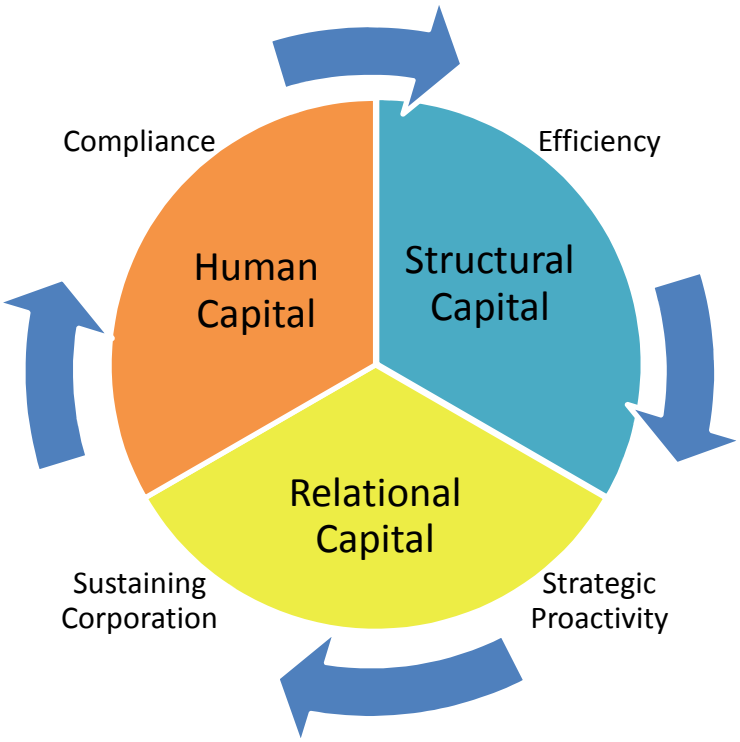


Figure 2.15: Whole of firm's resources needed to progress to advanced phases of corporate sustainability

Previous research agrees with the proposition that a key success factor in whether a company can implement sustainable development is the adoption of a holistic or systems approach (Azapagic 2003; Dunphy et al. 2007; Tilley and Young 2009) rather than in a

"piece meal way" (Glass and Dainty 2011: 6). This means sustainability is integrated systematically into their business model and is not just seen as an add-on. Smith and Sharicz's (2011) review the literature on how sustainable development is actually implemented in organisations and identified a number of key elements necessary to implement TBL corporate sustainability. However, often these elements are typically investigated individually in a "single descriptive paper per single element" (Ibid, 2011: 75). The key elements included governance, leadership, a business plan, measuring and reporting, organisational learning, culture and information systems. Their systems model illustrating how barriers in implementation arise when all areas are not addressed was discussed early in section 2.5.2 (see Figure 2.10 and Figure 2.11).

The approach to the empirical portion of this thesis differs from the previous empirical literature in its overarching approach, based on the intangibles/IC taxonomy (see Figure 2.15 above), to investigate firms in the case study sector. Where previous studies have tended to focus on a specific sub-element of an intangibles/IC category, such as environmental management systems, human resources, company culture, reporting, governance structures and value chains, this thesis develops a broader overall view of an organisation and the implementation of sustainable development into its business model. Equally, however, the limitation of this approach is that it allows for less depth in the investigation of any one specific area. The four case study companies provide the primary empirical data in this thesis in relation to how firms manage their intangibles/IC in order to implement sustainable development strategies. As illustrated in Figure 2.16 below, the focus of the empirical investigation is on the barriers and enablers experienced in the efficiency, strategic proactivity and sustaining corporation phases of Dunphy et al.'s (2007) model. This is because it was assumed that the case study firms, which were identified based on their recognition as sustainability leaders (see section 4.5.5.2) would, at a minimum, exhibit signs of the efficiency stage of corporate sustainability.

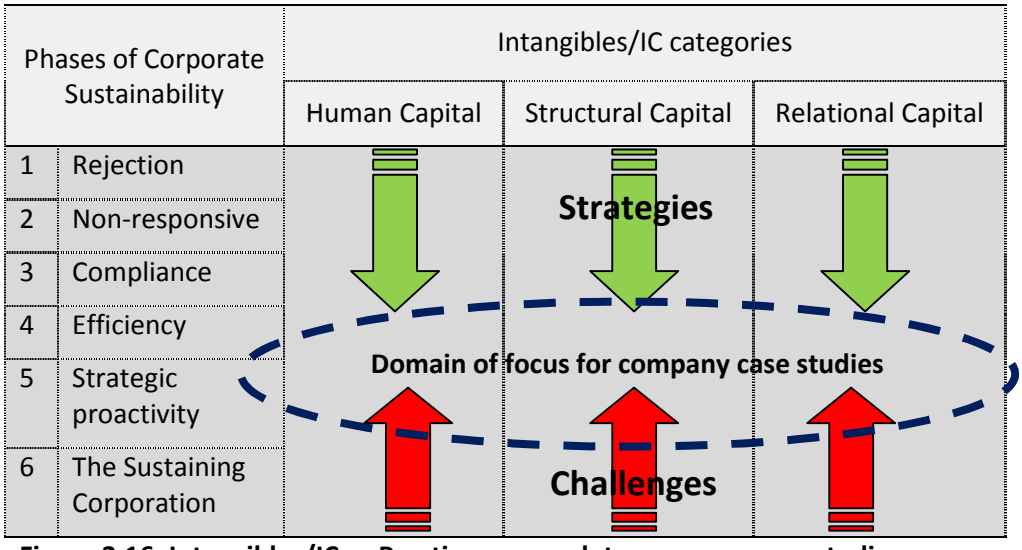


Figure 2.16: Intangibles/IC as Practice approach to company case studies

The final sections of this Chapter provide a brief overview of the other three key features of an intangibles/IC management framework: measure/value, controlling and reporting. Most of the existing literature in these areas is focused on the investigation of intangibles/IC as a ***phenomenon*** and very little from the ***practice*** based approach.

2.7.3 Measure/Value

The intangibles/IC community also suffers from an affliction found in the corporate sustainability community regarding measurement. Andriessen (2004b: 9) argues that the intangibles/IC community seems to "be obsessed with the need for measurement" justifying it with phrases like "what gets measured gets managed" and "in order to manage value creation we need to measure it." This measurement mindset has led to a large number of tools, some with up 160 indicators (Andriessen 2004b) for intangibles/IC. Chaharbaghi and Cripps (2006: 39) argue that the current dominant approaches to the measurement of intangibles/IC do "not have any explanatory power" and only serve as a management "device for control" to retain and exploit its intangible resources for the purpose of serving a firm's economic interests.

As previously discussed in section 2.2.5 there is a small but growing body of researchers who are critical of the discipline's focus on measurement, financial valuation and monetarisation. For example, Dumay's (2011: 352) longitudinal case study of an Australian government agency concluded that "engendering of management action" or mobilising an organisation's intangibles/IC does not necessarily require measurement, or more accurately "a set of concrete" measures relevant to the whole organisation. Another common argument of this group of critical researchers is that practitioners and academics in the field continue to focus on proving that intangibles/IC are connected to corporate financial performance in a fundamental way (Chaharbaghi and Cripps 2006; Dumay 2009a; Dumay and Rooney 2011). As discussed in section 2.2.6, Mouritsen (2006) labels this the ***phenomenon*** based approach to intangibles/IC.

The current focus on measurement in the field is related to the fact that the IC/intangibles field is that it is still heavily influenced by the traditional accounting literature. This literature, it is argued, is primarily focused on economic growth and preserving current forms of capitalism. Gray (2006: 795) argues that the problems with financial accounting are much larger than its inability to deal with "relatively trite and unimportant" matters like intangibles/IC and current attempts to revise it are "at best, typically ill-advised." He questions whether "any research which is not either cognisant of or directed towards sustainability and/or sustainable development makes any real sense in the context of current data about the planet" (Gray 2006: 793). Gray (1990) and Gray and Bebbington (2001) argue that environmental degradation is a direct consequence of the dominant approach to accounting. As Gray (2006: 798) argues "the very purpose of financial

accounting is to show how much more the rich people will receive as a result of economic activity while ignoring how that surplus has been appropriated or calculated".

The development of a measurement or valuation tool or specific indicators and measures for intangibles/IC is not within the scope of this thesis. It is also beyond the scope of this thesis to undertake a detailed review and critique of the existing methodologies and frameworks for valuing and measuring intangibles/IC. This has already been done by a number of academics in intangibles/IC community, most notably Dumay (2008), Pike et al. (2006), Andriessen (2004b), Snyder and Pierce (2002), and Bontis et al. (1999). However, it is within the scope of this thesis to identify the various approaches to the measurement and valuation of intangibles/IC employed in the case study sector and the case study firms and current issues relating to the measurement and valuation of intangibles. The empirical data in relation to this is found in Chapter Five (sector-wide) and Chapter Six (case study firms).

2.7.4 Control

Management control of intangibles generally refers to actions at the strategic level of an organisation aimed at directing its nonfinancial resources to increase its value-creating capabilities (Zhou and Fink 2003; Lonnqvist and Kujansivu 2007). To support the management control of intangibles/IC, again, several models and frameworks have been introduced in the literature, including more notable examples such as the Weightless Wealth Toolkit (Andriessen 2004b), the Knowledge Assets Dashboard (Marr et al. 2004), Meritum Guidelines (MERITUM 2001) and Intangible Asset Monitor (Sveiby 1997a). Again, as the aim of this thesis it not to develop a management control framework and it is beyond the scope of this thesis to provide a detailed review and critique the existing frameworks. However, a number of previous authors have already undertaken reviews of these and other existing frameworks (see Mouritsen et al. 2005; Dumay 2008; Kujansivu 2008; Heisig 2009; Karagiannis and Nemetz 2009). Kaufmann and Schneider (2004) concluded that although there are a number of existing frameworks in the academic literature on managing intangibles they generally lack:

- widespread acceptance;
- direct guidance on the management of intangibles; and
- remain abstract, as researchers are more focused on investigating measurement and reporting.

However, Kujansivu (2008: 27) argues that managing intangibles/IC "does not necessarily require any specific" intangibles/IC framework. In addition a number of general management frameworks are often applied to address intangibles/IC management (Ibid, 2008). Kaplan and Norton's (1996) Balanced Scorecard (BSC) is the dominant and most influential general management framework applied to intangibles/IC management control

(Marr and Schiuma 2003). Mouritsen et al. (2005) argue that although the BSC and intangibles/IC management appear to have a number of similarities, such as their focus on linking financial and nonfinancial indicators to firm strategy and allowing both financial and nonfinancial indicators to be part of a firm's reporting system, they have fundamentally different assumptions about strategy, organisational purpose, management and indicators. In essence the BSC is underpinned by positioning strategy and presents a story about a firm's budget, future profitability and market position (Ibid 2005). The position in this thesis, based on Mouritsen et al.'s (2005) work, is that application of the BSC would only be suitable if one took the ***phenomenon*** based approach to management control of intangibles/IC and not a ***practice*** based approach. Management control of intangibles/IC from a ***practice*** based approach is underpinned by a competency-based strategic approach concerned with firms' "efforts to improve their competencies...and strengthening its unique know how" in order to not only manoeuvre the continually changing external environment, but also to achieve the firm's desired identity and strategic aims (Ibid 2005: 22). Kaufmann and Schneider (2004: 383) agree arguing that companies are primarily motivated to manage their intangibles/IC because of the "support they deliver for implementing their strategy".

Similar to the measurement and valuation of intangibles/IC discussed in the previous section, it is within the scope of this thesis to identify the efforts that firms in the case study sector have undertaken to develop and direct their intangibles/IC to support the implementation of their sustainable development strategies. The empirical data in relation to this is presented primarily in Chapter Seven.

The next section of this Chapter outlines the relevant literature on reporting intangibles/IC. It focuses primarily on previous literature which has drawn conceptual links to the corporate sustainability reporting literature. It is relevant background information in which the analysis and discussion of the empirical data collection of this thesis can be compared and contrasted to in the relevant later Chapters of this thesis.

2.7.5 Report

From a corporate reporting perspective there are a number of similarities in the critiques levelled against traditional financial reporting found in the corporate sustainability and intangibles/IC reporting literature. Both have highlighted the need to improve the accuracy and reliability of information in company performance reporting. Key critiques of traditional performance (primarily financial) reporting include:

- It is an incomplete account of a business' activities (Estes 1976; Gray et al. 1993; Gray et al. 1996; Elkington 1997; Matthews 1997);
- It inadequately represents a company's performance and firm value (Yongvanich and Guthrie 2006; Guthrie et al. 2007);

- It does not give a true picture of the strengths and weaknesses of a company (Department of Industry Science and Resources (DISR) 2001);
- It only provides a snapshot of past financial performance (Leadbeater 1999); and
- It ignores resources that are truly of value to humanity and the planet (Brennan and Connell 2000; Mouritsen 2004; Gray 2006; Roslender and .Stevenson 2009).

Both bodies of the literature call for companies to disclose more information on their non financial performance. The intangibles/IC literature primarily argues for this to provide a more accurate picture of company future performance and the corporate sustainability literature to provide a transparent picture of the impacts related to a firm's activities.

Some authors have proposed integrating intangibles/IC and sustainability reports to give a more complete account of the economic and non-economic performance of a company (Guthrie et al. 2004; Moller and Schaltegger 2005; Yongvanich and Guthrie 2006; Hubbard 2009). For example, Guthrie et al. (2007) have proposed and developed an extended performance reporting (EPR) framework which combines intangibles/IC reporting and CSR reporting frameworks to address the limitations of traditional financial reporting. They argue that intangibles/IC frameworks address the limitation of traditional reporting and its incomplete picture of company value, whereas CSR frameworks show a truer picture of the company's activities, in particular the environmental and social impact of its activities. They combined Guthrie et al.'s (2004) intangibles/IC reporting framework and the Global Reporting Initiative (GRI) (2002) reporting framework. Pedrini (2007: 352) proposes that there is scope for a "corporate responsibility-intellectual capital-financial performance paradigm" in which a single strategic management process developed for companies who are facing the challenge of "both becoming socially responsible and trying to develop their immaterial resources".

It can by hypothesised this overlap between intangibles/IC reporting and sustainability/CSR reporting is in part due to the fact that most information about a firm's intangibles/IC is excluded from being disclosed in a firm's financial reports and so needs to be disclosed via other alternative, voluntary avenues. Regardless of the various frameworks Guthrie et al (2007) argue that any effort to overcome the limitations of traditional financial reporting should incorporate an amalgamated intangibles/IC and corporate sustainability/CSR reporting approach as both aim to overcome the limitations of traditional financial reporting and each field has strengths to add.

2.8 Summary

This Chapter has provided the background literature on intangibles and corporate sustainability relevant to the research problem outlined in Chapter One. The definition for intangibles has been drawn from the intangibles/IC literature and it informs the design of

the data collection and analysis. Despite a general acceptance that sustainable development is a worthwhile goal and calls for a convergence between the three pillars of economic development, social equity and environmental protection, the concept remains elusive and implementation has proven difficult. Gaps between theory and practice exist because of the ambiguous nature of definition popularised by the Bruntland Commission and barriers from the persistent worldview which favours economic growth and financial performance. There is a gap in the existing literature relating to current practices in implementing sustainable development in existing businesses. This research aims to draw upon concepts and theories of intangibles to fill this gap in the sustainable business literature. The review of the literature in this Chapter has shown that the ***phenomenon*** of intangibles/IC is an important and topical issue for business organisations. Improved understanding of intangibles/IC as a ***practice*** is an important factor in shifting the conversation about the BCS and implementing more sustainable business models. This Chapter has drawn a conceptual bridge between the corporate sustainability and intangibles/IC literature and identified key elements of a framework to manage firms' intangibles. In doing so it lays the groundwork for the research design presented in Chapter Four and the empirical data results and analysis presented in Chapters Five, Six and Seven.

The next Chapter (Three) provides an overview of the case study sector – the Australia property and construction sector, its key characteristics and the current state of the theory and practice relating to corporate sustainability and intangibles.

3 The Australian property and construction sector

This Chapter provides an overview of the case study sector, the Australian property and construction sector. The rationale for this sector as a case study was previously outlined in Chapter One (section 1.5). This Chapter begins by providing background information on the case study sector and narrows the focus of the research to the commercial building segment of the market. This is followed by a discussion of how companies in the sector are responding to the challenges of sustainable development. Relevant literature on the business case for sustainability and operationalising sustainable development into property and construction sector organisations is outlined. This is followed by a review of the previous studies on intangibles/IC in the property and construction sector in the final section of this Chapter. The existing literature on intangibles/IC in the property and construction industry is limited and not addressed by any substantial research project to date. As such, this thesis also fills an empirical evidence gap in this area.

3.1 Overview

This research project focuses on firms located within the Australian property and construction sector. According to the Property Council of Australia (PCA 2009b), the primary property industry body in Australia, this sector includes firms that develop, own, manage and construct buildings. **Funds management** is also a key activity of many firms in the sector. This is because of a unique characteristic of the Australian property and construction sector – the size of its Real Estate Investment Trust (REIT) in the Australian stock market. Overall the Australian stock market accounts for only one and a half percent (1.5) of the global stock market, however, it also accounts for approximately eight (8) percent of global real estate investment (De Valence 2004). Most of the large corporate firms in Australia operate across **all five** activity spheres presented in Figure 3.1 below (PCA 2009b).

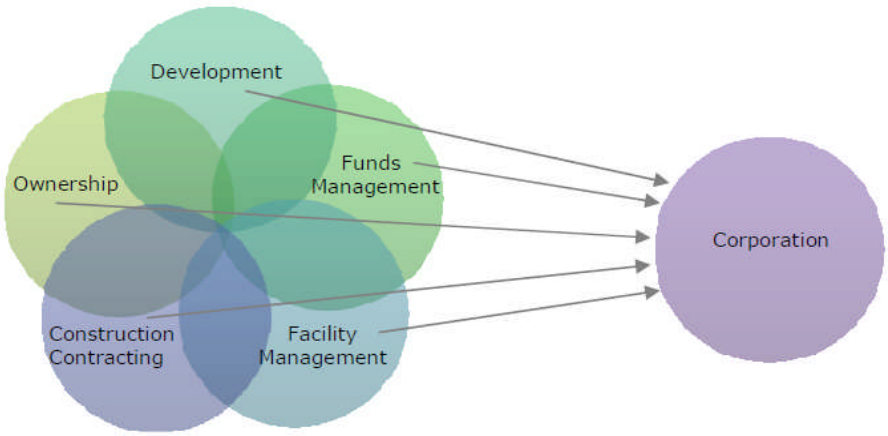


Figure 3.1: The Australian Property Universe (PCA 2009b: 6)

The property and construction sector is one of Australia's largest and most important industries, with movement in the industry's indicators often directly linked to changes in social, economic and political trends (Hampson and Brandon 2004). This sector is a major contributor to Gross Domestic Product (GDP) in the Australian economy and it is also one of the largest employing industries (ABS 2012). According to the Australian Bureau of Statistics (ABS), in 2008-09 the property and construction sector accounted for 6.8% of GDP, making it the fourth largest contributor behind Financial and Insurance services (10.8%), Manufacturing (9.4%), and Mining (7.7%) (ABS 2010). The sector was the fourth largest employing industry behind Retail Trade (11.2%), Health Care and Social Assistance (11.0%) and Manufacturing (9.2%) (Ibid 2010). Mid-way through 2009, there were approximately 984,100 people employed in the property and construction industry representing 9.1% of the total workforce (Ibid 2010), however, more recent data shows that employment levels rose nearly three percent in 2010–11 to approximately 1,033,900 people (ABS 2012).

As an economically significant industry with well organised representation, the property and construction industry, according to Heaton (2012), has a reasonable, but limited, amount of political power and influence in Australia. Given the large number of Australians directly employed in this sector and the number of Australians who are indirectly affected by the sector (homebuyers, building suppliers, real-estate agents, etc.) a "fair portion of the Australian voting population has a stake in its success" (Ibid 2012: 1). Recent construction industry related media has focussed on the affects of Global Financial Crisis (GFC), Government infrastructure spending and housing availability (ABS 2010). Heaton (2012) argues that recent home builder incentive schemes and national building stimulus packages provide evidence of a desire on the part of politicians to keep the property and construction sector on side. The sector is also fairly well-organised from a political lobbying standpoint, with groups such as Master Builders, the Housing Industry Association, the Property Council of Australia, Australian Constructors Association, the Green Building Council and the Construction, Forestry, Mining and Energy Union (CFMEU), all active in representing their members' interests in the political arena.

3.1.1 Sub-categories of the property and construction sector

For research, statistical and regulation purposes the property and construction industry is also commonly split into a three main sub-categories based upon type of construction activity, i.e. residential, non-residential and non-building/engineering (see Royal Commission into the Building and Construction Industry 2002; Australian Bureau of Statistics 2008). Some of these categories, such as non-residential, are then often further sub-divided because of the great variety in building types (De Valence 2004). According to the Royal Commission into the Building and Construction Industry (2002: 7) each of these

sub-sectors is said to be "substantially different" in terms of structure, efficiency and outcomes including the:

- type of employment relationships;
- type of contracting arrangements;
- business activity cycles;
- level of public and private involvement;
- type of competition; and
- level of productivity (Royal Commission into the Building and Construction Industry 2002: 7)

Given the diverse nature of the property and construction sector it was necessary to limit the scope of the case study to a specific segment of the overall sector. This is depicted in Figure 3.2 below. The commercial building segment of the market was selected as the primary focus of the case study. The next section of this Chapter provides an overview of this segment of the sector and the rationale for its selection as the case study for this thesis.

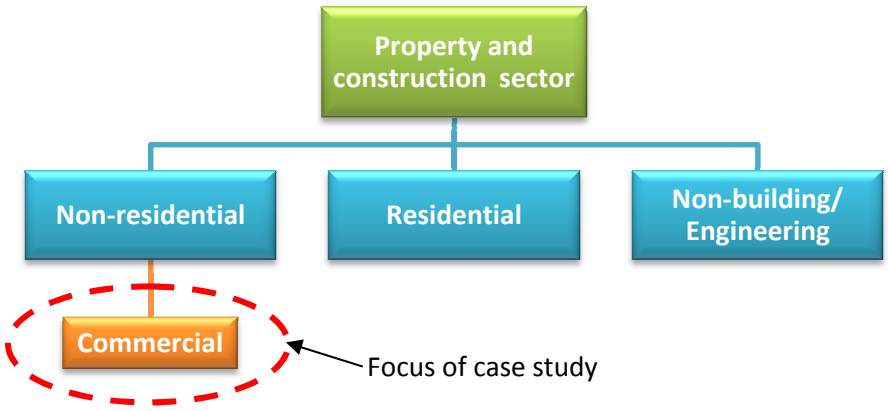


Figure 3.2: Breakdown of property and construction sector by building type

The next section of this Chapter provides the relevant background information on the Australian commercial building sector.

3.2 Australian commercial building sector

The following sections outline the rationale for the selection of the commercial building segment of the sector as the focus of this case study. It does so by discussing its similarities and differences to other Western commercial building sectors and its current engagement with sustainable development.

3.2.1 Shift to a service-based sector

The Australian commercial building sector, while distinct in some ways from other the other segments of the property and construction sector (i.e. residential or engineering) as outlined in section 3.1, is similar in many ways to the commercial building sectors of other Western countries. For example, the sector is following a documented trend found across industrialised nations towards ever increasing amounts of refurbishment and maintenance work as key activities versus new building construction (Bon and Crosthwaite 1999; De Valence 2004). In developed countries property and construction industries are no longer "focused on large-scale production but on the services provided by the built environment" (Carassus 2004: 6). In Australia, for example, Wilkinson and Reed (2008) report that the amount of **new** commercial buildings each year is estimated to be between only one to three percent of the total building stock. The majority of the sector's activities are the refurbishment and management of existing building stock (Ibid 2008). Relating this trend to the knowledge economy literature (see section 2.1), the commercial building sector provides an interesting case study. It is an industry whose roots are in the industrial economy and the provision of manpower and tangible assets and it is now shifting towards becoming more a service or knowledge-based sector. As previously outlined in Chapter Two (section 2.1.1) intangibles are extremely important to knowledge-based firms. Price and Newson (2003) also highlight that strategic thinking, particularly longer term strategy, is becoming increasingly important in this sector as it adapts to its changing environment.

However, unlike most other firms in the knowledge economy the enterprise value of firms, particularly of listed firms, in this sector is based primarily on the value of tangible assets. In fact, the net tangible assets of many of the publicly traded companies in this sector actually exceed the market value (Brand Finance 2008). In essence this means that they are trading at a discount to their book value. This characteristic of firms in the sector is actually counter to one of the key rationales for the study of intangibles/IC – that is the growing gap between a firm's market value and book value (Lev 1997). However, as discussed in Chapter Two (section 2.2.5) this premise for the existence of intangibles in an organisation is contested. Dumay (2012: 5) argues that this is an unproven "grand narrative" in the literature driven by seminal authors on the topic equating the difference between market to book values as intangibles or intellectual capital (see Edvinsson and Malone 1997; Stewart 1997; Sveiby 1997b). This has led to the two going "hand in hand ever since" (Ibid, 2012: 5).

3.2.2 Sustainable development and the commercial building sector

From a sustainable development perspective, the Australian commercial building sector is faced with the same sustainable development related issues relevant to all sectors within

the built environment and similar to those of many other Western Nations. These include, but are not limited to:

- water consumption;
- energy use;
- ethical material sourcing and resources use;
- embodied energy issues;
- indoor environmental quality and occupant health; and
- loss of eco-systems, habitat destruction and increased urban salinity (Reed and Wilkinson 2005; ABCB 2009)

The above list is primarily focused on environmental aspects of the TBL because, like most other Western countries and other industry sectors in general, the social sustainability aspect of TBL sustainability is not as well defined conceptually and tends to focus on community or stakeholder engagement issues and corporate philanthropy (Cuthill 2010; Dempsey et al. 2011). As a result much of the previous literature and action taken to operationalise sustainable development tends to focus on addressing environmental impacts.

Australia has approximately 130 million square meters of existing commercial building stock and most of this existing stock is said to perform poorly against sustainability benchmarks (Kempener 2007; Davis Langdon Australia 2008). Efforts have been taken to improve the thermal efficiency of new building stock in Australia, through regulation in its national building code enacted in 2005. However, it is argued that these standards will still not "deliver sufficient reductions in CO_2 emissions to effect climate change…within the timeframe for action identified by Stern (2007)" (Wilkinson and Reed 2008: 1). Boardman (1991) also demonstrated the replacement of the existing building stock is so slow that it will take hundreds of years to bring all of the stock to current standards of energy efficiency based on typical replacement rates. Typical replacement rates are said to be around two to three percent per annum in most global cities (Jones Lang LaSalle, 2005).

Primary drivers for building eco-efficiency refurbishments and upgrades include aiming to reduce vacancy rates, increase rental levels, mitigate obsolescence, and to achieve a higher quality rating from the Property Council of Australia (PCA) (Wilkinson and Reed 2008). For example, office buildings in Australia receive a quality rating from the Property Council of Australia (PCA) using a matrix. This matrix now includes sustainability criteria to achieve a 'Prime' rating. Buildings are classified as either Prime, A, B, C or D grade space. Snushall (2005) also found that the brand value of a green/sustainable label and the potential for an increased investor base (i.e. socially responsible investment funds) to be two other key drivers for implementing sustainable development policies in publicly listed firms. A more recent study by Prior and Faria (2010) found similar key drivers as Wilkinson and Reed

(2008) motivating firms to improve their building stock; reducing carbon emissions and energy consumption, improving resource efficiency, such as water use and recycling, and improving working conditions for employees.

3.2.3 Global leaders in environmental management

The Australian sector is also distinct from many of its Western counterparts based on their growing role as leaders in environmental management. A recent global survey of property companies concluded that the "Australian property companies are the clear environmental leaders of the globe", particularly when looking at the commercial building segment of the market (Kok et al. 2010: 25). Australian property companies outperformed their European and American peers (see Figure 3.3). The top five Australian companies are identified in the Figure 3.4, however, there is a marked difference in their measurement and implementation scores. That is actual evidence of implementation and performance versus having a management system and policies in place differs greatly between the top two companies and the other three. The Australian property and construction sector is also unique in that the majority of its large corporate firms (public and private) employ a sustainability manager (Kok et al. 2010). One hundred percent of public companies in the study employed an environmental or sustainability officer and eighty percent of the private companies employed one, which was well above the percentages of other countries in the study.

	Europe	Australia	U.S.	Asia
Sample	64	5	37	20
Management & Policy	29.3%	71.7%	39.1%	24.8%
	(17.0)	(23.7)	(17.9)	(22.9)
Implementation & Measurement	17.7%	47.1%	20.2%	15.9%
	(14.8)	(26.6)	(12.3)	(13.9)
Total Score	22.3%	56.9%	27.7%	19.4%
	(13.8)	(23.0)	(12.1)	(16.9)

Figure 3.3: Global environmental management results, Source: (Kok et al. 2010: 28)

Rank	Company	Management & Policy	Implementation & Measurement	Total
1.	GPT	83	89	86
2.	Stockland	83	80	81
3.	Commonwealth Property Office Fund	91	66	76
4.	Colonial First State Retail Property Trust	87	63	72
5.	Valad Property Group	74	53	61

Figure 3.4: Top Five Companies for Environmental Management, Source: (Kok et al. 2010: 26)

Kok et al. (2010: 29) also concluded that property type "matters for environmental performance." They found that firms which are active in the office market seem to have a "consistently better environmental performance" and that "Swedish and Australian property investors are ahead of the curve" (Ibid 2010: 29) and even have better environmental performance than their counterparts in the United Kingdom. The next section of this Chapter provides the relevant background information regarding the property and construction sector's response to sustainable development.

3.3 Sustainable development

3.3.1 Defining sustainable development

Defining what constitutes sustainable development in the property and construction sector varies depending upon who is defining it, what approach and philosophy they are influenced by (i.e. eco-efficiency versus a deep green philosophy), and the scale at which it is defining (i.e. Individual building versus urban scale or construction phase versus operational phase). This is in line with the discussion in Chapter Two regarding the multiple interpretations of sustainable development (see section 2.3.2). Most definitions revolve around the tangible products of the sector (i.e. the building or its materials) and usually describe buildings which have reduced their impact on the natural environment. Definitions generally recognise buildings with lower environmental and social impacts of a building across a building's life cycle (i.e. construction phase, operation phase, or end of life).

3.3.2 Implementing sustainable development

As mentioned above, for the property and construction sector the aims of sustainable development have been translated into a growing movement to improve the efficiency of building performance, while minimising negative environmental impacts associated with the various stages of a building across its life-cycle (i.e. design, construction, operation, demolition, and refurbishment). In Australia, a number of indicators and metrics exist to benchmark the greenness or sustainability of individual buildings and its components parts (Crawley and Aho 1999; Iyer-Raniga and Wasiluk 2007a). The main voluntary green building rating tool in Australia is the Green Star suite of tools. It was developed based upon a similar framework used in USA and Canada (LEED)[2], and has been modified to suit local conditions (Iyer-Raniga and Wasiluk 2007a).

Glass and Dainty (2011: 4) argue that while these tools have helped to make the complexities of addressing TBL sustainability throughout the building delivery process "more manageable and accessible" they have also experienced some backlash from the

[2] Leadership in Energy and Environmental Design

industry. They are critiqued for reducing sustainability to a "tick box exercise" (Ibid 2011: 5) and their tendency to focus on environmental issues. Just as with other rating tools, such as corporate social responsibility (CSR) ratings (Chatterji and Levine 2006; Porter and Kramer 2006), the current profusion of competing and sometimes contradicting rating tools, checklists and eco-labels adds to firms' confusion in this sector regarding how to operationalise sustainable development in practice (Iyer-Raniga and Wasiluk 2007a).

3.3.3 Environmental paradigms in the property and construction sector

According to Stubbs and Cocklin (2008) the dominant environmental paradigm for Australian businesses is eco-liberalism. The concept of eco-liberalism was discussed in Chapter Two (see section 2.4.3) Australia has a long resistance politically to ecological restructuring and has focused on soft or weak EM[3] discourse for environmental policy, particularly in response to climate change (Curran 2009). This resistance is fuelled in part by Australia's large industrial economy, which relies heavily on exports of coal and gas (Ibid 2009).

The position of this thesis is that the prevailing worldview in the property and construction sector is also eco-liberalism. However there is evidence of the EM worldview influencing the property and construction sector's interaction and experience with sustainable development (see for example Lawther et al. 2005; GBCA 2006; Wilkinson and Reed 2008; Wasiluk and Horne 2009). This is discussed further in section 3.4. Qualitative empirical studies have reported on the influence and limitations of EM in the property and construction sector in other countries. For example, Jensen and Gram-Hanssen (2008) investigated the effect and consequences of EM trends on the Danish residential building industry (Jensen and Gram-Hanssen 2008). They analysed EM's influence on the governance, standardisation and visibility of sustainable buildings by examining three residential case studies and a variety of sustainable building policies and tools. They concluded that EM has penetrated the Danish construction sector and is having a positive effect on the mainstreaming of sustainability goals and initiatives. However, achieving actual sustainable outcomes in building projects was said to be most likely the result of top-down regulation and the building code. This is an important observation of the effectiveness of EM theory in the property and construction sector and its ability as a discursive strategy to push firms beyond the low hanging fruit of marketable win-win eco-efficiency measures.

In the current economic paradigm regulation is often required when market conditions are not enough to stimulate change (Murphy 2000). A study of small to medium sized enterprises (SMEs) in the UK construction sector found that market forces were discouraging more environmentally sound behaviour (Revell 2007; Revell and Blackburn

[3] Ecological Modernisation (EM) is discussed in Chapter Two (section 2.4.4)

2007), particularly with the sustainability laggards. Where the sustainability leaders in Stubbs and Cocklin's (2008b) study identified key barriers to an EM based approach being related to their value chain not being ready for alternative sustainability-driven market practices, sustainability laggards in the UK study highlighted the market forces of cost and speed as the key barriers. Revell and Blackburn (2007) argue that the win-win business case is not enough to get small to medium enterprises (SME), particularly builders, to change their practices to incorporate environmental management. They argue that the government has placed a great deal of faith in the BCS and voluntary action by firms, but that there was little evidence of any reform taking place. A more recent follow up study by Revell et al. (2010) found a shift in attitude towards environmental responsibility of SMEs and that firms were taking steps, such as recycling and reducing carbon emissions, to be more environmentally responsible. However, the follow up study included a notably smaller sample of construction firms so conclusions cannot be made about the shift in attitude in this sector specifically. Respondents in the UK study also indicated that more legislation is needed to level the playing field stating "that more stringent environmental legislation was the only way to ensure that the industry reduced its environmental impact" (Revell and Blackburn 2007: 415). As previously mentioned above there is a general resistance against environmental legislation in Australia and in cases where it has been implemented, it is critiqued for being too weak to have a significant impact (Wilkinson and Reed 2006). EM's ability to achieve sustainable development outcomes is also limited by the fact that EM characterises the types of processes towards sustainability but does not judge the outcomes (Jensen and Gram-Hanssen 2008). As such a paradigm shift of the wider building and construction sector from eco-liberalism to EM could lead to weak or strong sustainability outcomes depending on the actors and the processes. This demonstrates the messy nature of addressing sustainable development.

Newell (2008) points out that some of the large corporate firms in Australia have been somewhat more strategic in their view of the benefits of win-win business case benefits due to facing different drivers associated with shareholders, investors, competitors, and the government. This agrees with the literature discussed in Chapter Two (section 2.4.5) that there is no one universal BCS because of a number of complex factors.

3.4 The business case for sustainability in the property and construction sector

In an effort to help demonstrate the financial viability of adopting a sustainable approach to the creation and management of the built environment a great deal of research effort has been devoted to studying the capital costs and paybacks of sustainable buildings in a number of Western countries including the United States , Canada , United Kingdom and

Australia (Kats 2003; US Department of Energy Efficiency and Renewable Energy 2003; Snushall et al. 2005; GBCA 2006; Ries et al. 2006; GBCA 2008; Prior and Faria 2010). In Chapter Two the limitations and difficulties associated with linking environmental performance to financial performance, beyond the low hanging fruit of efficiency, were discussed (see section 2.4.4 and 2.4.5). The situation is no different in the property and construction sector.

For example, Reed and Wilkinson (2007) and Snushall et al. (2005) both argue that this focus on studying capital cost and paybacks is because firms in this sector will not put green or sustainability ahead of profit. They state:

> *"...whilst sustainable buildings have advanced in many aspects including design and construction, there remains a strong argument that the financial viability of a building will determine to what degree a building is allowed to be sustainable. The majority of office buildings are owned by enterprises that are profit-seeking as their first priority, rather than sustainability as their first priority, and consequently the financial drivers relating to sustainability must be fully incorporated into any decisions about a sustainable building. It can be argued that no viable competitive business would rather be green than make a profit for its shareholders"* (Reed and Wilkinson 2007: 7)
>
> and
>
> *"It is very clear that the property industry will not sacrifice profit for the environment if it is not forced to do so by the planning bodies or its end users."* (Snushall et al. 2005: 1)

The quote by Reed and Wilkinson (2007) also raises the issue of profit-driven business models and their ability to achieve sustainable development. It fits with earlier critiques in this thesis (for example section 2.5.1) that to make progress towards sustainable development firms need to examine, re-assess and revise their business models to be driven towards the creation of sustainable wealth (see section 1.6.1) and not just financial wealth. As discussed in Chapter Two, this mindset of profit-driven firms towards sustainability is based on a business model with the flawed assumptions (section 2.5.2). It also highlights how the BCS in the sector and wider built environment literature is focused on greening the built environment with little focus on the changing the business models of the organisations themselves to be more representative of a sustainable enterprise. This is discussed further in section 3.4.2. Additionally, in Australia there is a growing recognition focusing at the individual building level is too narrow a scope to achieve the goals of sustainable development. As a result there is a movement towards broadening the scope of the sustainability agenda to the regional and urban scale (GBCA 2012).

3.4.1 Does green pay?

There has also been a lot of research focus in the built environment sector to address barriers to the BCS. BCS researchers have sought to: demonstrate the benefits of occupying

green buildings (Armitage et al. 2011); and the impact of green building ratings (McAllister 2009) and sustainability upgrades (Wilkinson and Reed 2008) on existing property values. To date the results are inconclusive, in part due to: a lack of comparable properties; the difficulties in establishing causal links between property value and sustainability features; and, structural barriers in the valuation process. Researchers in Germany (Lutzkendorf and Lorenz 2005; Lutzkendorf and Lorenz 2007), Australia (Boyd 2006) and the UK (Sayce et al. 2004) argue that there is a need for building valuations to take account of sustainability features – which are currently under and incorrectly valued – in order to improve the uptake of sustainability in the sector. Mansfield (2009: 91) found, however, that the valuation of sustainable features is not a straightforward task and is hampered by "comparative difficulties" and "achieving consensus" regarding the sustainable criteria and how they should be objectively assessed. Snushall et al. (2005: 35) agrees adding that measuring the impact of sustainability initiatives in the built environment is often "subjective and complicated". Additionally discussed in Chapter Two (section 2.4.5), often the benefits of taking a more sustainable approach accrue to a firm's intangibles/IC and efforts to measuring the ***phenomenon*** of intangibles/IC are misguided, especially given the current state of knowledge in the critical intangibles/IC literature.

Regardless of these barriers, examining how managing and improving environmental performance affects property valuations is still a popular research agenda in this sector as a means to improve the BCS. This is particularly because the value of many firms in the sector is closely linked to the value of their tangible assets. As mentioned above, the consensus is that there is still no solid empirical evidence regarding superior financial values of green or sustainable buildings. Prior and Faria's (2010) recent study tried to establish links between green attributes and financial performance of office buildings, based on actual data for properties owned by five Australian public property and construction firms. However they concluded that there is still a lack of "hard data" to substantiate the "expectation that 'green pays' for Australian office buildings, due to lower energy costs, higher rentals and lower vacancies" (Ibid, 2010: 3). Prior and Faria (2010) did find some correlations between buildings with an energy performance rating and its net income, valuation and vacancy rate. However, as no data sets for otherwise broadly comparable buildings that have different green ratings were available the generalisability of the results is limited.

However, what is more relevant to the propositions of this thesis is the growing body of literature in the property and construction sector looking at the barriers, beyond the financial, to the uptake of sustainable development. Evidence is mounting that it is the intangibles/IC of an organisation which can have a negative or positive impact on operationalising sustainable development. For example, Pinkse and Dommisse's (2009) assumption was that it was the split incentive or principle/agent problem (i.e. one party

bears the financial costs where the other ones receives the financial benefit) which was the key barrier to the industry's uptake of clean technology. However, their case study of four Dutch construction firms concluded that it was actually the business model of some of the companies that was the key barrier; in particular, those companies that tended to rely on outsourcing and therefore did not build their own internal knowledge-base (i.e. human and structural capital) on the clean technologies. The firms that actively gathered information and built their internal capacity were keener to adopt energy-efficient technologies on projects. A recent and ongoing study of commercial buildings owners in Australia also found that firms whose building management is at least partially in-sourced performed better by as much as 1.3 stars on a five star energy rating scale for their individual building assets. Buildings that had an energy efficiency training program for managers performed better by ½ a star and those with building managers with higher levels of energy efficiency knowledge performed better by 1.3 stars (National Project Consultants and Exergy Australia 2009).

As previously outlined in Chapter Two, this thesis contributes to filling gaps in knowledge with regard to operationalising sustainable development into property and construction sector business models. It intends to add to the growing body of literature which is pushing beyond studying the costs and paybacks of taking a sustainable approach to production of firms' commodity (i.e. the built environment) in this sector to one which focuses on the role of intangibles/IC and embedding sustainable development into firms' business model. If the focus is on first transitioning to and creating sustainable enterprises and sustainable business models - then green or sustainable building projects should naturally emerge as clear evidence when firms implement company strategies and enhance their value proposition (i.e. the creation of sustainable wealth).

3.4.2 Focus on the company not the asset

As argued above, currently the research in the built environment literature is focused on the BCS at the project or building scale, and linking corporate financial performance to the sustainability or environmental performance of the built environment. From a general business perspective this stems from the dominant sustainability discourse that espouses that improved environmental and social performance leads to an increase in company financial performance (Hajer 1995; Porter and van der Linde 1995; Carroll and Shabana 2010). The limitations of this approach were discussed in Chapter Two (section 2.4.5).

Newell (2008) argues that evidence of a shift to a more strategic approach to embedding sustainable development in Australian ASX-listed firms business models is mounting, however, Glass and Dainty (2011: 6) note that for firms generally in this sector sustainability is still approached in a very "piece meal way". Bryson and Lombardi (2009) argue that the integration of sustainability into business models in the property and construction sector

can be explained using institutional theory (Aldrich and Ruef 2006) and the resource based theory of firm. The RBV was previously outlined in Chapter Two (section 2.1.3) and Bryson and Lombardi (2009) argue it explains firms' response from an internal perspective. Firms are driven to embed sustainability into their business model in response to the changes happening in the institutional structures that surround them and to emerging issues such as corporate sustainability. Their intention is to gain competitive advantage by developing new competencies or a first mover advantage (Porter and van der Linde 1995). Institutional theory addresses the external pressures on firms (DiMaggio and Powell 1983) which is particularly more relevant to public or listed firms – as they have social pressures from a number of different stakeholders compared to private firms. However, for both public and private firms, the development and construction of the built environment involves "substantial financial investment" (Bryson and Lombardi 2009: 99). This financial capital typically comes from the investment community, particularly institutional investors, who are increasingly "sensitive to issues of corporate social responsibility and ethical investment" (Ibid 2009: 99). As a result firms in the sector need to demonstrate that they are addressing issues of corporate sustainability on more than a superficial level.

Newell (2008: 525) argues that despite a growing focus on sustainability by the sector "few studies have examined property companies' approaches to sustainability." This thesis is focused on understanding the ***phenomenon*** and ***practice*** of intangibles/IC to understand how firms operationalise sustainable development into their business model in order to address this gap in the literature. Some empirical examples exist in the literature which focus on the company or business rather than the project or product, including Holton et al. (2010), Bryson and Lombardi (2009: 99), Newell (2008) and Petrovic-Lazarevic (2008). Holton et al.'s (2010: 156) case study of four precast concrete firms found that by implementing "management systems and continuous performance improvement cultures" firms were able to develop the necessary capabilities to "manage for sustainability". As a result the firms had "progressed naturally" from compliance to an efficiency phase of corporate sustainability (Ibid 2010:156). In intangibles/IC terms this is representative of firms making changes to their structural capital. Bryson and Lombardi (2009: 97) conducted a case study of two UK property firms which were established with achieving sustainable development outcomes and not profit maximisation as their business model. They reported that although the firms continued to experience difficulty responding to the tension between environmental and social sustainability, financial viability, profit and growth, they had developed a new "discursive formation of profit and value" to balance these tensions. For example one of the firms sets a pre-determined level of profitability to be achieved on a project rather than trying to maximise profitability on each project. They have also developed 16 sustainability principles into a Charter against which each project or opportunity has to be assessed. However, the firm indicated that to date this had not yet

been tested on their adherence to the Charter – for example a good development opportunity presenting itself that scored low on their Charter. Both firms also highlighted the important role of staff in upholding the values of the firm and ensuring that all of the sustainability features incorporated into a project are not cut when tensions arise with financial viability. They concluded that these two firms' business models appeared to "represent an important transformation from property development business models that are solely constructed around profit maximisation" (Bryson and Lombardi 2009: 99). Conceptually they do match some of the characteristics described by Young and Tilley (2006) such as sufficiency and effectiveness.

Another gap in the research on property and construction sector organisations is the lack of focus on embedding sustainability into all of the strategic levels and functions of the organisation. In fact a large proportion of the research in relation to environmental and social sustainability in this sector has focused on the project or building scale. Glass and Dainty (2011) propose that the research agenda in the built environment needs to be expanded and also focus on the company or organisation as a unit of analysis. According to de Wit and Meyer (2005) there are various strategic levels in which an organisation operates, including the network, corporate, business unit, and functional level. This concept is represented in Figure 3.5 below. By utilising the intangibles/IC concept the ***practice*** based phase of the empirical data analysis and discussion addresses the various strategic levels of an organisation. The case studies presented in Chapter Six and Seven discuss examples from across all of the strategic levels of the organisation.

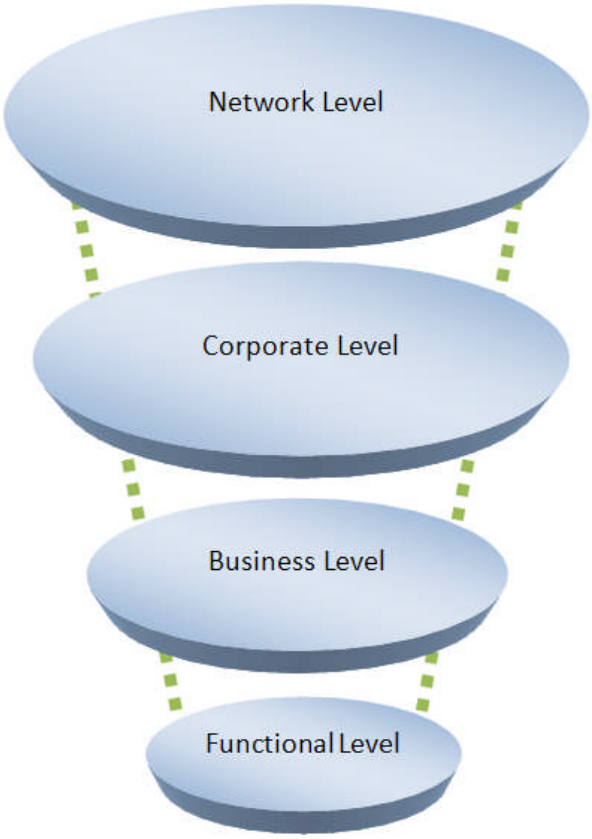


Figure 3.5: Strategic levels of an organisation, based on de Wit and Meyer (2005: 6)

The next section of this Chapter reviews the existing literature on intangibles in relation to the property and construction sector.

3.5 Intangibles and the property and construction sector

To the best of my knowledge, no studies exist in the intangibles/IC literature which have specifically investigated the ***phenomenon*** or ***practice*** of intangibles/IC in the property and construction sector. Tull and Dumay (2007: 515) note that most intangibles/IC research has focused on knowledge intensive companies that typically have a "high proportion" of their market value ascribed to their intangibles – leaving the relevance of the intangibles/IC for "others types of firms subject to speculation or silence." However, some studies focusing on knowledge management activities in construction and engineering firms exist in the literature including Chen and Mohamed's (2007) study of Hong Kong contracting organisations, Subashini et al.'s (2005) study of UK construction sector SMEs and Egbu's (2004) study of knowledge management and intangibles/IC's role in improved organisational innovations in UK construction companies. In all three of these studies, the focus was on the use of information technology to improve knowledge capture and knowledge transfer within the organisation. No previous studies exist on knowledge management in property firms, however, there are a number of studies in the facilities

management literature (Pathirage et al. 2008; Waheed and Fernie 2009). While there is considerable overlap, an important distinction between intangibles/IC management and knowledge management is that knowledge management is narrower in its scope (i.e. information and knowledge) whereas intangibles/IC management extends to other issues such as stakeholder relationships, brand, business processes, governance and leadership (Kujansivu 2008).

3.6 Summary

The built environment, which is developed, managed, constructed and owned primarily by this sector, has a documented impact on the environmental sustainability of the planet and the health and well-being of its human inhabitants. In Australia, there is growing evidence of global leadership in environmental management (Kok et al. 2010) and best practices in sustainable building design and construction (Bond 2010). There is still, however, a very active discussion about the rationale for why companies would adopt a more sustainable business model. This has resulted in an ongoing research agenda to prove the BCS (Snushall et al. 2005; GBCA 2006; Davis Langdon Australia 2007; Davis Langdon Australia 2008; GBCA 2008; Wilkinson and Reed 2008; Davis Langdon Australia 2009; Wasiluk and Horne 2009) or that in fact it does pay to be green (Snushall et al. 2005; Prior and Faria 2010). While there is a small body of literature highlighting examples of firms' efforts to operationalise sustainable development into practice beyond the creation of green buildings (Newell 2008; Petrovic-Lazarevic 2008; Holton et al. 2010; Willets et al. 2011) the focus of built environment research agenda is still primarily focused on greening the built environment and not the creation of more sustainable companies (Glass and Dainty 2011).

This research aims to fill this gap in the built environment literature by focusing on **how** firms in the sector are embedding sustainability into practice and not just **what** the benefits are of doing so. It does so by first investigating the ***phenomenon*** of intangibles/IC in the case study sector followed by an examination of the ***practice*** of intangibles/IC as based on the conceptual framework developed in Chapter Two. The next Chapter, Chapter Four, outlines the methodology, corresponding research design and data collection methods employed to address the research aim and questions presented in Chapter One.

"Not everything that can be counted, counts, and not everything that counts, can be counted"

Albert Einstein

4 Methodology

This Chapter presents the methodology used for this thesis to address the research questions and aims outlined in Chapter One. It begins with a brief overview of methodology followed by a discussion of the research design developed to help answer the research questions. The final portion of this Chapter discusses the research methods used to collect and analyse the empirical data along with their limitations.

4.1 Methodology overview

Methodology, according to Blaikie (2007:7) is the "analysis of how research should or does proceed" or the philosophy of data collection and analysis techniques (Saunders et al. 2007). Methodology discusses how theories are generated and tested, the types of logic used and how different theoretical lenses relate to the topic under investigation (Blaikie 2007). A number of different authors (see for example Crotty 1998; Blaikie 2007; Creswell 2009; Gray 2009) have developed models depicting the relationship between epistemology (e.g. objectivism, constructivism), ontologies (e.g. positivism, interpretivism, pragmatism), approaches (deductive, inductive), strategies (e.g. grounded theory, case study, survey), and data collection methods (i.e. interviews, focus groups, questionnaire), however, the *Research Onion* model by Saunders et al. (2007) was identified as a particularly inclusive and accessible model to visualise the approach taken for this research. The shaded sections of Figure 4.1 depicts the Research Onion with the positions taken for this thesis - a constructivist pragmatic philosophy applied through a case study methodology with mixed methods approach to data collection. What was missing from Saunders et al.'s (2007) model is two other research approaches as outlined by Blaikie (2000) - the retroductive and abductive approach – the latter of which was adopted for this study. These two approaches have also been added in Figure 4.1.

While positivism is said to have been the dominant research paradigm for much of the 20th century (Gray 2009) and is certainly very prevalent in the existing empirical work on intangibles and IC it is not the most suitable approach to investigate the topic of intangibles in the context of this project's research questions and aims. There is also a growing body of work in the literature highlighting the need for an alternative approach to the study of intangibles/IC, as the dominant positivist approach, according to Dumay (2009a) has done little more than raise awareness of the phenomenon which Chatzkel (2004: 337) argues is at risk of becoming "merely one more set of very interesting ideas that is continuingly

elusive to grasp and use (see also Mouritsen 2004; Chaharbaghi and Cripps 2006; Mouritsen 2006; O'Donnell et al. 2006).

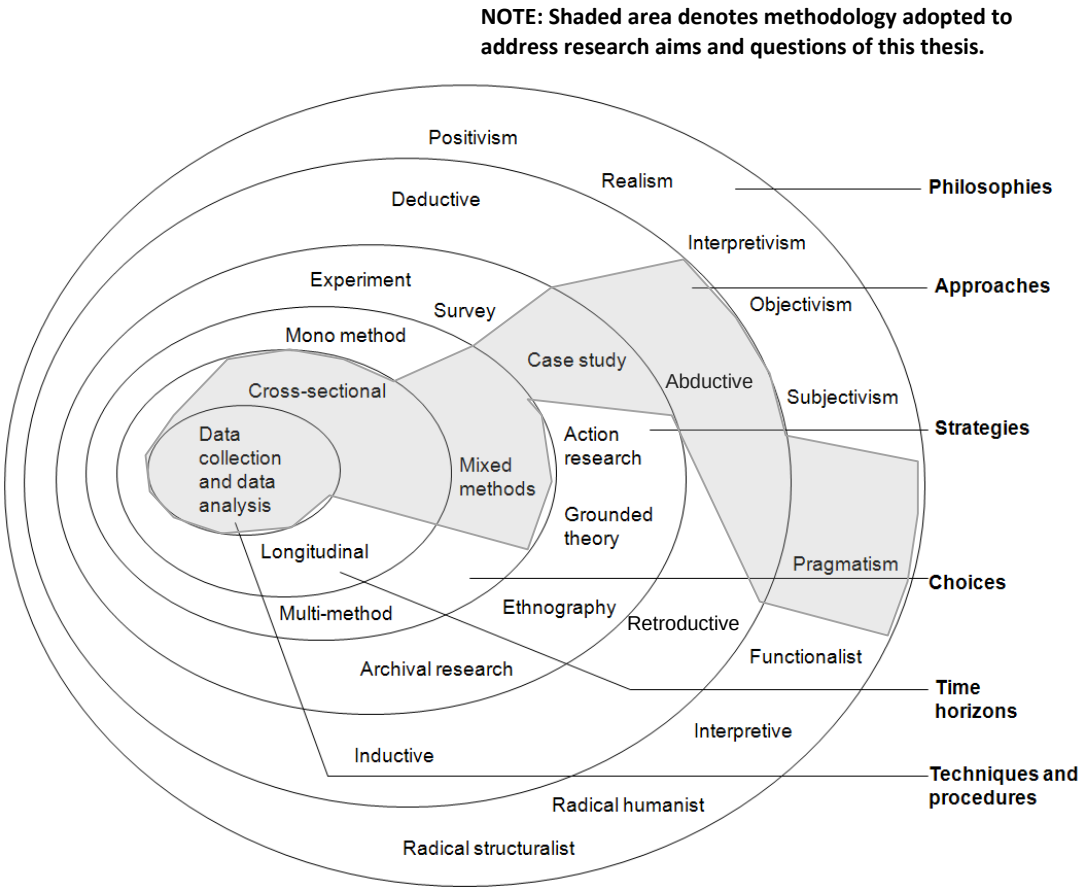


Figure 4.1: Thesis approach and the Research Onion, Adapted from: (Saunders et al. 2007)

4.2 Research philosophy

According to Schwandt (1994: 125) the constructionist's view of reality, knowledge and truth is that "knowledge and truth are created, not discovered" and "there is no unique real world that pre-exists and is independent of human mental activity and human symbolic language." Constructivism focuses on the individual and is concerned with how individuals construct and make sense of their world (Burr 2003) while social constructionism also focuses on how groups of individuals communicate and negotiate their views and perspectives regarding individual and shared or inter-subjective reality (Young and Collin 2004).

The constructivist approach is suitable for studies on operationalising sustainable development in business organisations, as the review of the literature in Chapter Two has shown that the concept is contested, fluid, continually changing and is often operationalised differently across and within companies. For example, while two

companies may both claim to be embedding sustainable development, for one this may mean eco-efficiency while for another it may a radical redesign to the business model and its value proposition. Constructionism is also appropriate for the study of intangibles in an organisational setting because it is epistemologically based on the notion that one fixed, context-independent truth does not exist (Marshall et al. 2005). Many contemporary authors have highlighted the influence and importance of context when theorising about and developing knowledge around the concepts on intangibles/IC (see for example Pike et al. 2006) while others, as discussed above, have argued that one absolute truth about intangibles does not exist (see section 4.1).

Marshall et al. (2005: 2) argue that one of the significant criticisms against social constructivism, is that this "postmodern critique of positivism and logical empiricism leads to a relativist nihilism where anything goes." This is because social constructionists, unlike positivists, do not claim that one particular view of reality is better or more accurate than another, they simple acknowledge that multiple views of reality exist and there is no way to determine which of these is true. They propose blending social constructionism with the essentials of pragmatism, to overcome this limitation as pragmatism allows propositions or theories to be judged by the consequences of accepting them (Almeder 2007) rather than how closely they represent reality as is the case with positivism. Propositions, models and theories are instead judged on their usefulness in practice and their ability to help "people to better cope with the world or to create better organizations" (Wicks and Freeman 1998: 129). The next section further elaborates on the philosophies of pragmatism and its appropriateness as a philosophy to address the research aims and questions.

4.2.1 Pragmatism

The pragmatic philosophy is best suited to the research aims. Pragmatism is claimed to be "problem-centred" and "real-world practice orientated" (Creswell 2009: 6). Adopting the pragmatic worldview allows the researcher to address concerns of practical application (see Patton 2002) and develop solutions for businesses that are challenged by operationalising sustainable development.

Pragmatism, similar to social constructionism, views knowledge as being both socially constructed and based on individuals' experience of reality and the world in which they live (Johnson et al. 2007; Gray 2009). Blaikie (2007: 23) states that, epistemologically, pragmatism views knowledge creation pragmatically and overcomes the "problem of establishing the truth of scientific propositions" as pragmatists argue that "scientific theories are created by scientists as convenient tools to deal with the world." Tools are justified if they "produce results" and deciding what is a good versus bad theory is a "matter of judgement, not proof" (Blaikie 2007: 23). According to Almeder (2007: 172) a person will be rationally justified in accepting a proposed proposition as true if "there is

some real possibility that accepting [it] as true, or very likely to be true, will have a tendency to provide behavioural consequences more productive of cognitive or moral utilities than would be the case if one had accepted instead either the denial of [it] or nothing at all."

Applying Almeder's (2007) rationale to the research problem, the propositions which underpinned this research were:

P1. Intangibles are a relevant phenomenon for all organisations, regardless of their current approach and integration sustainable development principles; and
P2. The greater an organisation understands its intangibles the greater its capacity to achieve sustainable development.

The first proposition primarily formed the data collection strategy for phase one of the data collection and the second proposition primarily informed the data collection for the four case study companies (See section 4.3.2). While the data collected as part of this thesis helps to support or contradict these propositions the primary aim is not to find essential and timeless truths but rather develop a framework which is useful within the constraints of the current economic system and the practices of firms in the Australian property sector context. The framework will, in the words of Marshall et al. (2005: 4) open "a space for continual inquiry and ongoing reflection that opens possibilities and choices for incremental, ongoing changes in practice."

4.3 Research design

The research design is a case study methodology using a mixed methods approach and each of these are discussed in greater detail in the sections below. The philosophical assumptions of the approach are based on the pragmatic worldview and constructivism epistemology as outlined in the previous sections.

4.3.1 Case study methodology

A qualitative case study approach was deemed the most suitable approach to gain a more in-depth understanding of the phenomenon and practice of intangibles in Australian property and construction firms.

A qualitative study was identified as the most appropriate approach in spite of the fact that a review of the business and management empirical literature found that there is a tendency is towards quantitative approaches (see Cameron and Molina-Azorin 2011). By adopting a non-positivist and socially constructivist pragmatic epistemology the research is not concerned with objectively measuring a phenomenon which exists separate to the socially constructed world but rather to gain deeper insights into the phenomenon and its

praxis. Additionally Boyle (2001: 41) states that the more "accurately we count, the more unreliable the figures" and "the less we understand."

The case study methodology is a recognised research strategy for doing research which involves an "empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence" (Creswell 2009: 55). As per Yin (2003) a single case design with multiple units of analysis was implemented. The case study boundary is the Australian property and construction sector with the unit of analysis set at the level of the individual organisation. Full details of the rationale for the sector were discussed in Chapter One and its key characteristics are found in Chapter Three. The next section outlines the design of the data collection strategy.

4.3.2 Mixed methods approach

As the pragmatic worldview places an emphasis on research problems rather than methods and it allows for pluralistic approaches (i.e. mixed methods) to be employed to derive knowledge about the problem (Creswell 2009). A mixed methods approach assumes that diverse types of data best provide an understanding of a research problem. A combination of quantitative and qualitative methods was used to collect the empirical data and investigate the ***phenomenon*** and ***practice*** of intangibles in the Australian property and construction sector. The qualitative methods included a web-based questionnaire, semi-structured interviews, and four company case studies. The quantitative method consisted of a content analysis of the Annual Reports of 41 property and construction firms.

The data collection and analysis was done in two primary stages with the first stage focusing broadly on the wider property and construction sector and the ***phenomenon*** of intangibles/IC while second stage narrowed the focus to a series of four case study companies focusing on the ***practice*** of intangibles/IC. Figure 4.2 illustrates the data collection methods and how they apply to the phenomenon versus practice themes, as well as indicating the relevant Chapters in this thesis for each of these two themes.

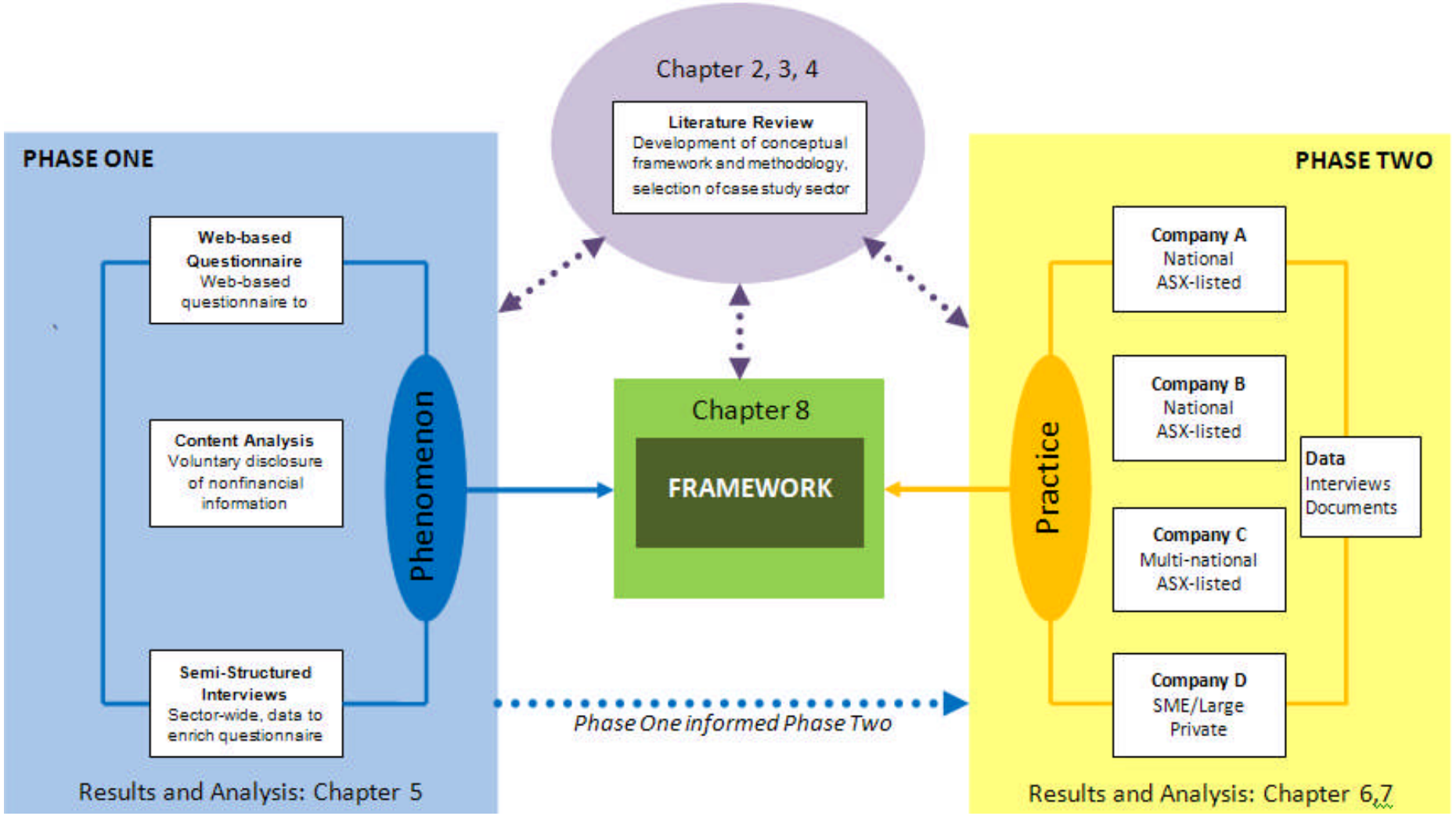


Figure 4.2: Data Collection Approach

4.4 Research scope

Chapter One and Three outlined the background information about and justification for the case study sector – the Australian property and construction sector. It is worthy of note that this is a cross-sectional study and the scope of the research is limited to the phenomenon and practice of intangibles relating to the implementation of sustainable development in Australian property and construction sector firms at the time of the data collection (c. 2010). Future research may draw upon this study for longitudinal comparisons or analysis of changes over time as the landscape with regards to sustainable development and corporate sustainability is quickly and constantly evolving.

4.5 Data collection methods

Multiple data collection methods were used including a web-based questionnaire, semi-structured interviews, documentary analysis and four company case studies. These methods were identified as the most appropriate methods to investigate the phenomenon and practice of intangibles and in order to answer the research questions outlined in Chapter One. This is supported by a recently published review (see Guthrie et al. 2012) on the last decade of intangibles/IC research which found surveys/questionnaire, case/field study/interviews and content analysis of annual reports to be the most popular research methods used. Additionally a large proportion of the previous studies have used a combination of interviews and surveys and are case studies that provide in-depth details of intangibles within different organisations.

Each of the data collection methods and the approach taken is discussed in greater detail in the coming sections. The discussion is split into the two phases of the research design. Phase one is outlined in sections 4.5.1, 4.5.2, 4.5.3 and 4.5.4 and Phase two is outlined in detail in section 4.5.5.

PHASE ONE: The Phenomenon of Intangibles

Three methods of data collection were employed in the first phase of the data collection including a web-based questionnaire (section 4.5.1), semi-structured interviews (section 4.5.2) and a content analysis (section 4.5.3). The aim, approach, sampling strategy, response rates and limitations of each method is outlined below. Section 4.5.4 outlines the data analysis process for the Phase one data.

4.5.1 Web-based questionnaire

4.5.1.1 Aim

The aim of the questionnaire was to investigate the ***phenomenon*** of intangibles in this previously under-investigated sector and gain insight into current practices of identifying, measuring and managing intangibles across the sector. This wide-scale (i.e. sector level) approach meant that a questionnaire was identified as the most suitable method of data collection. Questionnaires are a suitable method to collect data from a large number of respondents and are low in cost in terms of the researcher's time and money compared to other methods such as interviews or focus groups (Gray 2009). A web-based questionnaire was also preferable to a paper-based survey as web-based surveys reduce respondent burden, as they can self-adapt as respondents answer and do not require additional effort to be returned in the post (Salant and Dillman 1994). For example, a UK-based study which conducted a paper-based survey to the construction industry, attributed a low response rate from the Australian sample partly due to the lack of postage paid envelopes provided to respondents (Barrett and Lee 2004).

The content of the questionnaire was informed by the intangibles/IC literature, primarily (MERITUM 2001; Gallego and Rodriguez 2005; Beattie and Thomson 2007; Huang et al. 2007; Marr 2008). The questions were structured around the most commonly agreed taxonomy of intangibles/IC in the literature which includes – human, structural and relational capital. Respondents were provided with definitions for each of these categories at the beginning of the questionnaire and again when asked to respond to specific questions about the taxonomy. A copy of the questionnaire is located in Appendix One. Relevant factual information was collected from respondents including their job function, industry group, company size and whether their firm is listed on the Australian Stock Exchange (ASX).

4.5.1.2 Questionnaire design

The structure of the questionnaire can be summarised under the following subheadings:

Identification as a knowledge-based sector: On the surface, the balance sheets of property sector firms might indicate that the sector is still based in the material resource era of the industrial economy, as they do not follow the trend of other sectors when it comes to

market-to-book value ratios. The opinion of the participants was investigated to determine to what extent they considered their firms to be rooted in the industrial economy (i.e. material resource based) or the knowledge-based or intangible economy. Respondents were asked whether they considered their firm to be a collection of knowledge resources, material resources or combination of both, similar to the study by Gallego and Rodriguez (2005). The non-traditional or post-modern view of an organization is that it is a set of knowledge resources and operates within the knowledge economy (Chaharbaghi and Cripps 2006).

The most important intangibles of firms in the property sector: A diagram depicting the intangibles/IC taxonomy (human, structural and relational) along with a definition of each, based upon the literature (MERITUM 2001; Marr 2008) was provided to the respondents. They were asked to rate the importance of each category of intangible to their firm, on a scale of one to five, with one being not at all important and five being extremely important.

Classification of intangibles/IC: Respondents were asked if they there were any categories of intangibles missing from the three described (human, structural and relational) and whether their firm had a specific categorisation or classification system for its intangibles.

Measuring and Reporting: Respondents were asked about how their organisation disclosed information about its intangibles and whether the current financial statements of their companies sufficiently report intangibles. Respondents were then presented with a list of indicators under each of the categories of intangibles/IC, developed based upon a number of key empirical studies of intangibles/IC indicators (Beattie and Thomson 2007; Huang et al. 2007; Marr 2008), and asked whether the indicator was a. relevant to their organisation and b. how much data they currently collected on it, based on a scale of one to five, with one being not at all and five being comprehensive. While the aim of the questionnaire was not to develop a list of indicators relevant to the property sector, as this is better suited to a content analysis, the intention was that the results of this question would provide the protocol for an in-depth content analysis. However, early in the first phase of data collection it was determined that a more practice-based approach was relevant to the case study sector and study of intangibles so the originally planned content analysis was no longer relevant to the research design.

4.5.1.3 Validity

To reduce the possibility of misinterpretation of concepts and clarity of the questionnaire and improve the validity of the results, a pilot of the questionnaire was completed by seven people. The participants included three PhD students of various disciplinary backgrounds, two senior sustainable business lecturers, a senior sustainable architecture lecturer and an industry-based sustainability manager. Based on the feedback received revisions were made to simplify the questionnaire's structure and make the language 'less academic.' A

second pilot was completed again by the sustainability manager and one new respondent who is a business consultant in a large financial firm. Positive feedback on the structure, clarity and ease of completion was received from the business consultant, however, the sustainability consultant still had some minor concerns about the usage of the intangibles/IC terminology in the survey and how it might be received by industry respondents. Discussions were held with the research supervision team and it was decided that the survey was ready for distribution and that adequate definitions were provided for respondents of the survey.

4.5.1.4 Sample

The sample of firms was limited to firms in the Australian property and construction sector who are involved in non-residential property, primarily those involved in privately owned commercial property (i.e. offices, shops, hotels and industrial buildings), including building owners, developers, fund managers, contractors and managers. Due to the nature of the Australian property sector many firms not only operate across these multiple roles but also across a number of property types (i.e. residential, leisure). However, the main sampling criteria were those at least involved in non-residential property and undertake at least one of the functions presented in Figure 3.1 (see Chapter Three).

The diverse nature of firms in the property and construction sector make it difficult to determine the exact size of the population so a cluster sample of 78 commercial property and construction sector firms were identified for distribution of the questionnaire. A cluster sample is appropriate when the researcher is unable to sample a whole population because convenient sampling frames are not available (Gray 2009). The Property Council of Australia (PCA) membership database was identified as the best available and most complete sampling source. Other options investigated were the Australian Business Register and the Australian Bureau of Statistics; however, neither source had publicly available listings of firms in the sector. The Green Building Council of Australia (GBCA) membership database and the Australian Property Institute (API) membership database were two other possible options but both discounted – the GBCA due to the potential bias towards sustainability of the member companies and the API due to the fact the membership in this industry body is on an individual basis and not company basis. The Property Council of Australia (PCA) is the largest industry group association for this sector and most of Australia's major investors, property owners, contractors and developers are members. The entire membership database does not represent the case study population as the database also includes professional service and trade providers as members. After discussion with a number of experts in the field (Heywood 2010; Myers 2010) it was determined that the 28 national and core members of the PCA were representative of the major players in the property and construction sector and formed the first cluster of the

sample. To widen the cross-section of firms sampled 50 additional firms were added to the cluster sample by randomly selecting firms from each state that are involved in commercial property and construction activities. The number of firms selected from each state was based upon the relative proportion of firms in that state as this data was available (Kelly 2010; Wilson 2010) (See also Table 4.1)

State	% firms (# in sample)
Victoria	24% (12)
New South Wales	32% (16)
Australian Capital Territory	8% (4)
Queensland	18% (9)
Northern Territory	1% (1)
Western Australia	10% (5)
South Australia	6% (2)
Tasmania	1% (1)
TOTAL	100% (150)

Table 4.1: Cluster sample of firms by state

The questionnaire opened on April 18, 2010 and was live for a period of five weeks, closing on 22 May 2010. A recruitment email was sent to two individuals at each organisation, in most instances the CEO, managing director or sustainability manager, in an effort to maximise the response rate. Other similar empirical studies using questionnaires have adopted a similar recruitment technique to maximise response rates (see Gallego and Rodriguez 2005; Ousama et al. 2011). The organisational roles indicated above were identified as being the most appropriate people to be able to respond to questions about the organisation's intangibles from a broad/overarching perspective.

The researcher's contact details were provided to respondents should any questions or issues arise. One respondent emailed as they had trouble viewing a diagram presented on page two of the questionnaire and was subsequently provided with a PDF copy. A reminder email was sent to participants one week prior to the closing date of the questionnaire. Shortly before the closing date of the questionnaire additional advertising was sent through the Property Council of Australia's *Your Building*[4] which is aimed at those involved in the commercial property sector, in an effort to improve the response rate. One additional questionnaire was completed after this advertising however it could have also been a late response from the random sample.

32 responses were received in total; however, 11 were incomplete and were excluded from the results making the final number of usable responses 21 and the response rate 27 percent. In eight of the excluded responses the respondent only completed section one

[4] visit www.yourbuilding.org/Article/NewsDetail.aspx?p=83&id=3069 to view the advertisement

(about your firm) of the questionnaire and hence there was no useful data. The three other excluded responses also completed the section two (general aspects) and had these responses been included they generally agreed with the majority of the respondents – particularly in their identification as a knowledge based organisation (see questionnaire design section below). The limitations of the sample size and response rate are discussed in section 4.5.1.5.

All answers were returned anonymously and the only biographical data collected were their experience in years at the company and the function performed. A summary of the respondents' job functions is reflected in Figure 4.3. Respondents were primarily located in New South Wales (NSW) and Victoria (VIC), 47.62 and 38.10% respectively. The other respondents were in Western Australia (WA) and Queensland (Qld) and there were no respondents in South Australia (SA), Northern Territories (NT) and Tasmania (TAS) (see Figure 4.4). The respondents in the survey had a great deal of experience in the property sector as over half of the respondents (12) had over twenty years or more experience (See Figure 4.5).

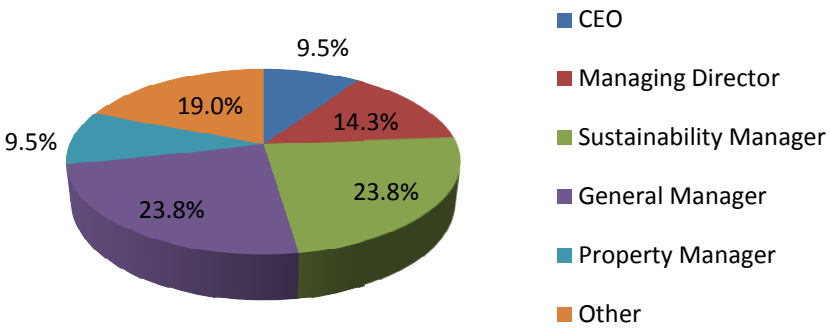


Figure 4.3: Respondents' job function

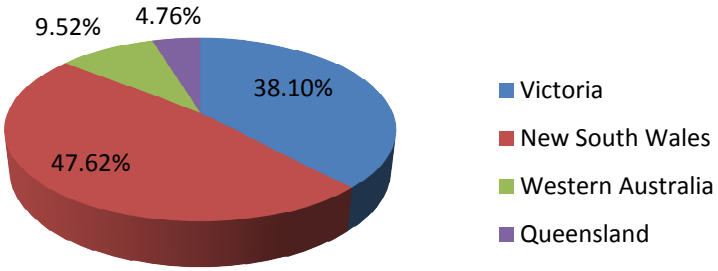


Figure 4.4: Respondents by Location

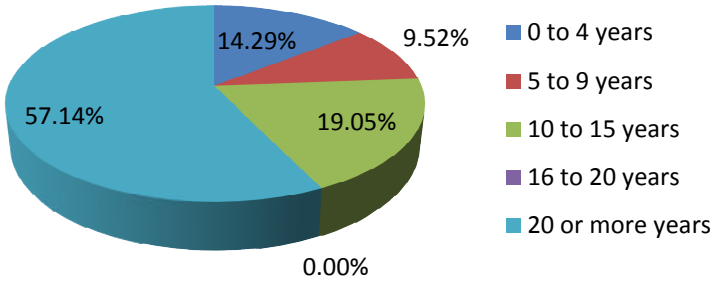


Figure 4.5: Respondents' years of experience in the Property Sector

4.5.1.5 Limitations

According to Gray (2009) questionnaires have a number of inherent advantages, such as cost, respondent anonymity, and the collection of large amounts of data quickly, however, there are also a number of limitations to this method. He highlights that response rates can be low and respondents may give misleading or flippant responses. The design of individual questions requires analytical rigour to avoid "ambiguity, leading questions, double questions and misleading questions" (Gray 2009: 367). To minimise the effects of these limitations as outlined above the questionnaire was piloted on two occasions. Recruitment emails were directed to actual staff members' email addresses rather than to the company general email address to reduce the likelihood of the email being ignored.

While every effort was made to define terminology in the questionnaire no definitions were given for the lists of indicators on pages six, seven, and eight. A response bias may also be present given based on the job function of the respondent. For example if the survey had been sent to HR managers they might have indicated a higher level of importance on things such as staff productivity. Similarly finance managers might have indicated that the financial reports of their firm adequately reflect their intangibles.

With regard to the small size of the sample surveyed it can be argued that it is still somewhat representative of the general population of the sector. For example, while there are 22 million square metres of commercial office accommodation in Australia (PCA 2009a) most of it is controlled by institutional investors operating listed (i.e. quoted on the Australian Securities Exchange) and unlisted property trusts (Roussac 2009). For example, the City of Sydney estimates that 60 percent of the office accommodation in its jurisdiction is controlled by only twelve separate entities (Barone 2009). This characteristic of concentrated ownership in Australia presents an opportunity to access a representative sample of firms from within just a few firms (Roussac 2009).

These limitations do not invalidate the perceptions of the respondents or the validity of the empirical evidence it merely limits the generalisations of the findings and as such it is acknowledged that the results may not be representative of the whole population in the sector. Despite this limitation, the results are interesting, informative and insightful. The study thus contributes to the gap in the research about the phenomenon of intangibles in the sector.

4.5.2 Semi-structured interviews

4.5.2.1 Aim

The aim of the semi-structured interviews was to enrich the data collected in the questionnaire. Additionally collecting data using a variety of sources and methods is a way to improve the validity of the data and conclusions drawn from it – otherwise known as triangulation (Fielding and Fielding 1986). Semi-structured interviews were an appropriate data collection method to be used in conjunction with the questionnaire because unlike in the questionnaire, probing and follow up questions could be asked by the researcher (Gray 2009). Additionally new themes and topics regarding intangibles could be explored as they emerged. This added to the insight gained into the identification, measurement and management of intangibles of firms across the sector.

4.5.2.2 Interview approach

The interviews were conducted in April and May 2010, with the exception of Interviewee 11 who was unavailable until October of that year. All the interviewees were provided with the project information sheet prior to the interview and most had at least scanned it before the day of the interview. A copy of the information sheet is found in Appendix Two. The interviews generally took place at the respondent's place of business or a nearby cafe and lasted approximately 1 – 1 ½ hours each.

The interviews generally commenced with the researcher providing the interviewee with background information about herself, the research project and the research ethics procedures for the project. This helped set the scene and relax the interviewee into the conversation before detailed information was requested. The interviewee was informed that none of the information given would be directly attributable to them as individuals or to their organisation.

The general structure of the interview questions was similar to the questionnaire, however, participants were not prompted with closed questions with lists of possible responses as in the questionnaire. Interviewees were asked to identify what they thought the intangibles of their firms are, which are most important, how and why they assess them as well as if and how data or information is gathered on them as well as how it is used in decision-making and learning across the organisation. Interviewees were also asked to discuss the

main challenges their firms are facing when it comes to managing and measuring their intangibles. A copy of the interview schedule is found in Appendix Three

4.5.2.3 Data handling

Each interview was recorded (with expressed written consent from each interviewee sought) and transcribed verbatim using transcription software (Dragon Naturally Speaking). A copy of the transcript was sent to the interviewees to check for accuracy, as well as offer the opportunity to review and revise any answers provided during the interview, as a way to address any issue of interviewer bias (Gray 2009). Sample coded transcripts can be found in Image 4.1 to Image 4.4.

4.5.2.4 Sample

Eleven semi-structured interviews were conducted with management-level staff with a total of thirteen people interviewed as two interviews were group interviews with two people. Initially seven firms were identified as sustainability leaders based on a review of the literature (see Newell 2008; Kok et al. 2010; Prior and Faria 2010) and invitations to participate were sent via email to sustainability managers of these firms. Six of the seven firms agreed to take part, however, one later declined to participate. Firms identified as sustainability leaders were sought out first as they hypothesized to be, according to the literature and conceptual framework outlined in Chapter Two (see section 2.5.2), more likely to be familiar with their organisation's intangibles and how they were being managed to operationalise sustainable development. Two of the other interviewees agreed to take part upon completion of the questionnaire (Interviewee 8 and 9) and yet another two participants (Interviewee 7a and b) were identified at a industry networking event as they expressed an interest in the research topic and were keen to share the experience of their organisation as it was a topical issue. The remaining interviewees were as a result of snowball sampling, including an interview with two staff members from the Property Council of Australia who were deemed appropriate to give an overall picture of the state of practice, particularly around nonfinancial reporting, in the industry. In line with the ethics approval for this project all participants' responses have been anonymised, however their general details (job function, type of firm, firm size and date of interview) have been summarised in Table 4.2 below.

#	Job Title	Firm Type	Firm Size	Date
1	National Sustainability Manager	Diversified Property Group	National	28.04.2010
2	Sustainability Manager Office and Industrial/Business Parks	Diversified Property Group	National	18.05.2010
3	Research Analyst	Investment Managers	National	27.04.2010
4a/b	National Policy Manager National Policy Advisor	Industry Association	Industry Body	
5	Transformation, Head of Sustainability	Diversified Property Group	Multinational	18.05.2010
6	Manager, Sustainable Property Investment	Contracting & Development	Multinational	28.04.2010
7a/b	Design Manager x 2	Construction Contracting	National	04.20.2010
8	Project Director	Developer	Multinational	12.05.2010
9	Commercial Manager	Construction Contracting	SME	14.05.2010
10	Group Sustainability Manager	Construction Contracting	Multinational	12.05.2010
11	General Manager, Sustainability, Safety & Environment	Property Group	National	06.10.2010

Table 4.2: Summary of Interview Participants

4.5.2.5 Limitations

Patton (2002: 306) outlines the key limitations of interviews as a data collection method including possibly "distorted responses due to personal bias, anger, anxiety, politics, and simple lack of awareness since interviews can be greatly affected by the emotional state of the interviewee at the time of the interview". Interview data is also subject to "recall error, reactivity of the interviewee to the interviewer, and self-serving responses" (Patton 2002: 306). Tanggaard (2008: 15) reports her experience of conducting research interviews and that "objections and hesitations voiced by the interviewees toward the interviewer's questions" can occur. These objections she argues, should be written about in the interview notes, and used to reconsider the theoretical concepts used by the researcher to inform the research. An example of a common hesitation and reaction from respondents is discussed in Chapter Six and focuses on the question of 'what are the intangibles of your firm?' (See section 6.2.1). This experience also informed one of the discussion points in Chapter Eight around the language of intangibles.

Bias can also be present in the transcriptions of the interview notes (Gray 2009) and to avoid this, interviews were recorded and transcribed verbatim. Grundy (2003) suggests having the interviewee create the interview transcription, however, this was determined to

be an untenable request on the resources of busy professionals. Copies of the transcripts were provided to participants to review and edit.

Leech and Onwuegbuzie (2008) also advise that debriefing is a key way to deal with bias in qualitative interviewing. Following the guidance of Onwuegbuzie et al. (2008) and Creswell (2009) the following protocols were developed to assist with conducting the interviews in a consistent way and ensuring regular reflection and debriefing whilst in the field:

- Piloting the interview questions;
- Dressing in appropriate business attire for the interviews;
- Keeping a reflective journal;
- Recording interviews (with participants' consent); and
- Conducting debriefing conversations

Debriefing conversations were held on a regular basis with members of the supervision team as well as with research peers including an expert in the field of intangibles/IC, Dr. John Dumay from the University of Sydney, in September 2010 to discuss the general outcomes of the research interviews, the experience of interviewing on this topic and to reflect on the theoretical implications of the data.

4.5.3 Content analysis

There are a number of schools of thought about content analysis as a data collection and analysis method. Neuendorf (2002) argues that it is a quantitative method which relies on the scientific method while others presents its use as a qualitative method (Lindkvist 1981; McTavish and Pirro 1990; Gray 2009). Rosengren (1981) argues that content analysis can be either a quantitative or qualitative method as it describes a family of approaches "ranging from impressionistic, intuitive, interpretive analyses to systematic, strict textual analyses" (cited in Hsieh and Shannon 2005: 1277). Hsieh and Shannon (2005) argue that quantitative summative approach to content analysis identifies and quantifies certain words or content in text with the purpose of understanding the contextual use of the words or content (see also Kondracki &Wellman, 2002). This quantification is an attempt not to infer meaning but, rather, to explore usage and that a qualitative summative approach to content analysis goes beyond mere word count and includes latent content analysis. As there was no latent analysis of the data collected from the review of the Annual Reports the method used in this research project most closely mirrors a quantitative summative content analysis.

A summative content analysis was conducted as a way to help triangulate the data collected in the questionnaire and interviews (Creswell 2009). Content analysis is acknowledged as being one of the most popular data collection methods used in the field of intangibles/IC to investigate firms' disclosure and reporting activities (see Guthrie et al.

2004; Beattie and Thomson 2007) irrelevant of geographical location (for example it has been used for studies in Australia, Canada, Hong Kong, Ireland, South Africa, Sri Lanka and Sweden). The benefit of content analysis is that it is a cost-effective method of data collection (Neuendorf 2002) and Annual Reports which are commonly used in the intangibles/IC field are an easily accessible source of data.

4.5.3.1 Aim

The aim of the content analysis was to assess broadly under which categories of nonfinancial information firms are voluntarily disclosing information, the general quality of this disclosure and public reporting vehicles used.

4.5.3.2 Approach/design

Corporate annual reports are generally accepted as the "most comprehensive" (Gray et al. 2004: 248) and "main disclosure vehicle" (Marston and Shrives 1991: 196) about a firm available to the public in most Western economies. CSR and sustainability themed reports were also reviewed because of the growing overlap between intangibles and sustainability reporting as documented in the literature (see for example Passetti et al. 2009; Oliveira et al. 2010). The company website for each firm was also reviewed. Only five companies in the sample actually produce a separate CSR/Sustainability report and of the five that do, their Annual Report contains only their financial data with a short summary at the beginning of the report. All of their nonfinancial and/or intangibles reporting is found in the CSR/Sustainability Report. Nineteen firms in the sample had no disclosure on intangibles or nonfinancial information. A full discussion of the results is found in Chapter Five.

The general disclosure of nonfinancial information was determined through the application of a manual content analysis of the reports and/or website of each individual firm in the sample. The categories or main headings found in the report were recorded into a spreadsheet along with the specific location of the disclosure. The main headings were assumed to represent how the firms generally categorise or classify their intangibles for external reporting purposes. This assumption was also confirmed by a number of interviewees during the interviews. These categories were compared against the categories of the intangibles/IC taxonomy and the results are presented in Chapter Five (section 5.4). This does not mean that additional information on the intangibles/IC of the firms was not disclosed in the full text of the report, however for the purpose of this exercise only the main headings and subheadings were recorded as they signify the emphasis and structure imposed by the firm on their nonfinancial reporting. The financial accounting sections of the annual reports were also reviewed to determine the traditional financial accounting norms in the sector. The results of this are also discussed in Chapter Five (section 5.2)

The quality of disclosure was identified by reading each individual report and applying a score of zero to three. Zero (0) represents a traditional financial report with no discussion of intangibles, one (1) represents some level of discussion (i.e. mentioned in Director's or CEO's report), two (2) represents significant disclosure, such as distinct or dedicated sections of the report or reporting on performance and setting targets and three (3) indicated a completely separate report (most typically a sustainability or CSR report). This approach was based on similar previous empirical studies by Bozzolan et. al (2003), Gray et. al (2004) and Sujan and Abeyeskera (2007).

4.5.3.3 Data handling

Each of the 2010 financial year annual reports was collected by downloading the report in portable document format (PDF) from the corporate website. CSR and sustainability reports, when available, were downloaded from each individual company website as well. The documents were manually searched in their electronic format and the results were entered into a Microsoft Word document. Some sample pages from this document can be viewed in Appendix Four.

4.5.3.4 Sample

The Australian Stock Exchange listed property trusts (AREITs) were the sample for the content analysis. These companies have a fiduciary responsibility to prepare an annual report to their investors which is easily accessible on their company website. In 2010 the best available data indicated that there were approximately sixty-one AREITs in total (Psaltis and Moretti 2010). However, the period from 2008 to 2010 was a very tumultuous time for this sector as a result of the Global Financial Crisis. This resulted in a number of mergers and acquisitions and has left a number of firms still on the brink of financial collapse and meant that four firms were removed from the sample as they had ceased trading. Fifteen other firms were removed from the sample as they were either overseas firms with no properties or business activities based in Australia or they were agricultural land trusts with no property assets or construction activity. A full summary of the firms in the sample is found in Appendix Five.

4.5.3.5 Limitations

As a method content analysis is not without its limitations including relying on 'old' data and the inability to explore associations and causal relationships between variables (Gray 2009: 501). Flick (2006) also argues that inductive interpretations of the data may be obscured by the conceptual structures imposed by the researcher on the data.

4.5.4 Phase one data analysis

According to Blaikie (2000) data collected via most methods is put into a useful form for analysis through a variety of data reduction techniques. The data analysis for the phase

one data set follow a more deductive than inductive approach – that is where there is a higher reliance on prior theory to inform the analysis (Gray 2009). The technique applied for the phase one data was a thematic coding based on the themes identified in the review of the literature (Chapter Two) to be investigated to gain an understanding of the ***phenomenon*** of intangibles. These themes were outlined above in section 4.5.1 and 4.5.2 as they formed the basis of the questionnaire and semi-structured interviews. New and emergent themes were also identified in the interview data to inform the second stage of data collection in the case study companies (see section 4.5.5 for more details).

The large amount of data found in the interview transcripts was reduced by reading and coding sections as relevant to one or more of the phenomenon themes. In the first instance hard copies of the transcripts were read and coded manually (see Image 4.1 and Image 4.2). Subsequently the notes and coding were adding to the electronic copies of the files to help with the management of the data (see Image 4.3 and Image 4.4).

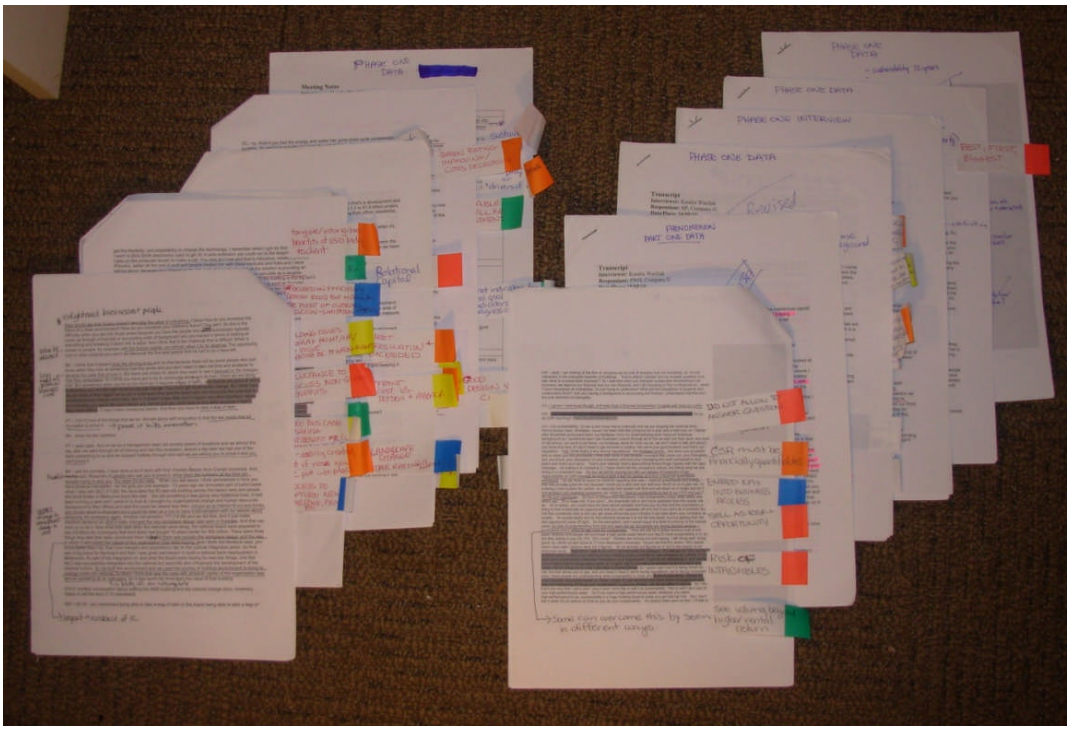


Image 4.1: Manually coded interview transcripts

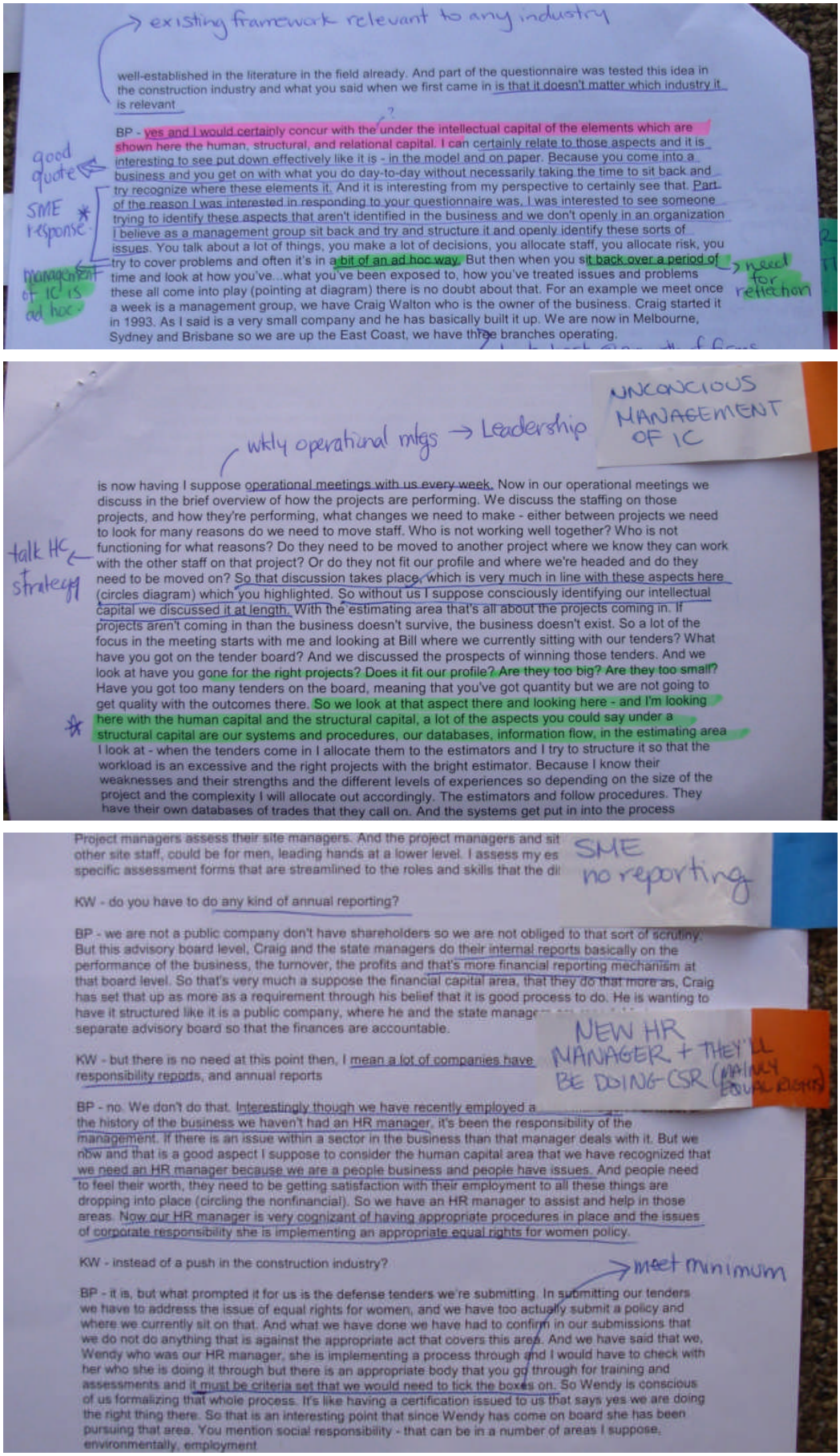


Image 4.2: Excerpts from manually coded transcript: Interviewee 9

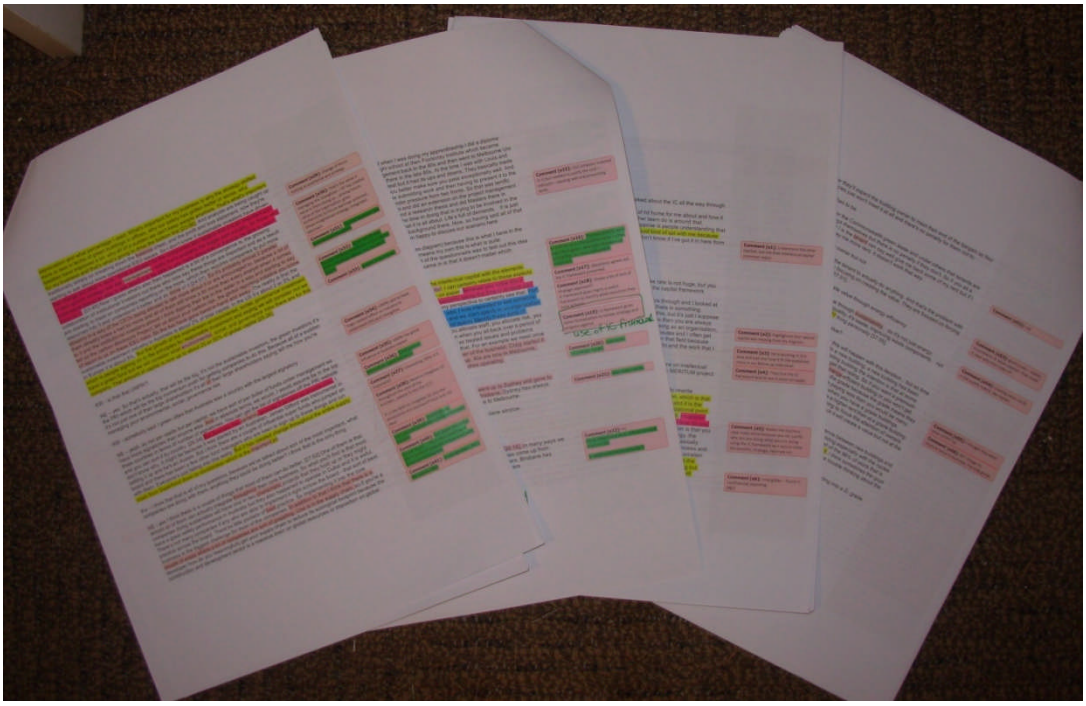


Image 4.3: Electronically coded interview transcripts

KW - so my first question was, defining intangibles, and how do you define what intangibles are?

NE - so we consider the intangibles to be the relationships between a business and its stakeholders. So this could include employees, industry Association and unions, consumers, local community as well as the environment, suppliers, contractors and it is those sort of things that you can't touch in a way that add value to the company [1:12]. so as well as those relationships you get things such as intellectual property driving from your employees, and you get things such as I guess the ability to attract and retain people because of those relationships and what you can do

Comment [e1]: How AMP define intangibles - RELATIONSHIPS

Comment [e2]: What kind of value??

Comment [e3]: INTANGIBLES = IP, HC, Value – ability to attract and retain staff

KW - I can show you what I have, my diagram to find intangibles [omitted conversation, kw explaining the diagram]. So one thing I'm trying to understand this if there's anything missing from this diagram, any other big main categories of intangibles [2:12]?

NE [long pause while he reads diagram] I think you probably got them all. I mean things like the brand, image and corporate reputation are obviously pretty cool intangibles as well. So it's a relationship thing. I quite like the breakdown actually. I guess another main intangible you could talk about would be about good governance and the reputation around that. And I'm thinking that governance sort of fits in structural capital, but then I'm thinking there's also a cultural element as well and where would you put that. Same with good occupational health and safety for a construction company is about both systems and culture, so I guess the culture resides in way in the human, but it could also reside in the way and the relational capital [3:18].

Comment [e4]: Like the IC category framework (same as BiP, others?)

Comment [e5]: Intangible = governance (SC) + (RC)

Comment [e6]: Pointing out a limitation of the IC categories in that a number of ic elements fit across a number of the domains (others noticed this as well!)

KW - because underneath all of these categories there are tons of indicators and you do find that they do fall into a number of the main categories - like you said occupational health and safety one could be in your people but it's also procedural thing and it is a relationship kind of things as well. For property firms is there anything specifically unique about their intangibles as opposed to a different sector?

NE – [4:07] not particularly I don't think. Because as a business entity what they've got to deal with is the people who work for them and the capital that comes with that, the people who supply to them. I guess they have quite a strong interaction with contractors that a lot of other sort of areas don't have. A lot of businesses will just have the supply chain producing widgets coming through, whereas, they'll be dealing with both the supplier of the materials as well as people

Comment [e7]: Property sector not unique in intangibles except that they have more relationships (people) to manage. People are their raw material sometimes.

KW - and they tend to change because it is a very project orientated industry

NE – yes. [4:48] One thing we do look a lot at is quality management in property companies versus other ones because of the large project management based requirements, particularly a construction company more than just a property manager. Brand and reputation are pretty cool, relationships with suppliers and employees, so I don't actually think there is any specific ones in this sector that don't reside another sectors. Some of them are bit more important. Like I say OHS is more important for the property sector than a lot of others and that's just simply because it is a greater risk and because it has a greater impact [5:29]. Increasingly the ability to understand environmental and green building trends, to be able to complete a green product effectively is pretty cool. I don't think that there is any sector that is more competitive around producing a green product than the property sector.

Comment [e8]: No 'sector' specific ones, but ones that are more important based on upon risk

Risk gives value? Importance to intangibles.

Comment [e9]: Environmental performance = nfp that's crucial

KW – Internationally or just in Australia?

NE - certainly in Australia. My perception is that the retail sector is a bit more intense around green products in parts of Europe for example, same with the utilities sector. [6:13] But certainly in Australia the property sector is just highly competitive around green building and you don't get that in other sectors. The supermarkets here aren't really competing on a green premise.

Comment [e10]: I noticed this when interviewing...ie we have the first this, or the first that down to minute details

Image 4.4: Excerpts from electronically coded transcript: Interviewee 3

The coded sections were then summarised by theme into a spreadsheet and referenced where relevant in Chapter Five to enrich the analysis and introduce an element of triangulation for the questionnaire data and content analysis data. A sample of the thematic spreadsheet and related quotes is located in Appendix Six. The content analysis results were also summarised in a spreadsheet, as previously mentioned. These results were also referenced, where appropriate, in Chapter Five. A summary of the Phase One data set is found in Table 4.3 below.

Data Collection Method	Data Set
Web-based Questionnaire	21 completed responses 11 incomplete and excluded 32% response rate
Semi-structured Interviews	13 Interviewees 14 Interview hours (approx) 105 transcribed pages
Content Analysis	42 Annual Reports

Table 4.3: Phase One Data Set

The next section outlined the data collection and analysis of the second stage of the research design, the company case studies.

PHASE TWO: The Practice of Intangibles

4.5.5 Company case studies

Phase Two of the research design focused on the ***practice*** of intangibles and a series of four, interview-based, company case studies were completed. The companies studied were considered to be industry leaders in corporate sustainability, but were also representative of the diversity of company size and structure in the property and construction industry. It was justified to use multiple cases (instead of a single case), because it enabled a broader exploration and a more robust view of current practice (Yin 2003: 45; Eisenhardt and Graebner 2007). Multiple cases enhance external validity, but require more resources and allow less depth per case than do single cases (Voss et al. 2002; Kujansivu 2008).

Case studies were determined to be an ideal data collection method for the second phase of the research as it is primarily concerned with answering RQ2 and RQ3 (see section 1.4). According to Gray (2009: 247) the case study method is ideal to answer "how or why" research questions (see also Yin 2003). Additionally as discussed in Chapter Two (section 2.2.5), Dumay argues there is a need for more organisational level case studies which investigate intangibles/IC from the ***practice*** based approach.

4.5.5.1 Aim

The aim of the case studies was to provide an in-depth understanding of the practice of intangibles and aimed to understand how the companies are utilising intangibles to initiate change or operationalise sustainable development.

4.5.5.2 Case study selection criteria

The companies for this research were deliberately chosen as they are recognised leaders in sustainability in the Australian property and construction sector based upon previous studies by Kok et al. (2010) and Newell (2008). A total of seven companies were initially identified and contacted for interviews in phase one of the data collection which resulted in five interviews. Three of these companies agreed to assist with additional access to managerial staff in their company in order for the researcher to undertake a case study of the organisation. The opportunity for the fourth case study, Company D, arose after a follow-up interview with a questionnaire respondent who expressed interest in the research topic and offered access to their firm as a case study. A summary of the snowballing approach is found in Table 4.4 below.

Phase One Interviewee Identifier	Firm Type	Method of Contact		Case Study
		Identified SD Leader	Questionnaire follow-up	
1	Diversified Property Group	✓		A
2	Diversified Property Group	✓		B
5	Diversified Property Group	✓		C
6	Contracting & Development	✓		-
9	Construction Contracting	-	✓	D
11	Property Group	✓		-

Table 4.4: Snowball sampling of Phase One from Phase One interviews

It was decided that Company D would provide a useful case study to compare and contrast with the other three case study companies in the discussion and analysis of the results. Previous literature on small to medium-sized enterprises (SMEs) and sustainable development has concluded that strategies and tools deemed appropriate for large firms may not be directly transferrable to SMEs or smaller firms (Holt et al. 2000; Ammenberg and Hjelm 2003; Lawrence et al. 2006) and Jones et al. (2007) argue that SMEs are generally heavily influenced by their owners' personal commitments, ambitions and strategic agenda. Although Company D has approximately 300 employees across three offices and is above

the criteria set by Statistics Australia to define an SME (less than two hundred employees) it is still a considerably smaller and younger enterprise than the other three firms. Despite its growth in size from its original single office and handful of employees, to three offices and nearly three hundred staff, Company D still considers itself to be more characteristic of a small-to-medium sized enterprise. Interviewee 9 indicated this in the phase one data collection and this point was also mentioned by a number of the interviewees from Company D during the phase two data collection. Company D is also somewhat unique when it comes to how it is run as a privately-owned company. The company owner has engaged an advisory board of four members who meet every month to discuss the company's strategies for the business. In this way it is similar to the organisational structure of the larger corporate case studies.

Access is recognised by several authors (see Jupp 2006; Saunders et al. 2007) to be a key challenge to research so a key selection criterion for the case studies was access to individuals and company data. For example while access was easily granted to members of staff for Company D, access to any form of documentation [tender documents, marketing materials etc] was requested and initially verbally granted, but eventually not permitted to be released by the marketing manager due to fears of confidentiality and protection of intellectual property (IP). Company A, B and C have a long history of public reporting (voluntary and fiduciary) so this provided convenient data access to the data along with the access granted by the interviewees in phase one to additional members of staff. It was hoped that the Chief Executive Office (CEO) or Managing Director could be interviewed for each case study company, however in all cases this proved to be quite difficult – and often it was the Sustainability Manager who was an accessible first point of contact into the companies and who facilitated additional access to other members of the management team. Other researchers have also experienced difficulty when trying to gain access to the CEOs of property firms (see Salt 2012). Table 4.5 summarised the key characteristics of the case study companies.

Characteristic	Company A	Company B	Company C	Company D
Headquarters	Sydney, NSW	Sydney, NSW	Sydney, NSW	Melbourne, VIC
Product/ Service	Diversified Property Group	Diversified Property Group	Diversified Property Group	Construction/ Project Management
Year Founded	1952	2005	1958	1993
# employees	1288	430	11 084	300
Ownership	Australian ASX Listed	Australian ASX Listed	Multi-national Australian headquarters ASX Listed	Privately owned
First SD[5] report	2005	2005[6]	2006	n/a

Table 4.5: Defining characteristics for each company

4.5.5.3 Approach

The primary method of data collection for the case studies was semi-structured interviews. Focus groups were considered, however, interviews were identified by most of the case study companies as the more desirable method of data collection in part due to the time constraints of the employees who agreed to participate. Additionally lack of funding was a constraint to conducting focus groups as the research participants were sometimes located in different cities (primarily Melbourne and Sydney) and the researcher could not offer funds for travel to attend a focus group.

As mentioned in section 4.5.2, during the phase one interviews often a project or company strategy was mentioned as a good practice example of how their intangibles are utilised or a specific theme of interest in relation to intangibles and sustainability at their organisation. Figure 4.6 below illustrates the main story, strategy or project focus of each case study firm identified as the starting point for the case study. These informed the snowballing and purposive sampling strategy utilised within each company to identify the relevant people to be interviewed. Even though the initial 'story' or focus for each case study company varied, for example a specific project versus a specific sustainability strategy, this enriched the data collection across the firms as often similar topics and themes were discussed just at different organisational levels. This added another layer of understanding to what is happening not only within the firms but across them and the wider property and construction sector.

[5] Sustainability, Environmental or CSR Report
[6] Company B also published reports from 2001 to 2004 prior to separating from its parent company

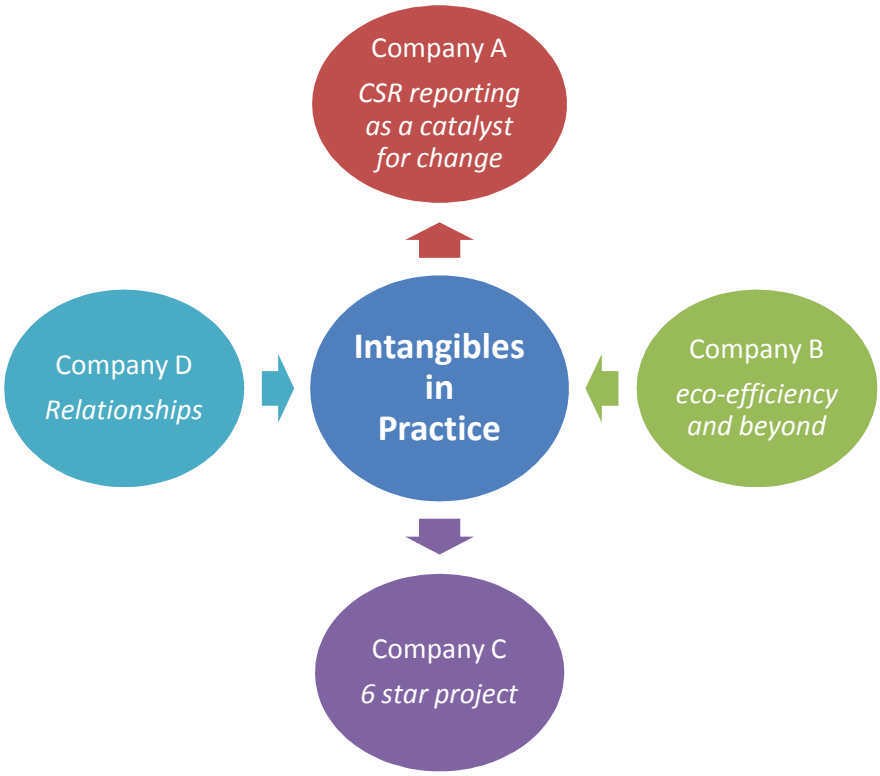


Figure 4.6: Case study companies' focus

Summaries, by company, of the interviewees' job function are found in Table 4.6 below. Documents were the other main source of data and were used to triangulate the interview data. The document sample included the 2010 CSR/sustainability report and 2010 Annual Reports. All of the case study companies, with the exception of Company D, produced both of these report types. All three companies base their CSR/Sustainability reports on the Global Reporting Initiative (GRI) framework, however, Company C's sustainability report was not third party verified whereas Company A and B's were. A full summary of the case study data set is in Table 4.7 on the next page.

#	Source	Data Type	Date
Company A			
A1	National Environment Manager	Interview	19.05.2010
A2	General Manager CSR	Interview	06.10.2010
	Sustainability Report	Document	2010
	Annual Report	Document	2010
	Annual Review	Document	2010
Company B			
B1	Head of Communities	Interview	17.05.2010
B2	Head of People and Culture	Interview	17.05.2010
B3	Manager, Environmental Sustainability	Interview	06.10.2010
B4	Head of Development	Interview	27.10.2010
B5	Head of Office	Interview	18.05.2010
	Sustainability Report	Document	2010
	Annual Report	Document	2010
Company C			
C1	Business Development Manager	Interview [phone]	24.10.2010
C2	Project Director – Development	Interview	25.10.2010
C3	General Manager, Leasing & Development	Interview [phone]	24.10.2010
C4	General Manager	Interview	19.10.2010
C5	Sustainability Manager - Investment Management	Interview [phone]	24.10.2010
	Sustainability Report	Document	2010
	Annual Report	Document	
Company D			
D1	Finance Manager	Interview	19.10.2010
D2	Project Manager	Interview	19.10.2010
D3	Project Manager	Interview	19.10.2010
D4	Compliance Manager	Interview	26.11.2010
D5	Construction Manager	Interview	19.10.2010

Table 4.6: Case Study Data Sources by Company

Data Collection Method	Data Set
Semi-structured Interviews	13 Interviewees 14 Interview hours (approx) 152 transcribed pages
Documents	Annual Reports Annual Reviews CSR/Sustainability Reports

Table 4.7: Phase Two Data Set

The interviews were conducted in May, September, October and November 2010 and lasted approximately 1 – 1 ½ hours each. The majority of the interviews were conducted in person at the interviewee's place of business. Some of the interviews for Company C had to be conducted over the telephone due to lack of travel funding. All the interviewees were provided with the project information sheet prior to the interview (Appendix Two).

The interviews were conducted in a semi-structured way and generally commenced with the researcher providing the interviewee with background information about herself, the research project and the research ethics procedures for the project including the anonymity of their responses. The interviewee was also told why they were identified as a person of interest in the company to be interviewed.

The first interview question was always to ask the interviewee what he/she thought the intangibles of their organisation are in order to gauge their interpretation of the concept before the researcher provided the interpretation used in the research (i.e. the intangibles/IC taxonomy). Interviewees were then asked a series of questions similar to the phase one interviews (see Appendix Three) however the questions were more focused on the 'how' (practice) intangibles were employed in a certain strategy or project for example rather than just the 'what' (phenomenon) the intangibles of a certain strategy or project were.

4.5.5.4 Data handling

Each interview was recorded (with expressed written consent from the interviewees) and later transcribed verbatim by the researcher using transcription software (Dragon Naturally Speaking). A copy of the transcript sent to the interviewees to check for accuracy and to review and revise any answers provided during the interview. This is a standard approach to help address the issue of interviewer bias (Gray 2009). All quotations integrated into the discussion and analysis in Chapter Six and Seven are taken from these transcripts. To maintain the anonymity of participants these quotations are cited by an interviewee identifier number.

4.5.5.5 Limitations

Evans and Gruba (2002: 95) argue that in order for research to be a case study the researcher has to go on to do some generalisations otherwise it is just a study. However, Yin (2003) cautions that it can be difficult and dangerous to generalise from a specific case. In order to address this limitation, the most representative case studies of sustainability leaders in the sector were selected in order to address research questions two and three which seek to understand how firms manage their intangibles in how this helps them operationalise sustainable development. A fourth case study (Company D) company which is representative of the smaller privately-owned firms in the sector was conducted to

compare and contrast the findings from the other three case study companies. Additionally in phase one data was collected from the wider property and construction sector and helps to address any limitations of self-selective case studies by showing what else is happening across the sector with regard to the topics of sustainable development and intangibles.

Generalisations can also be achieved by comparing the case study results with reports of comparable work in the literature and the phase one data analysis and results, which has been done in the result and analysis of the empirical data presented in Chapters Five through Seven and the discussion in Chapter Eight. Additionally it is appropriate to argue that a case study is an investigation that helps **build theory** so the idea is **not to draw hard and fast conclusions**, but rather to **act as an explorer** who is **mapping out**, and **suggesting new areas of investigation**. Suggestions for future areas of investigation are outlined in Chapter Nine.

In relation to the interview data collected it is generally limited to the views of the senior management and as such may not reflect the views of the employees of the organisation. For example, Gray et al. (2004) provided questionnaires to employees and managers, in order to tease out contradictions between strategic (managers) and operational (employees) views of intangible resources. Given the time and resource constraints of the research project this is identified as another possible avenue for future research.

The other general limitations of interview data are similar to those discussed in section 4.5.2 and similar strategies were adopted to address these limitations.

4.5.6 Company case study data analysis (Phase Two)

This section describes how the case study data was analysed for the discussion in Chapter Six and Seven. While each individual case study initially had its own 'story' and focus (see Figure 4.6 above) the overall data reduction and analysis strategy used was a cross-case analysis where common themes across the four cases were identified similar to the process described by Gray (2009: 251). In this second phase the interview transcripts and documents reviewed were not coded manually as this was found in the first phase to be a labour intensive process and produced difficult to navigate spreadsheets. The documents were loaded into the qualitative data analysis software QDA Miner and electronically coded into themes using the process outlined below.

A thematic data reduction approach was employed again and followed what Miles and Huberman (1994: 9) describe as a "fairly classic set of analytic moves" for qualitative data analysis. These moves include the coding and noting of data, followed by sifting through these materials to identify "similar phrases, relationships between variables, patterns, themes, distinct differences between subgroups, and common sequences" (Ibid, 1994: 9). The results of this coding informed the results and analysis presented in Chapter Six and

Seven. The thematic coding was informed by the literature review and conceptual framework outlined in Chapter Two (see section 2.7). Yin (2003: 103) identifies this as an appropriate strategy for case study data analysis. A copy of themes from the QDA Miner electronic codebook is found in Appendix Seven. The final step of the data reduction approach, which for this thesis is presented in Chapter Eight, is to confront the results and generalisations with the "formalised body of knowledge in the form of constructs or theories" (Miles and Huberman 1994: 9).

4.6 Summary

This Chapter outlined the methodology used for this thesis to address the research questions and aims outlined in Chapter One. It provided a brief overview of methodology followed by a discussion of the mixed methods research design. The majority of this Chapter discussed the methods used to collect and analyse the empirical data along with their limitations. The data collection was split into two phases based on an investigation of the ***phenomenon*** of intangibles/IC and the ***practice*** of intangibles/IC. The results and analysis of the Phase One data collection is presented in the next Chapter (Five) and the results and analysis of the Phase Two data collection is presented over two Chapters (Six and Seven).

"No phenomenon is a phenomenon until it is an observed phenomenon"

Niels Bohr.

5 Results and Analysis: Intangibles as a Phenomenon

Previous Chapters have outlined the justification for this research study and provided the context in which it is located. This Chapter and the two which follow (Six and Seven) present the results and analysis of the data collected within this thesis.

The aim of this Chapter is to examine the ***phenomenon*** of intangibles/IC in the Australian property and construction sector. It was deemed an important first step in the research project as no specific studies of this sector existed in the intangibles/IC literature. The data shows that organisations within the property and construction sector identify with characteristics of organisations in the knowledge-based economy. The intangibles/IC taxonomy was well-received by the respondents and helped to support discussions about the intangibles. Key themes which were identified in Chapter Four in relation to the questionnaire design are discussed in this Chapter. The content analysis, questionnaire and semi-structured interviews are the main data sources for this Chapter. This Chapter primarily addresses research question number one.

5.1 Identification with the knowledge economy

Respondents indicated that their firms exhibit characteristics attributed to knowledge-based organisations. As outlined in Chapter Two (section 2.1) the knowledge economy is a theoretical construct about the changing nature of the economy from one which relies on manufacturing to one which relies more upon knowledge and innovation as a source of wealth creation (Andriessen 2004b). A common theme amongst the interviewees was that their firms rely on more than just tangible assets to create wealth. For example, Interviewee 9 stated:

> *"...the perception is that the industry is plant and equipment but management skills are key...we are managers of the system...we're not really builders...we manage the process and co-ordinate."* (Interviewee 9, Commercial Manager, 14.05.2010)

In order to establish the relevance of a study of intangibles in this sector and confirm the existence of the ***phenomenon***, questionnaire respondents were asked whether they consider their firm to be a collection of ***knowledge resources*** (people, processes and networks), ***material resources*** (plant, equipment, money) or ***both***. Fifteen (71.4%) identified their firms as being a collection of ***knowledge resources*** while the remainder indicated their firms consisted of both material and knowledge resources. No one

responded with just material resources alone. A study by Gallego and Rodriguez (2005) of Spanish firms found only 66.7 percent said knowledge resources, 7.7 percent stated both and a significant 20.5 percent responded material resources alone. The authors elaborate that respondents from the finance, insurance and new technology sectors were absolute in their response of knowledge resources, but they did not provide any additional detail on the other sectors in the sample – which included a few real estate firms. In addition, more industrial-based sectors such as mining, agriculture and fishery were included in their sample and may account for the significant percentage of respondents indicating material resources. Respondents in this thesis's sample show a higher level of and more absolute identification as knowledge-based organisations.

Interview respondents were not specifically asked the same question but most indicated at some point that their intangibles are essential to the success of their company and a key source of competitive advantage. For example Interviewee 5 stated that

> *"…in an organisation like ours, we don't produce, were not an industry that produces phones or widgets. We provide management services, so we manage this overall process and the outcome is the building… how we use our people, our IT tools and technologies - that is how we stay ahead of the pack really."* (Interviewee 5, Sustainability Executive - Systems, 05.18.2010)

Interviewee 7a agreed and further added that it is their company's intangibles that are:

> *"...exactly the difference between us just being a producer of buildings or manufacturer to actually working with our clients to deliver them a product."* (Interviewee 7a, Design Manager, 20.04.2010)

Andriessen (2004b) argues that in the knowledge economy knowledge replaces labour and capital as a fundamental resource in production (see also Chapter Two, section 2.1.1). Additionally as discussed in Chapter Two (see section 2.1.3) the RBV posits that it is a firm's "intangible assets" that give it a competitive advantage and are a "critical driver" (Bose and Thomas 2007: 653) for the business's long-term success (Bontis 2001). Interview respondents empirically verified that these characteristics of knowledge economy organisations are relevant to Australian property and construction sector firms.

While the survey's small sample does limit the generalisation of the findings to the entire population of the Australian property and construction sector it is possible to say there is evidence of a shift towards a more service-based sector and that this study's findings are congruent with the findings of De Valence (2004). This shift to more service or knowledge-based organisations means that the intangibles of companies in this sector will be increasingly important to a firm's current and continued success. The next section highlights some of the key challenges identified, particularly for construction companies, operating in the knowledge-based economy. Additional challenges specifically related to the accounting of intangibles, particularly for property firms is discussed in section 5.2.

5.1.1 Challenges of operating in the knowledge-based economy

Operating in the knowledge-based economy is not without its challenges, especially when, according to many of the respondents, the value of a company is based primarily on tangible assets (i.e. buildings). The market often does not appreciate the potential added value of a firm's intangible resources – particularly its human capital.

> *"...it is a very competitive market. You put your price out there in the marketplace and people still go to the bottom line..."* (Interviewee 7b, Design Manager, 20.04.2010)

Part of the problem Interviewee 7b identified is structural and relates to how firms (clients) currently develop budgets for building projects – that is they focus on the upfront cost. They do not consider the running or operational costs that might incur after the work is completed. For example, a particular design or construction innovation may cost more up front but result in financial gains in the long term. However these financial savings will accrue to a different part of the client's budget (i.e. an operating budget), rather than the capital budget funding the building work.

> *"..we have put in some particular design innovations into projects which we knew carried a cost but it meant that the operator in staffing [their building] could work on a much lesser staff base overnight... we can't be certain any of that actually gets carried through into the client's final assessment [of the tender]...we don't know that they even look at the staffing levels of each project against each other...the actual capital cost of building and the operational cost of staffing it up are assessed by different teams at different times and they are not related to each other."* (Interviewee 7a, Design Manger, 20.04.2010)

Interviewee 7b and Interviewee 9 both shared success stories of projects where they were able to demonstrate to the client the benefit of their firm's human capital (innovation) as well as their systems and procedures (structural capital). They both indicated the key success factor in communicating this information was being given the ability to present to the client's project team. In both examples the interviewees highlighted that it was how they argued that they were going to be managing and in a sense protecting their client's relational capital (see Table 2.1) which was of most importance to the client. Interviewee 2, coming from a property owner's perspective, had a similar viewpoint about the value they add to their tenant's intangibles stating:

> *"In some ways the 'protector' of our tenant's intangibles - the defender of their intangibles...for many of the service businesses that occupy our offices, like the banks and financial service companies, a significant portion of their value is in the intangibles, so we're playing a part in defending that value."* (Interviewee 2, Sustainability Manager, 28.04.2010)

The next section presents a discussion of how the sector is currently defining the ***phenomenon*** of intangibles/IC.

5.2 Defining intangibles in the property and construction sector

As outlined in Chapter Two a common rationale given in the literature for the study of intangibles is the growing gap between a company's market-to-book value ratios – that being that the book value (net tangible assets) is often significantly lower than the market value of an organisation. However, as outlined in Chapter Three currently many of the major Australian Real Estate Investment Trusts (A-REITs) are trading at a discount to their net tangible assets - which means that their market value is actually lower than their accounting book value. This fact was confirmed to still be the case by Interviewee 11 and Interviewee 5. They indicated that this is due to a number of complex factors including the impact of the GFC on the sector.

A review of the 2010 annual financial reports of the AREITs found that just over half, 24 out of the 41 reports reviewed, carried intangible assets or goodwill on their balance sheets. Interviewee 2 suggested this lack of intangibles on property firms balance sheets was more an indicator that the "*market doesn't value the intangibles – at all.*" However, other studies noted below have found evidence that information about a firm's intangibles is becoming a growing area of interest for many stakeholders in the financial market to a large extent driven by the increasing acceptance of corporate responsibility in mainstream business practices. Interviewee B3 from case study Company B and Interviewee C5 from case study Company C also explicitly talked about the growing requests for information about their firms' intangibles from the financial investment community. Other studies such as Durst's (2008: 430) empirical study of German trade associations also concluded that, for the purpose of SME company succession, intangible assets have a "strong bearing" on the decision-making process of potential investors and Royal and O'Donnell's (2008: 679) empirical work also found that equity markets and hedge fund managers in Hong Kong and Australia were currently using human capital information "unsystematically" in their investment decision process. Interviewee 11 also gave the example of his company being bought in 2007 at a 56% premium above its tangible asset value and how he believes that this was in part because of the company's good reputation for being a well managed company, with good prospects, and a good track record and reputation for sustainability performance. However he also added that in reality the company's high ownership of buildings in the central Sydney office market also had a direct impact on the takeover premium.

It is not that the market does not value the intangibles of the A-REITs, rather it can be argued that it is more a case of traditional financial accounting rules and what is and is not allowed to be reported on the balance sheet, including what is counted as an expenditure versus a capital investment. For example, Ruddock and Ruddock (2009) argue that measurement issues hide the true value of investment in intangibles in the UK construction

sector as spending on human capital, organisational capital and other knowledge resources go unaccounted for. Their data suggests that there is more investment in intangibles than tangibles in the UK construction sector. Interviewee B1 and B2 from case study Company B, also noted that intangibles are typically recorded as a cost or expenditure (see section 6.2.1).

The survey respondents agreed that traditional financial reports do not adequately report the performance of their company's intangibles (see section 5.5.1). Interviewee 5 echoed this sentiment highlighting that although financial and nonfinancial reporting *'need to come together'* it is the legalities around statutory financial reporting which have made this difficult. Dumay (2008; 2009b) and others such as Chaharbaghi and Cripps (2006) and Mouritsen (2004) instead argue that accounting-based approaches to intangible resources to date have done little more than raise awareness of the phenomenon and that a new approach to understanding HOW intangibles are used in practice is the better way forward. This is explored in the case studies in Chapter Seven.

Interviewee 3 argued that in spite of intangibles not appearing on the balance sheet of firms in the sector there is still intangible value there. He stated:

> *"I think that there is intangible value in a property company. I mean it's a people industry. If you think of [our company], [it] owns a lot of office blocks, the intangible value of that is in the people who manage, the property managers who manage those offices. The appeal of the offices is in terms of location but also in terms of energy and water saving, green aspects. I guess the reputation of dealing with [our company] and knowing that the property will be there, it's healthy going forward. That's all intangible value that won't appear on the balance sheet* (Interviewee 3, Investment Managers, 27.04.2010)

The AREITs that did report intangible assets commonly included *management rights, IT investments or software development, and land development rights.* Goodwill was often recorded separately and resulted from the acquisitions of other businesses and is the difference between the book value of the acquired company and the actual price paid for it. It is a statutory requirement for listed companies to disclose this information. One surprise when reviewing the annual reports was that one firm included ***carbon sequestration rights*** as part of the intangible assets reported on their balance sheet. While it is beyond the scope of this thesis to explore carbon environmental accounting it is interesting to note that according to Ratnatunga (2007: 4) "there is no literature available in the academic journals that deals specifically with the impact of carbon trading on financial reporting and assurance theory and practice" and that for a profession already "struggling to account for intangible assets and liabilities such as intellectual capital, brand values and reputation" (Ibid 2007:3) carbon accounting is another big hurdle to tackle. Boydell et al. (2009: 104) summarise the Australian perspective on carbon sequestration rights and accounting and conclude that the term *carbon sequestration right* is currently poorly defined and that

current policy intent and corporate social and environmental responsibility is “ahead of the science and the legal framework for managing property rights in carbon.”

In the interviews only two of the interviewees referred to the traditional financial accounting definition of intangibles (i.e. intangible asset or goodwill) when asked what they considered the intangibles of their company to be. Most others referred to indicators or issues which are more in keeping with the intangibles/IC definition of intangibles some of which include community engagement, stakeholder engagement, employee engagement, corporate governance (Interviewee 1), stakeholder relations, intellectual property, reputation (Interviewee 3) and people and processes (Interviewee 8), environmental performance, corporate reputation and brand (Interviewee 2).

Environmental and social performance was noted by some, particularly the sustainability managers, to be considered part of their company’s intangibles. This is a similar finding to the case studies and is discussed in Chapter Six. It is interesting that they refer to their environmental performance as their intangibles, but this is probably in part due to the fact that their environmental and social performance is part of their nonfinancial performance reporting and they use the word nonfinancial and intangibles interchangeably. Also many of the indicators used for social performance reporting are still young in their use and development and therefore still often considered intangible (i.e. the long-term data does not exist to support the metrics and agreement on suitable metrics is still contentious). Any indicators or metrics considered to be a bit ‘fluffy’ (Interviewee 6) or ‘airy fairy’ (Interviewee 7a) are still branded as intangible, hence immeasurable, by many in the industry.

The questionnaire and interview results discussed above highlight that the traditional accounting approach to defining and measuring intangibles as intangible assets or goodwill on the balance sheet is not currently adequately identifying the intangible resources of property and construction sector companies. The intangibles/IC literature and framework was presented as a way to identify and define the intangible resources and the results are discussed in the next three sections.

5.2.1 The intangibles/IC taxonomy definition of intangibles

Interview respondents were asked what they identify to be the nonfinancial resources of their company to be and what term they would use. Interview respondents had a hard time clearly identifying what their firm’s intangibles were. A similar experience was also evident in the case study interviews presented in Chapter Six (see section 6.2.2). However when given the intangibles/IC taxonomy as a diagram (Figure 2.4) and definitions (Table 2.1) it often made the conversation easier as it provided them with some structure to talk around. All the interviewees thought it was an excellent graphical description of intangibles of their firms and the three categories adequately defined their firm’s intangibles. Many

respondents thought the researcher was quite clever for developing the intangibles/IC taxonomy, so it often had to be clarified that it was a theory which has existed in the academic literature for a number of decades. This unfamiliarity in practice with academic theories is not uncommon according to the management literature which argues that despite being designed to allow management theory to be implemented in practice often a theory-practice gap exists (Nutt 2002; Styhre 2002; Miller and Ireland 2005) and theory based tools "tend to be mis-valued and under-utilised by business practitioners" (Moisander and Stenfors 2009: 228). In this case the interview respondents seemed to really identify with the academic theory, though perhaps in part be due to the fact that the intangibles/IC field's roots are consultancy and practitioner-based (Andriessen 2004b; Martin-de-Castro et al. 2011). As mentioned in Chapter Four (see section 4.5.1.3) there was some concern from one of the pilot questionnaire respondents that the intangibles/IC framework was 'too-academic' for the industry, however, the feedback from the respondents indicated otherwise.

As mentioned above none of the interviewees were familiar with the intangibles/IC taxonomy and when presented with the diagram and definitions used in the questionnaire most interviewees found it a relatively useful depiction to conceptualise and discuss their firm's intangibles or nonfinancial resources. Interviewee 9 expressed his fondness of the intangibles/IC taxonomy in the following statement:

> *"I would certainly concur with the elements which are shown here - the human, structural, and relational capital. I can certainly relate to those aspects and it is interesting to see it put down effectively like it is - in the model and on paper...I was interested to see someone trying to identify these aspects that aren't identified in the business and we don't openly in an organization, I believe as a management group, sit back and try and structure it and openly identify these sorts of issues. You talk about a lot of things, you make a lot of decisions, you allocate staff, you allocate risk, you try to cover problems and often it's in a bit of an ad hoc way.* (Interviewee 9, Commercial manager, 14.05.10)

A similar impression was gained from the other interviewees about intangibles - that is that as an industry sector many firms are aware of the ***phenomenon*** of intangibles and are keenly interested in them. In some cases firms are actively seeking to better identify what they are, establish some structure to them and understand their usefulness in practice. The latter is the focus of the case studies and is discussed in Chapter Six and Seven. When Interviewees were asked if any categories were missing from the taxonomy most seemed to agree that the taxonomy could in essence cover all the categories/indicators of intangibles as demonstrated by Interviewee 3's response below:

> *"I think you probably got them all. I mean things like the* ***brand, image and corporate reputation*** *are obviously pretty cool intangibles as well. So it's a relationship thing. I* ***quite like the breakdown actually****. I guess another main intangible you could talk about would be about* ***good governance and the reputation around that****. And I'm thinking that*

> *governance sort of fits in structural capital, but then I'm thinking there's also a cultural element as well and where would you put that. Same with good occupational health and safety for a construction company is about both systems and culture, so I guess the culture resides in way in the human, but it could also reside in the way and the relational capital."* (Interviewee 3, Research Analyst, 27.04.10)

While the questionnaire respondents provided some additional category suggestions which are summarised in section 5.4, a number of the interviewees noted a similar limitation of the intangibles/IC taxonomy found in the quote above - that a number of indicators or sub-elements of the main intangibles/IC categories (human, structural, relational) could fit across a number of the domains. This is a common critique of the intangibles/IC taxonomy in the literature (Beattie and Thomson 2007) and many conceptual and empirical studies have done work to develop methodologies to avoid this, however, others, such as Dumay (2009a) and Mouritsen (2004) argue that there is too much focus on a trying to create 'universally' true taxonomy and definition for intangibles/IC when the focus should be on trying to report on organisation's experiences of intangibles/IC in practice rather than continuing to develop global frameworks (see also Chaharbaghi and Cripps 2006; Mouritsen 2006; Dumay 2009b).

The next three main sections discuss the results of the questionnaire and interview data collected on intangible resources as defined by the intangibles/IC taxonomy (see Figure 2.3).

5.3 The most important intangibles in the sector

Questionnaire respondents were asked to identify the relative importance of each area of intangibles/IC to the success of their organisation. Human capital was identified as the most important category of intangibles/IC to the success of firms in the property sector, followed closely by relational capital (see Figure 5.1). This result is in keeping with the findings of others in the literature such as a study of US base high technology firms which found that "the people factor has become the dominant driver for success" (Andreou et al. 2007: 69) and a recent Swedish study of firms on the Stockholm stock exchange (Arvidsson 2011). The Swedish study found an upward trend in the amount of human capital information disclosure over the past 3 years in Annual Reports. Respondents' explanation for this trend was because human capital is key to understanding their companies and how the "value and economic results are created" (Ibid: 288). Gallego and Rodriguez's (2005) study, which included some real estate firms, also found both relational and human capital to be the most important intangibles. The questionnaire results from this first phase of data collection are also similar to the findings of the case studies presented in Chapter Six (see section 6.2.4 and 6.2.5).

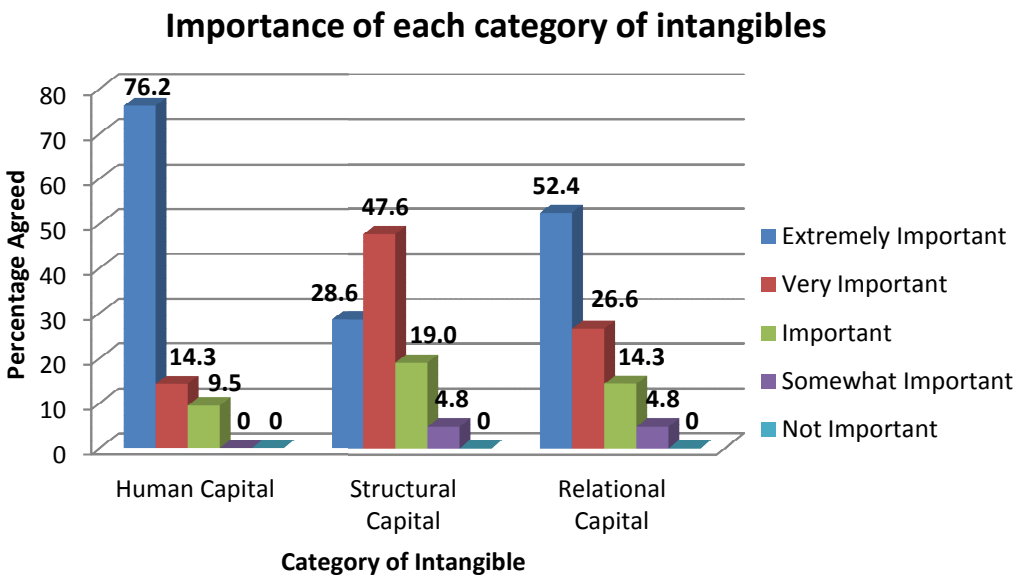


Figure 5.1: Questionnaire Results, Importance of intangibles to company success

Interview respondents all generally tended to also indicate that it is firstly people (human capital) followed closely by relations with stakeholders (relational capital) which are the most important intangibles for the success of their organisation. Stakeholders included both external ones such as clients (tenants, owners), local communities, shareholders, government bodies, institutional investors, and industry associations and the natural environment and internal stakeholders being their staff. While interviewees did not feel that the intangibles of companies in the property and construction sector are unique to other sectors or that there are any sector-specific intangibles, they felt that the high importance of people and stakeholder relationships is because of the nature of their industry (i.e. being project-based) they have more people and relationships to manage as illustrated by the response from Interviewee 3 below:

> *"... as a business entity what they've got to deal with is the people who work for them and the capital that comes with that, the people who supply to them. I guess they have quite a strong interaction with contractors that a lot of other sort of areas don't have.* ***A lot of businesses will just have the supply chain producing widgets coming through, whereas, they'll be dealing with both the supplier of the materials as well as people****...so I don't actually think there is any specific ones in this sector that don't reside in other sectors. Some of them are bit more important."* (Interviewee 3, Research Analyst, 27.04.2010)

Interviewee 8 also agreed that the people, or human capital, are the most important intangible resource in the company:

> *"[Our company] is really about people. The systems and all of that are very important but if you haven't got good people in there, if you haven't got something that people*

> *understand how you do business and explained easily and quickly, you don't want to be spending all your time training people how to do their job."* (Interviewee 8, Project Director, 12/05/10)

The above quote outlines that while people or human capital is the key intangible resource of the companies, Interviewee 8 also highlighted what many other interview respondents felt - that a successful organisation needs to have good systems, processes and culture (i.e. structural capital) in place to support and nurture its people. 47.6% of questionnaire respondents ranked structural capital as very important and 28.5% said it was extremely important. The importance of structural capital to achieve environmental performance targets, specifically in regards to building management practices, was brought up by some interview respondents. This might be due to the recent publication of an Australian study of commercial buildings which concluded that building owners could make significant improvements to their environmental efficiency rating by making simple changes to their building management practices which do not require large capital investment (National Project Consultants and Exergy Australia 2009). Interviewee 3 highlighted the key finding of that study which many of the interviewees from case study company A, B, and C, also highlighted which is that *"you can move from 2 to 4 [stars energy rating] just by management practices which costs peanuts and it's amazing how many REITs that aren't doing it"* (Interviewee 3, Research Analyst, 27.04.10). A key finding from the case study firms, which is discussed in Chapter Six and Seven, is the role that firm's existing intangible resources, or more simply its people, processes and relationships play in achieving environmentally and socially sustainable outcomes. The current research agenda in the sustainable construction literature is limited by its focus on creating a more sustainable built environment and overlooking the need to create more sustainable businesses.

5.3.1 The importance of intangibles for sustainable development success

5.3.1.1 Human capital

Human capital was also cited a number of times in the case studies as the key nonfinancial resource for operationalising sustainable development strategies (especially in the absence of management direction and good processes in place) and that 'upskilling' all of the people in the organisation is key to improving a company's overall sustainability performance (see Chapter Seven). Getting supply chains to meaningfully reduce their ecological footprint is something, according to Interviewee 3, that a lot of property developers are grappling with. Examples of how the sustainability leaders are encouraging organisational change in their supply chain is discussed in further detail in Chapter Seven (see section 7.5). What is relevant here is the observation that some companies are driving change by educating or training people who are in their supply chain. For example, Interviewee 2 shared how their firm was driving meaningful change through the supply chain to improve the energy performance of not only their building assets, but of the wider building stock. He stated:

> *"...I think the other part of market transformation is to get our NABERS [National Australian Built Environment Reporting System] ratings done every year. It* ***used to be the domain of the sustainability guy****...and then we* ***devolved it to the building managers****. So the building managers, you're responsible for the NABERS ratings. You run the building for goodness sake - and they got their heads around it so now we're getting to the point where we are saying to* ***the mechanical contractors and the controls people that maintain our buildings*** *... 'here's some information we have got about how this building performs and we'll show you how to use these tools', ...* ***now you're in charge of the NABERS rating****... So if we can* ***devolve that responsibility through to the people that have the most impact on it****, those contractors work for a bunch of other people. They should be able to offer that as a service to the C and D grade[7] building owners and say look we understand NABERS ratings, we understand what's impacting your NABERS rating and we can show you how to fix it. So* ***my hope is that the diffusion of the understanding*** *of how the rating works and understanding what makes the difference in the building* ***will sort of flow through and then out to the other parts of the market*** *that otherwise* [would not be doing it]." (Interviewee 2, Sustainability Manager, 18.05.2010)

This transfer of responsibility for achieving the annual energy ratings of its properties on one hand could be seen as the larger more powerful corporate entity pushing change on their supply chain. However, in Chapter Seven (see section 7.5.2) an example of a larger corporate firm providing the resources (data, tools) to their clients, with the aim of driving change in the wider built environment, is discussed. As is discussed in Chapter Seven as well, the sustainability leaders have realised in some cases this is necessary in order to help their own firm overcome barriers to moving beyond the corporate sustainability stages of eco-efficiency (Dunphy et al. 2007) and eco-effectiveness (Young and Tilley 2006). This finding is congruent with that of Stubbs and Cocklin (2008b; 2008a) discussed in Chapter Two (see section 2.5.2).

5.3.1.2 Operationalising and embedding sustainable development

How companies in the sector operationalise and integrate sustainability into the way their business operates means, according to Interviewee 5, that companies need more than just financial resources. They also will need to mobilise their intangible resources (human and structural capital) to make it happen. Using the example of developing a global metric for carbon reporting Interviewee 5 argued that we currently understand the natural capital aspect (i.e. carbon emissions and how to calculate them), but do not fully understand the intangibles/IC (human, structural and relational capital) required to not only develop a global carbon metric, but to continually reassess it and improve it. His quote, while lengthy, highlights how the intangibles/IC taxonomy provided a useful framework to help identify the process and resources needed to do so. He stated:

> *"we are going to develop a suite of indicators...* ***that it is only going to deal with or take us to a place with things that we already understand*** *which is that [pointing to physical capital, money and natural capital – which he added to the intangibles/IC*

[7] The Property Council of Australia grades commercial buildings from Premium down to D grade.

> *diagram]... in terms of natural capital we understand that our carbon emissions are X and hopefully one day we will be able to do that for the whole sector in Australia and the world... So that is work that we can do and we will get something tangible that you can put a cost on and a figure on* ***but the bit why the [intangibles/IC taxonomy] sat with me was getting to that point*** *[of having an indicator]* ***and process means that we have to go through this R&D cycle and continually change, reassess and take actions...****constantly looking back and going right what we assumed is that correct or not? Do you know what it's not as easy as we thought as collecting a bunch of numbers from different people, in fact we've got to* ***create an IT tool that then lets us control data quality and analyse****...Or you know that we work with our supply chains to get direct information from them...Once we've got better data I can see what does that mean in terms of our trending, our benchmarks and then to finally get to the point where we've agreed indicator, but to agree an indicator then leads to the natural step of setting targets for reductions. So then how do we achieve that and how does that filter through our organization?*" (Interviewee 5, Sustainability Executive - Systems, 18.05.2010)

This interviewee's interpretation of the practical application of the intangibles/IC concept in the lengthy quote above was included as it almost perfectly reflects Mouritsen's (2004) critique of current approaches to understanding intangibles/IC which are incorrectly fixated on developing "output" measures and indicators for intangibles. Knowledge is a *reflexive process* and not an *object* to be measured as contemporary intangibles/IC management theory proposes. Mouritsen (2004: 262) argues "knowledge is never adequate; it is never reached; and it can always grow. Knowledge produces its own demise, because it is used to question knowledge". What is useful about measuring knowledge is not to get an accurate picture of reality for descriptive purposes (i.e. as an output) but rather as an input to help "transform reality" and help organisations direct their "knowledge towards purposes that involve being able to make a difference to somebody or something" (Mouritsen 2004: 262). This approach to intangibles/IC to shift the focus from output measures to inputs for change is what is needed to operationalise sustainable development into existing business models. This is a key finding and contribution of this thesis and is discussed in Chapter Eight (see section 8.3).

The next section of this Chapter summarises and analyses the data in relation to how firms in the sector categorise or classify their intangibles.

5.4 Categorisation of intangibles

Chapter Two outlined the rationale behind the selection of the intangibles/IC taxonomy as the most appropriate way to define/categories the intangibles of property and construction sector firms (see section 2.2.1). The empirical data discussed in section 5.2 has reinforced the appropriateness of the intangibles/IC taxonomy as a way to define intangibles in the sector. As the primary aim of this Chapter is to understand intangibles/IC as a ***phenomenon*** in the Australia property and construction sector, an important step was to examine how

firms currently categorise their intangibles resources and how this compares to the existing intangibles/IC taxonomy (see Figure 2.3).

Although most interview respondents agreed with the three main intangibles/IC categories presented to them and their relevance to their organisation. Sixteen (76.2%) of the questionnaire respondents indicated that their organisation had no specific categorisation or classification system for their intangibles. Four (19.0%) said they did have a classification system and one respondent was unsure. Questionnaire respondents who indicated their firm had a classification system they were asked to elaborate on what it was. Their responses were:

1. Access to capital
2. Corporate and project procedures are documented
3. Sustainability

None of the questionnaire responses above provide much additional insight into how the firms classify or categorise their intangibles and without the ability to follow up on the specific respondents it is difficult to make any interpretation of their responses. The following interpretation of their responses provided is therefore somewhat subjective, but is grounded in the researcher's knowledge of the intangibles/IC theory and literature. Response 1 was brought up by some of the interview respondents, however, not so much as a distinct category of intangibles, but rather as an indicator that they were successfully managing and disclosing their nonfinancial performance to the investment community, thereby giving them access to capital. Assuming the questionnaire respondent was referring to access to **financial** capital, Interviewee B3 in case study Company B also touched on this point. He highlighted that the investment community is "*increasingly putting hurdles around it [capital] and more so there is funds being established that are dedicated to sustainable organisations*" and being able to have conversations around their nonfinancial performance gives them "*access to pots of money not available to the remainder of the investment community"*. Response 2, processes and procedures, is part of what is defined as a firm's **structural** capital (see Table 2.1). Response 3 indicates that the respondent's firm classify their intangibles more broadly under the heading of sustainability, which was a recurring theme in the interviews as mentioned in section 5.3.

Interview respondents provided a bit more insight into how firms categorise their intangibles/IC. A few interview respondents referred to their organisation's values, developed at the corporate level of the organisation, as they way in which they categorise the intangibles/IC of their organisations (see Table 5.1), while most others did not indicate there was any formal, overarching identification or classification of their organisation's intangibles. In Table 5.1 there seems to be an even split in focus between human capital and relational capital. For those respondents who referred to the organisational values, these often also formed the structure or categories of their nonfinancial performance

reporting, including the corporate social responsibility (CSR), sustainability report or company website.

Company Type	Company Values	IC [8] category
Construction Contracting (Interviewee 7a)	People	HC
	Partnerships	RC
	Profit	FC
	Performance	-
Construction Contracting (Interviewee 10)	Our people are the foundation of our success	HC
	Achievement through teamwork	HC
	Safety and health above all else	SC
	Enduring business relationships	RC
	Respect for community and environment	RC
Diversified Property Group (Interviewee 1)	Understanding & engaging with stakeholders	RC
	Engaging with our people	HC
	Engaging investors, customers, suppliers & partners	RC
	Strengthening our place within the community	RC
	Reduce impact on the natural environment	NC

Table 5.1: Categories of Intangibles identified by Interview Respondents

The review of the voluntary disclosure in the annual reports of Australian Stock Exchange (ASX) listed property firms provided some additional insight into how companies broadly categorise their intangibles/IC and the results are summarised in Table 5.2. According to Williams (2008) voluntary disclosure is defined as information that is not required by laws or regulations or that goes beyond the minimum required in a mandatory area. As outlined in Chapter Four (section 4.5.3.2) the main headings of voluntary nonfinancial disclosure from the reports were been collected and grouped according to the traditional intangibles/IC taxonomy.

The results presented in Table 5.2 indicate a clustering of disclosure by the firms under relational capital. Upon closer examination of the categories the explanation for this is because traditionally in the intangibles/IC taxonomy environmental and social sustainability related activities are grouped under relational capital (Lopez-Gamero et al. 2011). This same convention was used in this research to allow for comparison with the literature. However, if Allee's (2000) taxonomy (see Figure 2.12) was used to group the empirical data the distribution of the disclosures in the area of relational capital would be lower. Additionally no data was collected to indicate the amount of text under each heading and its content, so only limited conclusions about the emphasis and importance of each category can be made. There appears to be only a small amount of disclosure relating to structural capital in the annual reports, which seems to contradict the findings of

[8] HC – Human Capital, RC – Relational Capital, SC – Structural Capital, NC – Natural Capital

Arvidsson's (2011) empirical study. She found an increase in the amount and relative importance of disclosure on structural capital in recent years, but concluded that this may be as a result of increased statutory requirements to report on corporate governance. All of the AREIT's annual reports in the sample did have extensive corporate governance sections which disclosed information about such things as the company's management processes, ethics policies, risk management frameworks, but this disclosure was not included in this review as the **required statutory reporting sections were excluded from the content analysis.**

What is clear from the data collection in the content analysis and the interviews is that terminology used in business practice is different to the theoretical intangibles/IC literature. However the categories used by the firms to report on their intangibles generally relate to one of the intangibles/IC categories of human, structural or relational capital. This finding is similar to Huang et al. (2007) who found that the empirical groupings that emerged from their data on Malaysian firms resembled the literature-based categories. Their empirical groupings in some cases were a more detailed version of the three categories in the traditional intangibles/IC taxonomy.

	Human Capital	Structural Capital	Relational Capital	
Company Name	**Nonfinancial Performance Categories Reported**			**Section in Annual Report**
Ardent Leisure Group	– People Practices – Civil Rights	– Quality – OH&S – Corporate Governance	– Community Relations – Environmental	Sustainability
Australand Group			– Corporate Responsibility	MD & Chairman Letter
	– Diversity	– Safety –	– Sustainability – Community	People, Safety and Sustainability
Bunnings Warehouse	– Build knowledge and understanding	– ESG in investment analysis and decisions – ESG in asset ownership and resource use	– ESG reporting – Tenant and supplier engagement	Sustainability
Cairndale			– Community – Environment	Main Report
Centro Properties Group			– Investor Communications	Chairman's Report
	– Our People		–	CEO's Report
CFS Retail Property Trust			– Sustainability	Fund manager's report
		– Governance	– Environment – Social – Stakeholder Engagement – Water – Waste – Energy	Sustainability
	– People			People

	Human Capital	Structural Capital	Relational Capital	
Company Name	**Nonfinancial Performance Categories Reported**			**Section in Annual Report**
Charter Hall Group	– Developing our people	– Creating a sustainable company & portfolio	– The community	Chairman's Letter
	– Our people		– Resource Efficiency – Communities and Regeneration – Shareholders and investors – Customers	Sustainability section
Charter Hall Office REIT			– Continued focus on sustainability	Chairman and CEO Report
			– Energy conservation responding to climate change – Water savings – Waste management – Engaging our customers	Sustainability
Charter Hall Retail REIT			– Responding to climate change – Energy efficiency – Water management – Managing waste	Sustainability

	Human Capital	Structural Capital	Relational Capital	
Company Name	**Nonfinancial Performance Categories Reported**			**Section in Annual Report**
Commonwealth Property Office Fund		– Governance	– Sustainability	Fund Manager Report
			– Environment – Social – Energy – Water – Waste – Stakeholder – Community Engagement	Sustainability
	– People			People
FKP Property	– Our Employees		– Our Customers – Our Investors – Our Partners – Our Brand – Our responsibility	About Us
		– Occupational Health and Safety		Occupational Health and Safety
GEO Property Group			– Communities development	Chairman & MD Report
Goodman Group			– Building relationships	CEO report
		– Programme leadership	– Environmental progress – Stakeholder engagement process – Communities Progress	Sustainability

	Human Capital	Structural Capital	Relational Capital	
Company Name	**Nonfinancial Performance Categories Reported**			**Section in Annual Report**
ING Real Estate Health Care Fund	– Strengthening the Corporate Services team	– Enhance Management Process Drives Fund Performance		People
ING Real Estate Community Living Fund	– Strengthening the Corporate Services team	– Enhance Management Process Drives Fund Performance		People
Living and Leisure Group Australia	– People			Directors Report
Valad Property Group	– People		– Environment – Corporate Responsibility	Sustainability
Westfield Retail Trust			– Sustainability – Community	Sustainability

Table 5.2: Summary of AREITs nonfinancial reporting categories

As outlined previously in this Chapter environmental sustainability and social sustainability categories of intangibles were mentioned by a number of interview respondents as intangibles of their company. This was also a key finding in Chapter Six (see Figure 6.1). Although the questionnaire results did not corroborate the interview and case study findings, even when the responses received from sustainability managers were isolated in the results, this could simply be a limitation of the questionnaire as a method and people's reluctance to elaborate on or provide short answers.

There is enough data to support the argument that the traditional intangibles/IC taxonomy needs to be expanded to incorporate environmental and social intangibles as distinct categories to ensure compatibility and accurately reflect the nonfinancial or intangible resources of a sustainable business. As outlined in Chapter Two, to date Allee (2000) is the only other researcher in the field to make this argument.

The next section of this Chapter discusses the results of the data collected on indicators and reporting of intangibles by firms in the property and construction sector.

5.5 Indicators and reporting

5.5.1 Reporting

Fifteen (71.4 %) of questionnaire respondents indicated that their firms collect data on their intangibles/IC and Figure 5.2 summarises their rationale for collecting the data. The top five reasons (in order from highest to lowest) for collecting data and reporting on their intangibles are:

1. Attracting and retaining employees;
2. Improving customer relationships;
3. Supporting the company strategy;
4. Improving strategic planning; and
5. Supporting strategic decision making and improve external stakeholder relationships.

It is uncertain from the questionnaire results what percentage of the data collected is used for internal decision making and what is reported externally. For example in order to manage their risk, according to Interviewee 8, developers often undertake quantitative and qualitative (i.e. focus groups) market research to improve their customer relationships. However, most data collected is not published or disclosed publicly as it would give away their competitive advantage as highlighted by Interviewee 8:

"*That's our IP full stop. We don't want to give it away to competitors. We'll publish it where we need to....*" (Interviewee 8, Project Director, 12/05/10)

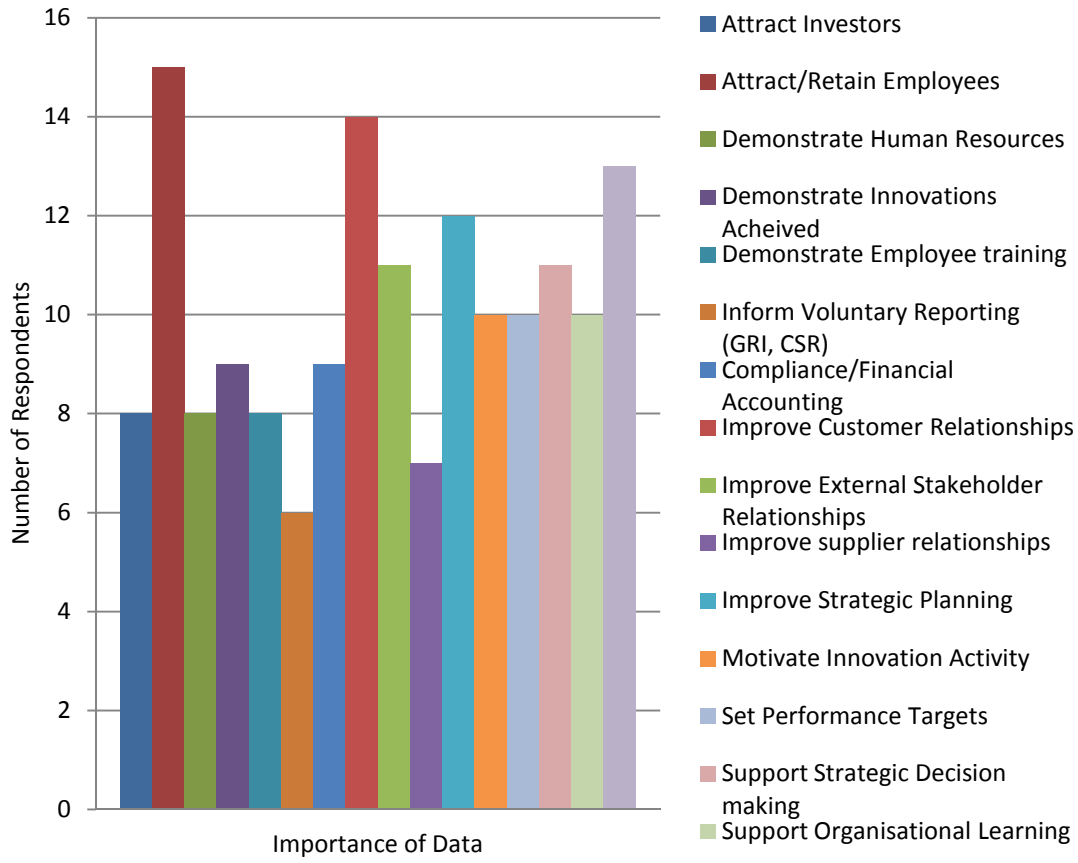


Figure 5.2: Why firms collect data on their intangibles

All of the questionnaire respondents, except for one who was unsure, indicated that their firm's traditional financial reports do not sufficiently report their intangibles/IC performance. Gallego and Rodriguez's (2005: 123) survey of financial managers also found a similar results with 82% of respondents indicating that intangibles are "currently not well reflected in financial statements." This also reflects the general consensus in the financial accounting literature that financial statements are becoming "less informative on the firm's current financial position and future prospects" as although they provide "reliable" data it is often not "relevant" to the value of the company or its future performance (Canibano et al. 2000: 103).

Fifteen (71.4%) respondents in this survey indicated that other disclosure mechanisms are used and marketing material, the company website and CSR reports were given as the most likely places for firms to report on their intangibles/IC (See Figure 5.3). This result was somewhat unexpected as recent literature on intangibles/IC reporting, such as Passetti et al. (2009)and Oliveira et al. (2010), argue that firms are using their voluntary CSR and sustainability reporting to disclose information on their intangibles. However, when reviewing the Annual Reports of the AREIT sample in the content analysis it was noted that only a small percentage (5 out of 41) actually produce a separate sustainability or CSR

report, so this may partly account for this result. As mentioned previously many interviewees also indicated that the investment community, particularly the ethical and socially responsible funds, are increasingly requesting this type of information and companies are disclosing the information by responding to the investor's surveys, questionnaires and through face-to-face interviews. This result is similar to the findings of Durst's (2008) study of German SMEs and Royal and O'Donnell's (2008) study of the Australian and Hong Kong investment community.

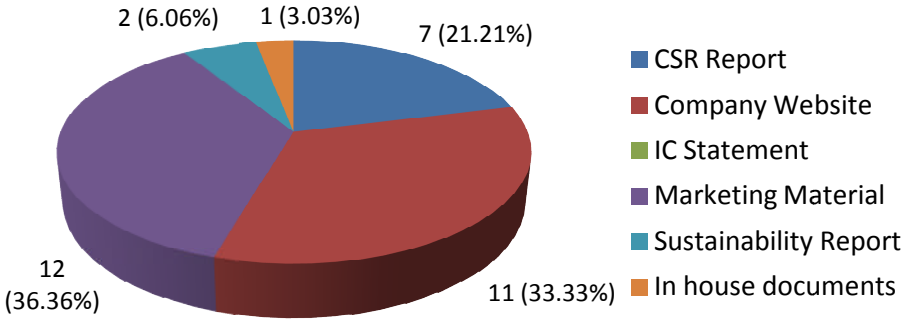


Figure 5.3: Reporting mechanisms beyond traditional financial reports

According to the literature the annual report is still also said to be one of the best places to find out disclosures of nonfinancial information/intangibles for a company, particularly because of its timeliness and the information contained within is audited (Beattie and Thomson 2007). A recent Swedish study by Arvidsson (2011) also found an increasing focus in the amount of information on intangibles presented in the annual report driven by both regulatory and market-driven demands. Respondents to her questionnaire indicated that this increased disclosure comes in the form of non-financial key performance indicators (KPIs) and qualitative data presented primarily in the CEO's letter, the environment, safety and health section and the HR section. The annual reports of the AREIT sample in this study were generally good at providing information on the company's human capital particularly KPIs about the management and executive staff, along with structural capital in relation to corporate governance. However these two areas of information disclosure are a statutory requirement in Australia. The review of the annual reports for the AREIT sample amount and quality of voluntary disclosure of intangibles in the Annual Report is quite varied. Nineteen of the AREITs had no disclosure in the Annual Report, beyond that which is a statutory requirement. Five of the companies (DEXUS, GPT Group, Mirvac, Stockland, Cromwell) reported their intangibles performance in their CSR/Sustainability Report. Interviewees also suggested that the information on their intangibles is also reported in their other main sustainability reporting avenues including the Carbon Disclosure Project

(CDP), Dow Jones Sustainability Index (DJSI) and the Global Reporting Initiative (GRI). Interviewee 5 agreed and added that analysts who review their company use the intangibles information disclosed in these sustainability reporting avenues when forming views about the company. Interviewee A2 from case study Company A also shared this view.

Lev and Zambon (2003) argue that the relationship between intangibles/IC disclosure and other types of company reports needs more investigation to improve understanding of the ***phenomenon***. For example, Striukova et al.'s (2008) empirical study of UK firms concluded that the amount of intangibles/IC disclosure in the annual report cannot be taken as a proxy for the overall picture of a firm's intangibles/IC levels. For example they found that only about a third of all disclosures on intangibles/IC were found in annual reports. Company websites were found to have a marginally higher rate of disclosure (36 percent) than in the annual report (32 percent). These were followed by the annual review (12 percent), interim reports (6 percent) and analyst presentations (6 percent). Sustainability or CSR reports were said to only represent 1 percent of intangibles/IC disclosures of the firm. Despite this study's finding on the low percentage of intangibles/IC disclosure in sustainability or CSR reports there is a growing body of empirical studies in the intangibles/IC literature investigating the similarities and convergences between corporate sustainability and/or CSR reporting and intangibles/IC disclosure. In fact a number of other empirical studies have identified an organisation's sustainability or CSR report as a better source of intangibles/IC disclosure (Cordazzo 2005; Del Bello 2006; Passetti et al. 2009; Oliveira et al. 2010).

5.5.2 Indicators

Questionnaire respondents were provided with a list of approximately nine indicators, which were based upon previous studies in the intangibles/IC literature (see section 4.5.1.2), and were asked to indicate whether or not they were relevant to their firm. The results are summarised in Table 5.3, Table 5.4 and Table 5.5 below. Few existing studies on the property and construction sector exist to compare the results of the relevant indicators. Striukova et al.'s (2008) empirical study of UK based firms' disclosure of intangibles/IC did include the real estate/utilities sector and Gallego and Rodriguez's (2005) empirical study of Spanish firms also included a few real estate firms in its sample. However, neither study had comparable data on indicators by sector.

The results of the questionnaire indicated that for human capital, job satisfaction (90.5 percent) and employee development (90.5 percent) to be the most relevant indicators. For structural capital, organisational culture (95.2 percent) and corporate values (90.4 percent) were indicated as the most relevant indicators. Organisational culture and company values were also identified by the case study firms as key factors in why their firms are leaders in sustainability (see sections 6.2.6). Company reputation was also identified as a key driver

for operationalising sustainable development and continually improving their performance (see section 6.2.4.3). For relational capital corporate reputation (95.2%) and supplier relationships (90.4%) were identified as the most important indicators for firms in the sector. This is somewhat in line with the results of Striukova et al. (2008) who found that the highest proportion of *actual* intangibles/IC disclosure for the real estate/utilities sector were related to customers (26%) and company reputation (21%).

HUMAN CAPITAL	% agreed indicator relevant
Job Satisfaction	19 (90.5%)
Employee Development	19 (90.5%)
Employee Experience/Education/Voc. qual.	18 (85.7%)
Staff Turnover	18 (85.7%)
Leadership Qualities of Managers	18 (85.7%)
Employee work relate competencies	16 (76.2%)
Recruitment	15 (71.4%)
Employee work relate knowledge	14 (66.7%)
Staff Productivity	12 (57.1%)

Table 5.3: Human capital indicators

STRUCTURAL CAPITAL	% agreed indicator relevant
Organisational culture	20 (95.2%)
Corporate values	19 (90.4%)
Processes and Routines	18 (85.7%)
Networking systems w/customers, suppliers, databases, etc	17 (81.0%)
IT systems	16 (76.2%)
Internal communication system	15 (71.4%)
Management philosophy	14 (66.7%)
Intellectual Property	13 (61.9 %)
Effectiveness of Expenditure on R&D	8 (38.1%)

Table 5.4: Structural Capital Indicators

RELATIONAL CAPITAL	% agreed indicator relevant
Corporate Reputation	20 (95.2%)
Suppliers Relationships	19 (90.4%)
Customer Relationships	18 (85.7%)
Environmental Activities	18 (85.7%)
External communications	17 (81.0%)
Business Alliances/ Partnerships/ Collaborations	17 (81.0%)
Market demands for Product/Service	16 (76.2%)
Ethical Matters	13 (61.9%)
Community Relations	13 (61.9%)

Table 5.5: Relational Capital Indicators

5.5.2.1 Challenges

Interview respondents often spoke of the challenges of developing indicators for their intangibles. Often there is a pressure to monetarise indicators, and two respondents spoke of not having the 'luxury' of reporting other than in terms of financial value (Interviewee 11 and Interviewee 6). A common strategy to side-step the pressure to develop financial indicators or direct links to financial performance for these two respondents is to present performance information about intangibles is terms of *risk and opportunity*. For example something could be seen as a risk to the company reputation or opportunity for the company reputation. Another strategy commonly suggested to develop indicators for intangibles is to find a suitable tangible indicator as a proxy to make the intangible tangible. The challenges around the development of indicators and monetarisation was also a theme which emerged in the case study data (Phase Two) and is discussed in further detail in the next Chapter (see section 6.3.5). The sustainability managers in the interview sample had a tendency to focus on issues around the development of indicators in the domains of environmental performance and social citizenship. There was a general feeling that they understood environmental performance indicators, but that social sustainability metrics are still a largely unexplored area. For example Interviewee 1 below stated:

> *"...some of the challenges around reporting and managing the intangibles, it's the metrics...the environmental ones are now well understood and well embraced, the social metrics will be the next group to become the important factor that possibly will require legislation as well*." (Interviewee 1, National Sustainability Manager, 27.04.2010)

A tendency to focus on the environmental aspects of sustainable development first and an acknowledgement that social sustainability is an area poorly tackled and understood by the sector appeared a number of times in the case study data and is discussed in Chapter Six and Seven. The final section of this Chapter summarises the key points discussed within it and outlines the results and analysis to be discussed in Chapter Six and Seven.

5.6 Summary

The aim of this Chapter was to explore the ***phenomenon*** of intangibles in the Australian property and construction sector. There is a clear and consistent theme in the data which shows that organisations within the Australian property and construction sector identify with characteristics of organisations in the knowledge economy.

The annual reports of the companies in the sector which reported on intangible assets on the company balance sheet were limited and most commonly across the AREIT sample intangible assets were defined as 'goodwill', 'management rights' and 'development rights over land'. The lack of intangibles on the balance sheets is more an issue of the limitations

of traditional financial accounting of intangibles as has been highlighted in the literature and by the respondents.

The intangibles/IC approach to identifying intangibles was generally well accepted. It has the potential to help companies in the sector identify and define the intangible resources of their company as a way to overcome the larger structural barriers of traditional financial accounting. In this first phase of the data collection the more widely accepted taxonomy of intangibles/IC was used to allow for comparisons of this study's findings (particularly the questionnaire) against previous findings in the literature. However, early indications in this first phase data analysis and results highlight the limitations of the traditional intangibles/IC taxonomy to specifically consider environmental and social performance as separate categories, instead placing it under relational capital.

Two key points from this Chapter that the empirical data has demonstrated are:

- The intangibles/IC approach to intangibles is relevant to Australian property and construction firms; and
- The relevance of the intangibles/IC concept is related to its ability to facilitate organisational change (***practice***) and not to developing a universally true management or measurement framework (***phenomenon***)

The next Chapters (Chapter Six and Seven) will examine intangibles/IC in ***practice***, particularly in the context of how Australian property and construction sector firms are integrating sustainable development into their business model.

"To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all."

William Osler (1849-1919)

6 Results and Analysis: Managing Intangibles

Chapter Six is the second of three Chapters which present the results and analysis of the data collected within this thesis. It introduces the case study firms and focusing on ***how*** the companies define, identify, measure, value and report their intangibles in ***practice***. It highlights what intangibles the companies deem to be most important and how they influence their business practices as well as issues surrounding the practice of measuring and valuing intangibles.

The first section (6.1) of this Chapter provides a brief background to the development of the sustainable development strategies of the case study companies. The other three primary sections (6.2, 6.3, 6.4) focus on identifying, measuring/valuing and reporting intangibles – which are key elements of an intangible management framework outlined in Chapter Two (section 2.7). The main source of data for this Chapter is the semi-structured interviews conducted with employees at the case study companies. This Chapter primarily addresses research question number two (RQ2).

6.1 Background: The sustainability strategies

As outlined in Chapter Four the companies in this study include two Australian **publicly** listed corporations, one multi-national **publicly** listed corporation headquartered in Australia and one medium to large sized **privately** owned Australian company. Each company operates within the property and construction sector and the rationale for their selection was outlined in section 4.5.5.2. Table 4.5 (page 102) also provided a summary of the key characteristics of each of the case study companies.

Between 2005 and 2006 Company A, B and C all established **formal corporate-level sustainability strategies to embed sustainable development across their entire organisation**. Azapagic (2003) argues that this is a key first step for organisations in any sector to holistically implement sustainable development into their business model. Galbreath (2009) and Blackburn (2007) both agree that the theory-practice gap in operationalising sustainability is perpetuated by not only managers' lack of understanding of what sustainability actually is, but also how it links to their business strategy. Establishing links between the company strategy and the sustainable development strategy are important to corporate sustainability not being seen as an add-on policy that can be dropped or cut in a financial crisis for example.

Prior to 2005 all of the companies had already begun to incorporate environmental and social sustainability considerations into their business practices, focusing primarily on the built environment and/or at the project level of their organisation's activities. There are a number of examples of policies, programs and projects completed in the late 1990s and early 2000s which support this observation. However, according to their various annual corporate reports (Annual Reports and/or Sustainability, Corporate Responsibility or Environment reports) the companies were seeking to improve the consistency and comprehensiveness of their approach to embedding sustainable development into their organisations.

Influential external drivers for change in the sector, and more particularly the commercial property sector, were the establishment of two voluntary environmental rating tools – ABGR (Australian Building Greenhouse Rating) [9] and Green Star – both of which assess and benchmark building performance (Iyer-Raniga and Wasiluk 2007a; Newell 2008; Mitchell 2010; Warren 2010) and the creation of the Australian Green Building Council. To date these two rating tools remain the two most influential voluntary environmental built environment ratings tools in the sector, identified not only by the interview respondents but also consistent with the findings of Newell (2008) and Bond (2010). While Company D does not currently have a similar corporate level strategy to embed sustainable development into its organisation like the other companies, it does have experience in projects which use both of these voluntary rating tools and is experiencing increased pressures to improve its knowledge-base and performance in relation to sustainable development.

Sections 6.1.1 to 6.1.4 below summarise in greater detail the development of each company's sustainability strategy. The accounts below are based on a review of their Annual Reports, Sustainability/CSR reports and company WebPages.

6.1.1 Company A

In 2005 Company A created a board level Corporate Responsibility and Sustainability (CR&S) Committee. The committee developed and adopted a company-wide sustainable development strategy which was outlined in their inaugural CR&S report in 2006. The report set out the company strategy, plans for implementation and established their intention to track their progress via public reporting. A new Group Manager of CR&S was also appointed to guide the company's sustainability strategy. A CR&S employee committee was also created and is responsible for reporting to the board-level committee.

[9] ABGR was renamed the National Australian Built Environment Rating System (NABERS) in 2008 and is now able to rate a variety of building types and extends beyond energy performance (i.e. water, waste etc.)

The employee committee has representatives from across the company who are responsible for implementing specific aspects of the strategy.

6.1.2 Company B

In 2005 Company B broke off ties with its parent company. Shortly thereafter it set out to achieve consistency in how to integrate sustainable development into the business practices across the company. In 2006 it created a Corporate Responsibility Steering Group (CRSG) which is chaired by the Chief Executive Officer (CEO) and had representatives from each area of the business on it. The CRSG developed a strategic framework and plan for the period from 2007 to 2010. To drive the implementation of the strategy a Head of Corporate Responsibility was appointed in 2007 and a Board Corporate Responsibility Committee was established which the CRSG reported to. The Corporate Responsibility Strategic Plan set out to:

- develop the internal governance structures and accountability for achieving the business goals;
- integrate corporate responsibility principles and environmental performance targets across the company's activities; and
- grow the capacity of staff and key stakeholders on the topic of corporate responsibility.

6.1.3 Company C

Company C has a longstanding reputation as a leader and innovator in areas such as health and safety, community development, environmental performance and company culture – and this reputation is recognised within the industry. In 2005 the Board made a commitment to measure their sustainability performance and report it to the market. In 2006 they established a Global Sustainability Group led by a newly appointed Global Head of Sustainability and completed their first Sustainability Report. In 2007 the Board approved a range of short- and long-term sustainability aspirations and undertook a review of existing sustainability metrics to identify what additional data was required to monitor progress against the aspirations. To embed sustainability throughout the organisation globally the sustainability aspirations provided objectives and targets for each of the company's business units, as well as an action plan to operationalise them. Sustainability executives were appointed in each business unit and were charged with the responsibility of developing, reporting and maintaining the sustainability initiatives.

6.1.4 Company D

As previously mentioned Company D does not currently have a sustainability strategy that is similar to the other three case study companies. It is, however, ISO 14001 certified and has completed a number of building projects which have been acknowledged for their

sustainability performance. Holton et al.'s (2010: 156) case study of firms in the UK construction industry found that "managing for sustainability...was found to have begun with a compliance approach based on the development of ISO 14001 certified environmental management systems." The focus of Company D's strategy is on building and maintaining relationships – with its internal and external stakeholders. This is evidenced in its strategy to not only be an "employer of choice", but also "contractor of choice".

6.1.5 Defining Sustainable Development

The Brundtland Commission definition of sustainability (see World Commission on Environment and Development (WCED) 1987: 43) is the most commonly referred to definition of sustainable development by respondents. To make the concept of sustainable development relevant in business practice the companies have all adopted the three pillar approach to sustainability and embraced the TBL philosophy. For example Company C defines a "*sustainable organisation*" as one which "*is strategically and culturally committed to achieving economic development, social development and environmental protection* (Company C webpage 2010)." The sustainability leaders' approach to defining sustainability is generally congruent with the background literature outlined in Chapter Two (see section 2.3.2). The companies consider their combined environmental, social and financial performance to be what makes up their sustainability performance and they seek to improve it in a balanced way, however, there is still a strong emphasis on financial sustainability. For example, using a project-level example, The Head of Development at Company B explains stated:

> *"...you can't actually think about sustainability [referring to environmental sustainability] in a single entity without the financial and the social together. You've really got to think about all three because ultimately if you're genuinely concerned about sustainability than what you create has to be commercially successful. It would be the least sustainable thing if it was a white elephant and somebody builds another one up the road."* (Interviewee B4, Head of Development, 27.10.2010)

Additionally, what was found across all of the companies is that often when respondents speak about sustainability they were primarily referring to environmental performance. This may be partly because this is the pillar of sustainability where they have undertaken most of their activities, primarily focusing on eco-efficiency. This finding is discussed in greater detail in Chapter Seven. It is also congruent with the literature presented in Chapter Two on businesses' current approach to sustainable development.

The remainder of this Chapter focuses on the various aspects of managing intangibles including how they are identified, measured, valued and reported. The next section of this Chapter discusses common themes in relation to the identification of their intangibles.

6.2 Identifying Intangibles

The sub-sections below outline how the case study companies define and indentify their intangibles. It highlights what intangibles the companies deem to be most important and how their identification is related to drivers for sustainable business practices and sustainable wealth creation (see section 1.6.1).

6.2.1 The what?

Interview participants across all of the case study organisations found the 'what are the intangibles of your organisation?' question to be both interesting and challenging. Some indicated that they had never been asked that before and/or had not really given it much thought to formally identifying them, as demonstrated in the quotes below.

> "Y*ou know this is a really interesting question. I've not really thought about it in this way before*..." (Interviewee C5, Sustainability Manager – Investment Management, 24.11.2010)

> *"Gee it's a hard question to answer because I don't know if it's necessarily something I've really thought about before*." (Interviewee D5, Construction Manager, 19.10.2010)

However, the initial challenge of the question did not result in the respondents not being able to identify what they believe the intangibles of their organisation to be. All of the respondents were able to identify two or three of their key intangibles, of which people, reputation/brand and culture were the most commonly cited. A summary of the most common initial responses (by company) is found below in Table 6.1. Respondents generally identified that intangibles are the things that help them get the job done (people), the thing that wins them work (reputation/brand), and what makes them who they are (culture). Each of these will be discussed in more detail in sections 6.2.4, 6.2.5, and 6.2.6. By identifying intangibles in this way it reinforces the theoretical standpoint of the critical intangibles/IC researchers outlined in Chapter Two (section 2.2.6) that intangibles are not 'things', but rather the process of choice-makers exploring and exploiting possibilities (Chaharbaghi and Cripps 2006) where words, practices and indicators are mobilised to allow the company to do something (Mouritsen 2004). How the companies are mobilising their intangibles to operationalise sustainable development is discussed in the next Chapter. The sustainability leaders (particularly Company A and B) tended to also identify "the community", "community engagement" or other forms of social sustainability as key intangibles. This may partly be attributed to the fact that this is currently a key area that they have identified where they need to improve their performance. The property and construction sector as a whole has tended to focus on environmental performance in its implementation of sustainability and the sustainability leaders are now seeking to better understand what social sustainability means for their organisations. This is also discussed in greater detail in Chapter Seven.

Company	HUMAN CAPITAL	STRUCTURAL CAPITAL	RELATIONAL CAPITAL
A	-Knowledge	-SD/CSR Reporting Process	-Political relationships -Community -Stakeholders
B	-People	-Reputation -Brand -Culture	-Community
C	-Knowledge -People	-Intranet -Intellectual Property -Experience -Company Culture	-Energy Efficiency
D	-People	-OH&S Systems -EMS -Reputation -Brand	-Relationships with staff, clients, contractors

Table 6.1: Intangibles commonly identified by Interviewees

It is noteworthy that respondents were also often quick to point out what the intangibles of their firms are **not** – that is they are not an asset recorded on the company balance sheet even though, as discussed further in section 6.2.2, respondents clearly believe that their firm's intangibles are resources which create value for the company. If they are found on the balance sheet they are something that is "*typically recorded as a cost"* even though they are the "*nonfinancial things of value in the business* (Interviewee B2, Head of People and Culture, 18.05.2010)." For Company D the accounting-based concept of intangibles was identified as irrelevant. The finance manager of the Case Study D explained it in the following way:

> *"In [our business] there is no asset because it's more what I call a cash flow business...Having said that, when you talk about intangibles obviously our business relies on our people, without our people we don't have a business. We don't value that, we don't ascribe a dollar to it and put it in the balance sheets..."* (Interviewee D1, Finance Manager, 19.10.2010).

Wyatt and Frick (2010: 205) argue that this dichotomy found in practice, where intangibles are simultaneously identified as a value creating resources or "earning assets" but recorded as costs to the firm, reflects how the theoretical approaches to intangibles are "at odds" in the economics literature (value creating) and the accounting literature (cost). This conflict in interpretations also acts as a barrier to firms understanding the BCS, as argued in Chapter Two (see Figure 2.7, page 38). This barrier to accounting for intangibles in the case study firms is also characteristic of criticisms of traditional financial accounting, outlined in Chapter Two (section 2.7.5).

Voluntary reporting of their nonfinancial performance does however play a key role in how Company A, B and C identify their intangibles. Company A, B and C identified that it is in their CSR and/or sustainability reports where they tend to report on the company's

nonfinancial - and intangibles - performance. Reporting of intangibles is discussed later in section 6.4, however, an important observation to make here is the influence that CSR/Sustainability reporting has on the definition and identification of intangibles in Company A, B, and C.

The concept of 'materiality' – or identifying the issues which are 'material' to the business - is a commonly referred to approach for identifying their intangibles. This is generally undertaken as part of their CSR/Sustainability reporting processes. Identification of the material issues is done by engaging with internal and external stakeholders using a variety of data collection tools such as surveys, media reviews and focus groups. The concept of materiality originates from financial auditing and reporting practices. Materiality as defined in the Generally Accepted Accounting Principles (GAAP) is information which is "considered material if its omission or misstatement could influence the economic decision of users taken on the basis of the financial statements (FASAB 2011: 5)." The concept of materiality being referred to by the respondents however comes from the AA1000 Standard which is an assurance standard for how companies account for their management, performance and reporting on sustainability issues (AccountAbility 2006).

Beyond the influence of sustainability reporting on the identification of what the intangibles are, the identification of intangibles as the *material issues* of the company reflects the intangibles/IC researchers who take a critical management based view of intangibles/IC, such as Mouritsen (2004), Chaharbaghi and Cripps (2006) and Dumay (2009b). These authors argue that intangibles are not assets which need to be or can be universally identified (i.e. through a universally agreed taxonomy) or that their value can be or should be measured in a traditional financial accounting sense – both of which have long been the call of researchers for the advancement of theory in intangibles research. A number of the interviewees' views regarding the measurement and valuation of intangibles was also very similar to that of the critical management intangibles/IC researchers. This is discussed in greater detail in section (6.3.1). Intangibles are essentially the company's knowledge of something they need to know about (i.e. their material issues) and managing this knowledge is about "orientating the production of [their] knowledge towards a purpose" (Mouritsen 2004: 262). For Company A, B and C this purpose is to be a leader in sustainability and how they are managing and mobilising their intangibles towards this purpose is discussed in Chapter Seven.

As will be discussed in the next section, the sustainability leaders have also identified that what they *need to know about* (i.e. what is material to their continued business success) also transcends the traditional business organisational boundaries and includes so-called natural and social capital (see Figure 6.1) .

6.2.2 An intangible by any other name is still an intangible

Another common barrier to the identification of the intangibles of their firm related to the connotations associated with the term 'intangible' – specifically that it is associated with being immeasurable and therefore having no value. However, as discussed below, all four companies are keenly aware that their intangibles have some business value. When asked if there was a better or more appropriate term to use instead of the term 'intangibles' most indicated upon reflection they would still have used the term intangibles, however, some added that they would more typically use the term "*business drivers*" (Interviewee B3) or the "*value add*" (Interviewee C5) of the organisation.

The term *business driver* illustrates that in practice the intangibles of companies are deemed to be of value or a material issue when they are linked to the company's business strategy - as is what is expected in the literature (Kaplan and Norton 2004b; Mouritsen 2004; Pike et al. 2006). In fact, as was discussed in section 6.1, one of the key reasons behind how and why the case study companies manage their intangibles is to achieve their company sustainability strategy.

The term *value add* reflects the theoretical assumption in the literature that intangibles are linked to competitive advantage (Wernerfelt 1984; Peteraf 1993; Barney et al. 2001; Branzei and Thornhill 2006) and this sentiment was reflected by all of the companies. They are the things that "*differentiate us from our competitors"* (Interviewee C5, Sustainability Manager – Investment Management, Nov 24, 2010) and people (human capital) or the collective company knowledge base was identified by all of the companies to be their key source of competitive advantage. For example as Interviewee D1 explains:

> *"...in the construction game the brand it could be [Company D] it could be [Any Company] it could be whatever, there is some value, some significance to that. But more often than that you will find that when a potential client has a project he wants... he wants to eyeball the team. So it's the people. Yes the brand, the name whatever may get us into the door but what delivers the job, what gets the order is the people*." (Interviewee D1, Finance Manager, 19.10.2010)

Human capital as an intangible and source of competitive advantage is discussed further in section 6.2.5 below. All of the companies also agreed that their intangibles could be referred to as *nonfinancial resources of their company which have business value* and as discussed above are *material* to their continued success. Business value, as referred to by the respondents, was primarily financial value for the company however it was not necessarily 'direct' financial value but rather what they deemed 'indirect financial value'. Indirect financial value according to the respondents is the potential financial value created (or destroyed) through the management (or lack of) of their intangibles to achieve the company strategy, reduce risk, explore new opportunities and drive innovation. For the

sustainability leaders, creating value for the communities in which they operate was seen as a source of business value. This is what Porter (2011) refers to as 'shared value'.

It is relevant to note that there is a distinct difference between Company D and the three other companies, all of whom are globally recognised sustainability leaders, in what they identify their intangibles to be. The difference being that they expand the traditional boundary of a company's nonfinancial resources to include environmental or natural capital and social capital (See Figure 6.1). The significance of this inclusion is that managing, improving and growing these nonfinancial resources results in business value for the organisation. Elkington (2002) argues that this is the foundation of a sustainable organisation.

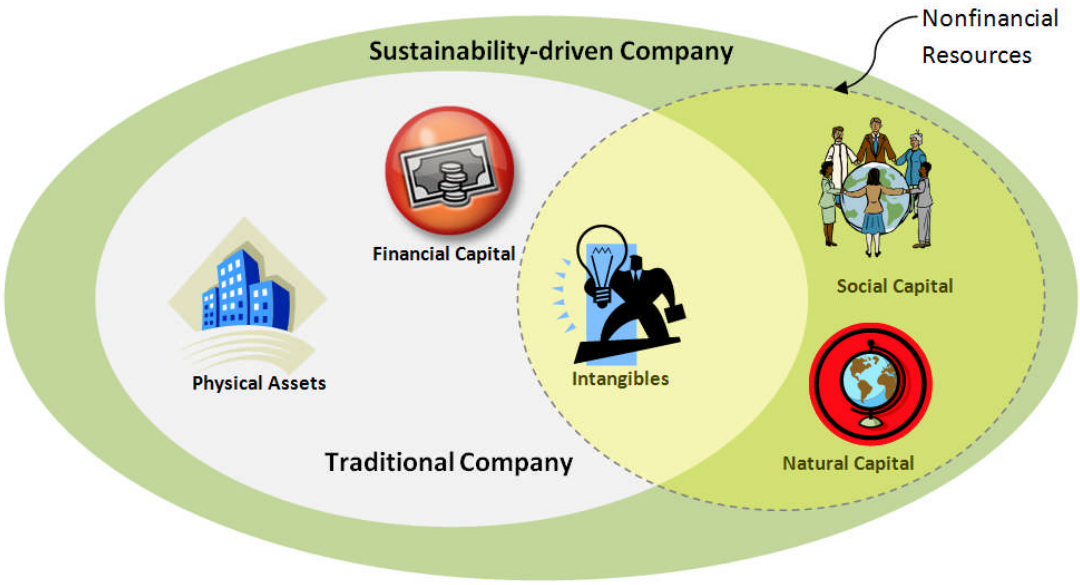


Figure 6.1: Expanding the definition of nonfinancial resources of companies

What is evident from the case study companies is that the term 'intangibles' by itself does not adequately describe or reflect the nature of these nonfinancial resources of the companies, however, a suitable alternative term could not be identified. The next section discusses how the intangibles of the case study firms can be characterised using the intangibles/IC literature.

6.2.3 If the taxonomy fits – wear it.

As outlined in Chapter Five the intangibles/IC taxonomy provides a useful and relevant framework to identify the ***phenomenon*** of intangibles in Australian property and construction companies. The intangibles/IC taxonomy was well-received by the case study companies as well and again it was felt to be a fairly accurate representation of what the participants identified as their company's intangibles. However, for the sustainability

leaders, Allee's (2000) taxonomy is a better reflection of their understanding of their company's intangibles (see Figure 6.2 below).

Figure 6.2: Intangibles/IC taxonomy of sustainability leaders, Based on: (Allee 2000)

For example the National Environment Manager for Commercial Property at Company A gave the following rationale for his preference:

> *"I like the way that that is broken out [referring to Allee taxonomy]. It kind of makes it more granular doesn't it? Because it is saying the same thing as what is contained in those three boxes [traditional intangibles/IC taxonomy] there but it is actually breaking them down a little bit more...that is probably traditional business [pointing to traditional intangibles/IC taxonomy] and this is possibly non-traditional [Allee] but is becoming mainstream now. So I guess it is a younger concept*." (Interviewee A1, National Environment Manager, 19.05.2010)

A detailed overview of the differences between Allee's (2000) taxonomy and the traditional intangibles/IC taxonomy is found in Chapter Two (see Figure 2.12). A key difference is the distinction between stakeholders with whom a company has a business relationship (i.e. clients, investors, suppliers, tenants) and those stakeholders who are part of the communities in which they operate. Interviewee A1 referred to this distinction as the *"political"* and *"non-political"* stakeholders of the company and in their sustainability report the distinguish them as their marketplace and their community. This distinction is important as the non-political dimensions of social sustainability are more about community development whereas the political dimensions of stakeholder engagement are about managing risk, meaning approaches to managing these intangibles resources and the potential value created would differ. Another key difference in Allee's (2000) taxonomy is the inclusion of environmental performance as a distinct intangible with business value and

again the sustainability leaders reflect this distinction in their practices. The importance of these distinctions occurring in practice is that it reflects the theoretical expectation that companies with a more sustainable business model will have an expanded view of business value creation beyond what is traditional (i.e. traditional company stakeholders) in industrial-aged business models (Allee 2000; Elkington 2002). How companies articulate the value creation from their intangibles is discussed in greater detail in section 6.3.

6.2.4 Reputation: easiest to identify

Reputation was the most common and easiest intangible for the majority of respondents to identify. For all the companies, reputation is more than just 'corporate spin'; it is their corporate identity and should be constantly evident their day-to-day activities. It determines how their business operates, tells their stakeholders (internal and external) what they believe in and what the company values are. Interviewee D5 describes their reputation as their:

> "*company creed...it's how we walk the talk, in as much as we practice what we preach...it's our location here, our building, it's our vans on the road, it's how we run our sites. And again the way we run our sites and present our sites is directly attributed to our brand name. Because at every one of our sites we'll have a [company] banner put in a prominent spot. We keep our sites clean and tidy. We don't have papers and rubbish rolling down the street. The site's always safe for people to walk past."* (Interviewee D5, Construction Manager, 19.10.2010)

For Company C their reputation and practicing what they preach was a key influence in their decision to increase the sustainability aspirations for their new Melbourne headquarters. This was also the basis for major renovations of the corporate headquarters for Company A and B. This is discussed in greater detail in Chapter Seven.

6.2.4.1 We don't own you, but we can impress you

Reputation was also a close second to human capital as the most important intangible for all of the companies. This was a similar outcome to the questionnaire results reported in Chapter Five (see section 5.3.1). Adams and Oleksak (2010: 139) argue that reputation has become the "new bottom line" for companies in the intangible economy and "is more important than ever" because other than their internal systems companies do not "own" any of their other intangibles. For example employees, tenants, suppliers and local communities "are not machines that can be bolted to the floor. You have to maintain a reputation that motivates them to "stay connected with you" (Adams and Oleksak 2010).

All of the companies felt that how current and potential employees perceive the company reputation is an important determinant of their long-term success. A good reputation, according to the respondents means that the company is able to attract staff with the qualities and experience they are looking for and that they are able to retain them over time. Carmeli et al. (2007) also found that employees identify more strongly and perform

better when they perceived their firms to have a strong CSR reputation, as compared with a strong financial performance reputation. This correlates with the views of many of the respondents across the four case study companies who indicated that their employees choose to work for them because of the company reputation for corporate sustainability (see also section 6.2.6). Employee perceptions of the company's sustainability reputation and performance is so important to Company A, B, C that they specifically measure it in their annual employee engagement surveys[10].

The employees are also the key messengers of the company reputation externally so their experience of the company and how they present it externally can have a positive or negative impact on the company. Interviewee B1 explains that what is important is how employees describe the company outside of working hours, specifically:

> *"...in non-corporate language...the less corporate speak and it better. Because people tend to switch off. We've got very good at the spin...when you have employees who are passionate, can't wait to get to work because of the potential to contribute to things in a way they find exciting and then can't wait to tell people about it, it's just worth its weight in gold."* (Interviewee B1, Head of Communities, 17.05.2010)

Reputation is also important to the firms because it can affect their ongoing so-called licence to operate. This is discussed in the next section.

6.2.4.2 Licence to operate

All of the companies highlighted the importance of their reputation for their financial success and well-being in the long-term, regardless of their current approach to sustainability. Adams and Oleksak (2010: 154) also argue that "a good reputation in the eyes of your stakeholders is you licence to continue to do business in the future."

The risk associated with the loss of licence to operate has been an influential factor for the three sustainability leaders to put more effort and resources into better understanding the social dimension of TBL sustainability. It is not only the risk of loss of licence to operate, but also the opportunity to establish a reputation as a good corporate citizen which the companies feel will ensure their financial success and well-being in the long-term. Company A, for example, has learnt that poor community engagement impacts their financial bottom line as their reputation and so called licence to operate in the community are revoked, as Interviewee A1 describes:

> *"I think lessons that we've learned along the way over the years about where we have done that badly [referring to community engagement] has led to a kind of the loss of license to operate...there is financial losses there because if it takes us three years to get a development approval there is a lot of costs there for us. And losses in*

[10] They annual employee engagement surveys are all conducted by the same external body, AON Hewitt see: http://was2.hewitt.com/bestemployers/anz/pages/index.htm

> *terms of reputation and perception....bad perception"* (Interviewee A1, National Environment Manager, 19.05.2010)

How companies are mobilising their intangibles to improve their social citizenship is discussed further in Chapter Seven.

6.2.4.3 Sustainability and corporate reputation

The companies' heightened awareness of its reputation is also influenced by the global and national CSR and sustainability movements. Even Company D, whose competitive strategy is not based upon being a sustainability leader like the others, is concerned with being seen as a 'good corporate citizen'. However, the driving force behind maintaining and building their reputation at this point is to achieve company growth.

> *"There are companies out there that aren't particularly fussed about their brand. Just drive around town and you'll see them. And I think that's because they're happy just being a little company. I think [we] aren't happy being little. We are constantly in the pursuit of growth and as a result you've got to grow in a positive way."* (Interviewee D5, Construction Manager, 19.10.2010)

For Company A, B, and C establishing a reputation and brand associated with corporate sustainability was also driven by a desire to achieve growth via competitive advantage. In fact there is noticeable competition amongst the sustainability leaders to be seen as the definitive industry leader or innovator with regards to sustainable development. It was not uncommon during the course of an interview (without prompting) to be told why a specific project or program was the first or best of its kind based on very specific details. For example, the first *as built* rated building in a *specific location* versus simply being the first *as built* rated building in Australia – a title which may have already taken by a competitor. The four interview quotes below illustrate this observation:

> *"[Building X], which is our 6 star Green Star building in [specific Sydney suburb], now that is a New South Wales **first**. A 6 star by design and it has recently achieved as built. Which not many buildings are likely to achieve as built, so it's the **first New South Wales 6 star as built**."* (Interviewee B5, Head of Office, 18.05.2010)

> *"So we're very proud to be the **first, specifically real estate company** to sign up to those [referring to the UN principles for responsible investment]."* (Interviewee C5, Sustainability Manager – Investment Management, 24.10.2010)

> *"...I assume you know that we are the Dow Jones Sustainability Index **sector leader** at the moment?"* (Interviewee B1, Head of Communities, 17.05.2010)

> *"[Our company] was one of the first, in fact **the first signatory to Australian greenhouse challenge** way back in 1997. So that is 13 years ago and **we're one of the first companies to adopt**, when SEDA launched its ABGR rating..."* (Interviewee B5, Head of Office, 05.18.2010)

Numerous other examples are also found in the companies' printed material including their websites, sustainability reports and annual reports, and an example is depicted below in Figure 6.3.

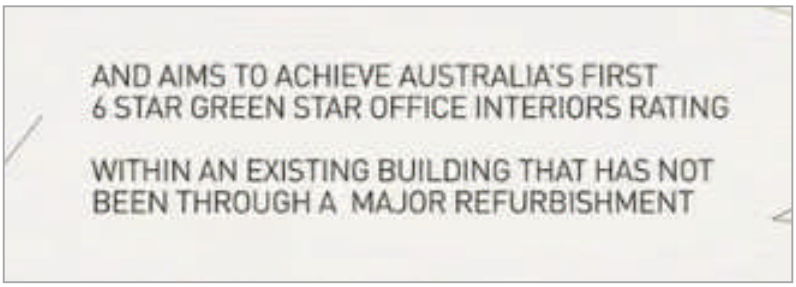


Figure 6.3: Sustainability leadership and Company B

Interviewee 3, in the first phase of the data collection, also noted this trend stating:

> *"I don't think that there is any sector that is more competitive around producing a green product than the property sector...**in Australia the property sector is just highly competitive around green building and you don't get that in other sectors**. The supermarkets here aren't really competing on a green premise."* (Interviewee 3, Research Analyst, 27.04.2010)

The companies are also using their experience on green building projects in their brand and marketing strategies to promote their reputation as a sustainability leader and secure clients as Interviewee C2 describes:

> *"[the construction part of the business] have for example just published a post occupancy analysis of the [another] building which is also a 6 star Green Star building. And they use that as part of their marketing and a way to actually secure clients. So they actually invest a lot of money in producing these sorts of things"* (Interviewee C2, Project Director, 25.11.2010)

When asked what value a reputation for sustainability was creating for their company most commonly the response was winning project tenders, being sought out by clients specifically for green projects and not being required to tender for the work and peer recognition in the form of awards. For example Interviewee C2 shared how the benefit of their previous green building experience was a key factor in a tenant's decision to pre-commit to occupying their newest green building development:

> *"For [the client] it was just important to find a partner that had delivered that [a sustainable building] before and that they had some comfort that they could place trust in us to deliver."* (Interviewee C2, Project Director, 25.11.2010)

And in another example Interviewee B4 shared how they were successful on a large retail development tender as well because of their experience in sustainability:

> *"[the client] had whole series of sustainability targets that they were after and we have understood since that all of their tenders were trying to negotiate those down, where we had been on that journey already for some years and we said look we can meet these targets and in fact some of them we can do better than, we have done better."* (Interviewee B4, Head of Development, 27.10.2010)

The companies' strategies to be the sector leader based on their sustainability reputation reflects the theoretical assumptions of the resource-base view of firms - which is that company's develop competitive strategies which rely on building and exploiting their internal resources and capabilities or intangibles/IC (Peteraf 1993; Barney et al. 2001). As the resource-based view of the firm underpins the intangibles/IC theory (See Chapter Two) this observation about competitive strategy is another indication that regardless of the balance sheets of these companies not reflecting the theoretical assumption for the ***phenomenon*** of intangibles, there is evidence that **they actively manage their intangibles to operationalise their strategic aims**. What is also evident is that the sustainability leaders are all competing to claim and retain the first mover advantage (Porter and van der Linde 1995) of their environmental competitive strategies, particularly as the sector as a whole shifts to catch up with them. This is a commonly stated limitation of the win-win approach to environmental management and eco-efficiency (Walley and Whitehead 1994a; Young and Tilley 2006). Other limitations of eco-efficiency that the case study companies have noticed are discussed further in Chapter Seven.

6.2.5 Human capital: the most important

A mentioned above people or human capital was identified as the most important intangible for all of the companies. In the intangibles/IC literature human capital is also said to be the most important intangible of companies (Brooking 1996; Stewart 1997; Edvinsson 2000; Fitz-enz 2000; Bontis and Fitz-enz 2002) as "people, not cash, buildings or equipment, are the critical differentiators of business enterprise" (Fitz-enz 2000: 1). The interview and questionnaire results presented in Chapter Five also indicated the importance of human capital as the primary factor in the success of companies in the sector (see section 5.3). Human capital is also seen as currently the most under-utilised intangible or, put in another way, the one with the most potential as Interviewee B1 explains:

> "*this one [pointing to human capital] has long exercised my mind...and I think it has never been more important. The biggest issue I think today is our organizational charts. I think they are locking us into yesterday's world and preventing people from working across the boundaries in the way in which they need to. I think we tap a fraction of the human capital available to us in our organizations today"* (Interviewee B1, Head of Communities, 17.05.2010).

Growing and developing the capabilities of staff is a key strategy that has been used by all of the companies in order to maximise the potential contribution of their staff to achieve the companies' sustainability strategies and is discussed further in Chapter Seven. However, there is still a general feeling, which was highlighted most often by Company B, that there is still a long way to go in order to fully unleash the innovation capacity of people. Traditional approaches to people management, particularly around performance targets and objectives, are seen as a key barrier to fostering innovation as the Head of People and Culture at Company B describes below:

> *"I think that for most people, the path of least resistance is to fall back in terms of just doing what's on my objectives. But there may not be anything really transformational about that. And there may not be anything that encourages you to get up off your desk and go and work with someone in a whole different part of the business on an idea that someone else in a different part of the business has had. So the next challenge for us is to get that to happen too."* (Interviewee B2, Head of People and Culture, 17.05.2010)

Dumay (2011) agrees with this critique arguing that managers have been "preoccupied" with identifying and measuring organisational and personal objectives even since Peter Drucker (1954) introduced the concept of management by objectives (MBO). The limitation of management by objectives is, as Behn (2003: 599) argues, that "what people measure often is not precisely what they want done". This is because the people responding to the "explicit or implicit incentives of the measurement will do what people are measuring, not what these people actually want done." Specific strategies that the companies are currently using to manage their people in order to implement their sustainability strategies and the limitations of the management by objectives approach are discussed in greater detail in Chapter Seven (see section 7.3).

6.2.6 Our culture: why we are sustainable

Company A, B and C all consistently highlighted that it is their organisational culture, values and founding principles which drive their competitive strategies to be the sustainability leader. Aspects of the organisational cultural that were said to be important were **innovation, entrepreneurship, risk taking, care, respect** and **trust.** Respondents in Company D also consistently highlighted the importance of their company culture towards achieving their competitive strategy, but rather than being a sustainability leader their aim is to be 'the contractor of choice'. **Trust, flexibility** and **fairness** were the most important aspects to be built into the company culture to achieve this.

At the moment having a company culture congruent with sustainability is seen to result in competitive advantage for the leaders. Interviewee B1 believes it is a better source of product differentiation and competitive advantage than any technology they might be able to put into one of their buildings.

> "*... sustainability ultimately, it is cultural...it is not about, or to a lesser extent about new technologies and so forth because I don't believe that that is a sustainable differentiator, the culture of an organization certainly is."* (Interviewee B1, Head of Communities, 17.05.2010)

A number of others agreed that their company culture is what differentiates them from their competitors and is a key reason why clients, employees and investors engage with them. It was also generally felt that the leadership team plays a key role in shaping and nurturing the company culture amongst the employees. The sustainability leaders also felt

that their company culture and values attracts people who share the same values about environmental and social sustainability. In Interviewee B4's words:

> *"...there's a bunch of people here and why aren't they working somewhere else? Because they believe this organization allows them to care. And that sounds very candy house but it is a little bit like that you know."* (Interviewee B4, Head of Development, 27.10.2010)

This finding agrees with the empirical work of Dahlgaard-Park (2012: 137) which found that when there is a "good match between the purpose of the organisation and the purpose of people" so that the organisation fulfils the "spiritual/ethical dimension" of the employees human needs, there will be increased commitment and other synergistic effects.

Respondents from Company A, B and C all claimed that their organisations were founded on the principles of sustainable development – and as such they have **ALWAYS** been a sustainable enterprise or at least driven by the principles of sustainable development. This claim is also mentioned in their various nonfinancial reports (website, CSR/Sustainability reports) as well as their Annual Reports, often by quoting the ethos of their founders (see Table 6.2 below).

Company	Ethos
A	[Our founder] founded [our company] in 1952 with a vision to "*not merely achieve growth and profits but to make a worthwhile contribution to the development of our cities and great country*"
B	[Our founder] recognised the community of interest that existed between shareholders, employees and management – and this became an enduring value in the group of companies he founded. He was an innovator and leader in labour management, business development and in business ethics and governance. He understood that entrepreneurs should leave a substantial legacy for shareholders, employees and society. [Our company's] strategy builds on the [our founder's] legacy.
C	*"Companies must start justifying their worth to society, with greater emphasis placed on environmental and social impact rather than straight economics*." Founder of [Company C]. 1973.

Table 6.2: Summary of Founding Principles

However, many models of sustainable enterprise such as that of Tilley and Young (2009) would argue that the current business models of these organisations do not reflect that of a sustainable enterprise. According to Dunphy et al.'s (2007) phases of corporate sustainability they currently exemplify strong signs of the efficiency stage of corporate sustainability and signs of the strategically proactive stage.

Across all four case study companies there is a belief that 'sustainability' will eventually become a culture adopted by the entire sector. The adoption of a culture of 'safety' in the

1980s and 90s was given by almost all the respondents as an example that they see corporate sustainability inevitably following. A few interview respondents in Phase One of the data collection also shared this view (Interviewee 6 and 7a). Initially there was a general resistance to a cultural shift towards a culture of safety. However, there were some first movers and eventually the rest of the sector followed. Safety has become business as usual – that is no one will claim to be 'unsafe'. Interviewee B4 explained that the same thing will happen with sustainable development - it will become the default position of business.

> *"...you find the whole safety in construction is part of the same sustainability thing. And that's where ultimately all of this will end up if it hasn't already, in an ethical position. Because it is all heading towards an ethical position to the point where...the ethical funds as an expression will probably disappear in the future as everybody will be, nobody's going to be claiming a non-ethical position by default."* (Interviewee B4, Head of Development, 27.10.2010)

An argument could be made that there is a big gap between claiming to take a sustainable approach as a default position and actual implementation and performance. However, the belief amongst the respondents is that some level of corporate sustainability, most likely eco-efficiency, will become the new business as usual. For the sustainability leaders (Company A, B and C) they claim eco-efficiency to be their current business as usual. Interviewee A2 further added that the more *'business as usual'* TBL sustainability becomes, similar to safety, people will focus less on the 'cost' of being sustainable and just expect it to be part of how the company operates. Using the example of airbags in cars she stated:

> *"...10 years ago if you bought a car ... it wasn't the norm to have airbags ... so you would have to pay extra to get an airbag installed ... whereas now if you buy a car and you don't have airbags in it you start to wonder, you just assume that it's got the safety mechanisms built into it and you don't look for an extra cost around safety...I think people are taking that same mindset around how businesses are run, you just expect that sustainability is built-in. It's not a line item anymore. There is a mindset that is integrated…it simply should be informing everything which you do…it shouldn't be this kind of separated bolt on element ...So I think to me it is a real sign of maturity, of moving from that bolt on to integration."* (Interviewee A2, General Manager CSR, 06.10.2010)

Changing the culture of the entire sector will not happen without resistance, as there is still some resistance when it comes to the safety culture. Sustainability, Interviewee D2 argued, unlike safety does not have the same immediate personal rewards and therefore a cultural shift in attitude and behaviour may prove to be harder. He argues that with sustainability *"we aren't talking about people's lives"* in the same way as you are with safety and you still get people on a job site without proper safety equipment saying *"oh but I was only just leaning out."* Interviewee D2 explained that often people do not like change just *"because it is change"* and so have got to see some value in adopting the change. People's attitude

to change can also be affected by the segment of the market they have experience in and the culture that comes with it. He stated:

> *"...if you've always been in this kind of second tier game [i.e. not the first movers or market leaders] coming in, people really struggle with the change and fight it..."* (Interviewee D2, Project Manager, 19.10.2010)

Accepting change or resistance to change was highlighted as a key issue in Company D, specifically in relation to site-based staff. Company A, B and C have undertaken a number of strategies, including training programs and personal accountability measures, to help engender a culture of sustainability in the people within their organisations as well as strategies to help make changes to the culture of the sector at large. These are discussed in greater detail in Chapter Seven. The next section (6.3) of this Chapter will discuss the key themes identified around the measurement and valuation of intangibles in the four case study companies.

6.3 Measuring/valuing intangibles

This section outlines some of the key themes identified on how the companies measure and value their intangibles.

6.3.1 Measuring intangibles – it's a lot more than just monkey business!

> *"It's funny we have an insatiable need to measure everything don't we? I suppose that's what makes us different from the monkeys swinging in the trees."* (Interviewee D5, Construction Manager, 19.10.2010)

Often when the accounting-based rationale for the study of intangibles was explained to the interviewees – that is the difference between a companies' market value and its book value – it caused confusion about its relevance to the sector and in one case a quite hostile reaction to the merit of this research and the topic of inquiry. This theoretical rationale for the measurement of intangibles clearly is not an appropriate approach for this sector at the time of this data collection particularly as the listed case study companies are currently trading at a discount to their net tangible assets (NTA) – which is a complete opposite of what is expected in theory. This is mainly is as a result of the GFC, where many listed property firms were forced to write down the accounting value of their intangible assets (Brand Finance 2008) in many cases as a result of the sale of assets to raise capital and improve their debt ratings (Psaltis and Moretti 2010; Verrender 2011). Dumay (2009a: 192) argues that the market-to-book value approach to measuring intangibles is a too "simplistic framework" particularly as share prices fluctuate on a continual basis and Company A, B and C's market position at the time of the data collection supports this argument. This also supports Mouritsen's (2006: 824) position that what the majority of intangibles/IC literature posits - that intangibles consist of human, relational and structural capital each of

which has “functional qualities and are thus value generating assets not visible in the firm’s balance sheet” with “descriptive qualities” and where “measurement is essential” – is an outdated research agenda. The more transformative approach to investigating intangibles is less concerned with testing how the various intangibles/IC elements contribute to or can predict financial value but rather how organisations mobilise their intangibles “towards transforming organisational behaviour" (Ibid 2006: 8) where measurement is a convention governed by its own set of institutional rules. Indeed while many of the respondents questioned whether it was possible, necessary or constructive to ascribe a financial value to intangibles to improve the company accounting practices, all of the companies in some form or another are currently measuring and developing indicators to better understand their intangibles.

In general the main drivers for measuring intangibles were congruent with those outlined by Marr (2007) and others (see section 2.7) which include reporting and compliance, directing and controlling business behaviour and strategic decision-making and organisational learning. In relation to implementing sustainability-driven practices a key driver for measuring intangibles was also to improve the BCS, however, as will be discussed below the sustainability leaders are seeing the requirement to directly link intangible value creation to corporate financial performance drop away. Pressure from external stakeholders, such as the investment community, for more transparency in their financial reporting has also been an influential driver for the increased measurement of intangibles as Interviewee C3 explains:

> *“...four years ago when our quarterly results were published to our investors...it was purely financial. To look at our quarterly results we give our investors now, we cover everything from not only what I'd call standard sustainability metrics but we now cover a whole other range of things...if there have been any incidents on any assets we own and on the general public. So the sort of stuff that historically doesn't come to people's mind in a normal economic sense...”* (Interviewee C3, General Manager – Leasing and Development, 24.10.2010)

Intangibles performance indicators are also seen as leading indicators and give a better indication of the company’s ability to continue to be successful in the longer term whereas traditional financial reporting measures are seen as lagging indicators of the company’s financial performance (Dumay 2008). These measures are still necessary to demonstrate that the company has a strong balance sheet, but they do not give the whole story of the company performance (see section 2.7.5). For Company D there is little push to measure and report information externally on their intangibles in a similar way to the other companies, however, they are facing increased requests for information on metrics relating to the performance of their intangibles, such as their environmental management systems, when replying to project tenders. Interviewee D3 explains that:

> *"... back in the good old days it was you gave them a price, you said yes I can build that building for one million dollars and I can build it in one year's time. Now you still provide that information, but that's really not what they're looking for. They want to know about your views on the environment and sustainability, OHS, safety...Yes I know it's going to cost me a million dollars and I know you're going to build it in a year's time, but what I really want to know is how are you going to deal with your waste management... what's your lost time injuries ratio and what's your work cover premium as a result and all this sort of stuff.* (Interviewee D3, Project Manager, 19.10.2010)

For Company A, B and C the externally developed reporting frameworks for the GRI G3, Carbon Disclosure Project (CDP), FTSE4Good and Dow Jones Sustainability Index (DJSI) have all been influential in how these companies measure their intangibles. These frameworks have informed the methodologies and indicators that they use and determine what will and will not be reported on. Barkemeyer et al. (2011: 5) also noted that the Global Reporting Initiative (GRI) has emerged as the "dominant set of guidelines", not necessarily for measuring intangibles, but rather as one of the key ways that the business sector has operationalised sustainable development into practice (i.e. TBL reporting).

6.3.2 It is time to let the monkeys loose!

Respondents from Company A, B and C also noted that they take seriously the value of their intangibles and are constantly working to develop better data sets and metrics to track their performance. A common trait amongst them all however is that even in the face of uncertainty and concrete data – particularly in relation to supporting a traditional business case and linkages to financial performance - they still see the importance of being an early mover and are prepared to act before the necessarily have all the answers. A recent global study by Sloan (2011) on innovation and sustainability also found this to be a key trait of sustainability embracers.

However, often when asked interviewees where asked about the value of their organisation's intangibles – the response was to clarify what the researcher meant by value. This question was always turned back on the respondents to instead ask them what they would identify as the value, rather than the researcher determining or defining the it for them. Often it was financial value such as return on investment (not simple payback) but for the sustainability leaders the return or payback was often directly nonfinancial and/or indirectly financial. As outlined earlier in this Chapter terms such as business value and value add were referred to (see section 6.2.2).

6.3.3 The business case for sustainability

The BCS lays out the rationale for why a company should adopt a sustainable approach and typically presents the costs and benefits of doing so (Wasiluk and Horne 2009). However as discussed in Chapter Two (section 2.4.5) identifying the benefits often proves to be difficult as the value created accrues to the company's intangibles – and as discussed above

measuring the financial value of intangibles is constrained by traditional accounting practices (see section 6.3.1) and institutional practices around company and building valuation which exist in this sector.

The key problem this presents for the BCS is the pressure to monetarise the paybacks of taking a sustainable approach to managers, decision makers and clients. Smith and Sharicz (2011: 74) agree adding that while it has become "very fashionable" in a business context to take the position that companies should consider their financial bottom line and the ecological and social implications of its activities, the reality is that the "economic bottom line still dominates corporate decision-making." Most respondents highlighted that there is a real tension between proving the financial value or payback of sustainability and the so-called "leap of faith" (Interviewee B1) needed for transformational change and innovation. For examples, the mantra at Company B according to Interviewee B2 is *"the two words that kill innovation are prove it"* and often when people bring new or innovative ideas to the board they are asked to do just that. However, in the past five years or so the sustainability leaders have noticed a general shift internally in the push to monetarise the potential added value linked to their intangibles a result of taking a sustainable approach. For example Interviewee A2 stated:

> *"I think it would be fair to say that there was more interest in understanding the financial value...underpinning the business case, 5 to 6 years ago. Now the business is actually much, much, more relaxed and less interested in trying to quantify the value. Intuitively the business kind of talks about it is the right thing to do. ... We don't have to justify the actions that we undertake in sustainability in terms of what value it delivers the business anymore. That mindset has really, or that requirement to do that, has actually dropped away because intuitively people know ultimately it makes their jobs easier to do...people aren't trying to kind of do the sums on it anymore."* (Interviewee A2, General Manager CSR, 06.10.2010)

According to Dunphy et al. (2007: 24-25) this transition in mindset surrounding financial valuation, or what Dumay, Guthrie and Farneti (2010) term the '*accountingisation*' of intangibles, is representative of the difference between a company in the "efficiency" phase of corporate sustainability and one which has progressed to the "strategic proactivity" phase. Companies in the strategic proactivity stage are less focused on the cost-benefit of proposed sustainability initiatives and view sustainability more as a way to demonstrate competitive leadership, achieve the company strategy and drive innovation in their products and services – all things that the companies indicated their intangibles play a key role in achieving (see section 6.2.2). This is why, particularly for the sustainability leaders, the BCS has, as Interviewee 2 in Phase One of the data collection put it, "*been turned on its head*" and that those who are still asking "what's the payback" are not really just "*looking for an excuse not to do it* [sustainability]." While company A, B, and C all exhibit key characteristics of Dunphy et al.'s (2007) strategic proactivity phase of corporate sustainability their business case is also still very much tied to risk and risk management.

According to Dunphy et al.'s (2007) phase model this is more characteristic of companies in the pre-efficiency or compliance phase. This is discussed in further detail below in section 6.3.4.

Respondents at Company A, B and C all noted that there has been a noticeable shift, particularly in the commercial building market, in clients' requirements for sustainability related performance criteria in the spaces they develop, own, occupy and invest in which is also driving the change in attitude to the BCS in the sector. Tenants in particular are starting to see value in the reputational benefits associated with occupying a green building. The reputational benefit might be linked to their corporate identity as a corporate sustainability leader or a risk based strategy to protect their image. For example, it was a tenant's desire to be associated with innovation and sustainability, which directly reflected their corporate identity, which led them to occupy a high profile green building by Company C, according to Interviewee C2. Interviewee C3 agreed adding:

> *"...the tenant that took up 70% of the building was looking at us or a building across the road and they came to us because we were able to give them the environmental credentials they wanted. And they were about to sign a major contract with the Victorian government and they ended up having the Premier come and open their office and they couldn't get that across the road."* (Interviewee C3, General Manager Leasing and Development, 24.10.2010)

However respondents also highlighted that a number of barriers still exist when dealing with companies who still sit somewhere between the compliance and efficiency phase of corporate sustainability as they are still very focused on financial returns, calculated in a traditional way, of taking a beyond compliance approach to sustainability. Examples of strategies to deal with barriers in their business relationships are found in Chapter Seven.

6.3.4 Barriers with the laggards: The risk based business case

The sustainability leaders all noted that they need to find ways to push change in the wider property and construction sector as it can lead to barriers in their own progress and implementation of further stages of corporate sustainability. For example, the BCS for the majority of the sector is still largely driven by risk management rather than value add or longer term wealth creation. The prominence of the risk-based BCS in this sector is very much in keeping with what has already been documented in previous studies in the UK and Europe (see Lutzkendorf and Lorenz 2007; Sayce et al. 2007) as well as recent Australian studies such as Prior and Faria (2010). According to Interviewee C1 it has shifted from a reputational first mover rationale to a risk-based rationale, he stated:

> *"...the main driver for all of the client's projects I worked on was that point of difference so they could leverage off that to attract tenants. It was mainly around marketing and reputation and that kind of thing. Good corporate citizen. And so it was very much a project here and a project there. And I think it's moved to a lot of clients are now doing it because they feel that if they don't then they are taking on*

> *risk in the future because their building will stand out because it's not a green building. So it will become redundant or obsolete more quickly and they will require a bit of investment later on to bring it up to what the market standard is... It's probably for what a lot of people call the future-proofing type approach."* (Interviewee C1, Business Development Manager, 25.11.2010)

Interviewee C5 agreed and described how they currently make their "*value for money*" argument in their business cases for efficiency upgrades. They do not present the benefits as increasing the value of a property or its rental returns but rather the avoidance of obsolescence and devaluation of the property. He stated:

> *"...if we're going to spend 5 million dollars upgrading the building to 4 ½ star then we will need to get that signed off by the Board of Directors that represent the investors. And we have to basically demonstrate that there is value for money. So it's either* ***protecting the value of the asset****, it's enabling us to get a long term tenant. Whatever we do we have to demonstrate that there's value in it. And I think a lot of this stuff is going to be leading to the* ***avoidance of obsolescence****. So* ***we might not be increasing*** *the value of the building, but we'll* ***protect ourselves against devaluation*** *basically [because]...if you've got a 2 star building then you've got a reduced pool of tenants that can go into it, which means reduced demand which reduces obviously the value of the building."* (Interviewee C5, Sustainability Manager Investment Management, 24.11.2010)

Company D which works with smaller or single building owners sees a real limitation in the market as these owners are not driven to improve their brand, reputation or other intangibles in the same vein as the larger property investment trusts. However the risk of obsolesce is very real even for small/single building owners as Interviewee D2 explained the thought process of these owners:

> "*So what am I going to do with my assets? If I leave it too long and things get going it's going to devalue itself because the new purchaser to the market is going to say, it's like asbestos, do you know how much this is going to cost me or it's like contaminated soil. They will be seen as don't touch it, it's too expensive to fix. And businesses may say, you know what it's not going to get cheaper it's going to get worse as I go along do I bite the bullet now and it's a big investment we've got here in this building. Do I go and spend three or four million trying to upgrade it to get a better Green Star rating on it? Or do I not? Do I try and sell it? But the seller is going to devalue it because mate do you know how much I've got to spend on this building just before anybody would move into it?"* (Interviewee D2, Project Manager, 19.10.2010)

Company D do however see huge opportunities for them as a building contractor in this segment of the existing building market to help clients improve the performance of their buildings with the least amount of capital investment. There is also a growing body of evidence which shows that investment in training and development of building managers (human capital) can significantly improve the energy efficiency of an existing building without any capital expenditure on plant or equipment (National Project Consultants and Exergy Australia 2009). Regardless the decision making, particularly at the building or project level, is still primarily influenced by financial information including how much

money it will take to upgrade a specific building and whether the building owner actually has the capital available to do it.

6.3.5 To monetarise or not to monetarise, that is the question.

A key challenge facing the companies is the development of meaningful and relevant indicators for their intangibles. This does not necessarily mean financial metrics, nor does it mean that the indicators have to be directly linked to the financial performance of the company. What is important is about the development of metrics for intangibles, as Interviewee A2 puts it, is *"to make the intangible more tangible."* Interviewee A1 agreed and further added

> *"... I think now we've seen the value of that [pointing to intangibles/IC diagram] so it is not so intangible now. I guess it's intangible when you're making decisions on whether or not you should tip time and resources into something, because are we going to get a return from this investment. If we employ people in these roles are we going to get something back for that? ...I think that once you get over that mental hurdle you've already identified the value so it is not intangible anymore. I guess once you've got those resources and those things in place then you have got to* ***identify what are the metrics you are going to use*** *to measure the successes of this so that it remains tangible."* (Interviewee A1, National Environment Manager, 19.05.2010)

Even without metrics many respondents felt that just the fact that conversations were happening around intangibles and how they are linked to value creation is an indication that there has been progress in the right direction towards more sustainability-driven business models. Interviewee C3 clearly states this below:

> *"...we're seeing a much better discussion in the community about all these things that have never been discussed. So you may not be able to put a whole set of metrics around it but we certainly see the conversation that has not been seen...[sustainability] I think it has taken a lot of people who deal purely with maths and financials and it made them think wider and I can tell you numerous people I deal with who as number one would've simply looked at something as the transaction and say show me what the dollars look like...[now] there's much more open, a much more worldly approach I suppose to the consideration of any decision that's being made. And five years ago it wouldn't happen. Five years ago people would've said send me through a summary of the numbers and we'll choose the best number we can find."* (Interviewee C3, General Manager – Leasing and Development, 24.10.2010)

This shift, again, shows progress in the sustainability leaders beyond the compliance and efficiency stages of corporate sustainability - which focus on cost and financial payback (Dunphy et al. 2007). However, as mentioned above there is still a real tension between TBL corporate sustainability and the financial bottom line. The observation is that in practice companies can occupy different stages of corporate sustainability at the same time.

6.4 Reporting

The reporting of intangibles/IC was primarily discussed in relation to corporate sustainability reporting. As previously discussed the intangibles of the case study firms are not primarily reported in traditional financial accounting sense. This is a common finding amongst other studies in the literature and not unique to the sector (Guthrie et al. 1999; Sujan and Abeysekera 2007; Wyatt and Frick 2010). None of the firms have undertaken the creation of IC reports to address this gap in their financial reporting, as has been done by other organisations in the empirical literature (for example Dumay and Guthrie 2007; Sujan and Abeysekera 2007; Striukova et al. 2008; Dumay and Rooney 2011)

The phase one data results indicated that many respondents felt that traditional financial reporting lacks all of the relevant information for external and internal stakeholders to understand the current and future performance of a company. This information gap was identified as especially relevant to the case study firms A, B and C as their investment communities and other stakeholders are increasingly seeking this type non financial information from them. Table 6.3 provides a summary of the key categories of non financial information that the firms were disclosing for the 2010 financial year. The table illustrates that they are disclosing information in relation to all of the categories of intangibles/IC in their voluntary sustainability reporting.

From an internal perspective, the firms are reporting on their intangibles/IC in order to track their progress on their sustainability strategies and also for use in internal decision-making and learning, primarily at the level of the corporate or board level. Reporting in relation to implementing sustainable development into the firms' business models is discussed in Chapter Seven.

		HUMAN CAPITAL	STRUCTURAL CAPITAL		RELATIONAL CAPITAL		
ALLEE (2000)		HUMAN COMPETENCE	INTERNAL SYSTEMS	CORPORATE IDENTITY	BUSINESS RELATIONSHIPS	SOCIAL CITIZENSHIP	ENVIRONMENTAL HEALTH
Case Study Company	A	**Our people** *–Employee engagement* *–Learning and development** *–Employee metrics**	**Our approach** *–Reporting approach** *–CR&S strategy** *–Stakeholder engagement* *–Governance**	**About Company A** *–Company overview* *–History* *–Directors and executives* *–Awards and achievements* *–Values**	**Our marketplace** *–customers* *–suppliers* *– investors* *– industry and government*	**Our community*** *–Community development* *–Community involvement*	**Climate and our environment*** *–Climate change and energy** *–natural environment*
	B	**Our People** *–Board* *–Leadership team** *–Attracting & retaining talent** *–Learning & development** *–Diversity*	**Health, Wellbeing & Safety*** **Risk Management*** **Corporate Governance***	**About Company B** *–Strategy & Values** *–Board of Directors* *–Leadership team*	**Our customers** **Our suppliers**	**Community Engagement & Development***	**Our Environment** *–Climate change & energy** *–Waste & resource mgmt* *–Water** *–Biodiversity**
	C	**Our People** *–Measuring employee engagement* *–Building on the diversity of our people** *–Growing & retaining out talented people** *–Attracting young talent**	**Smarter Systems** *–Improving business processes* *–Automated interfaces* *–Improving analysis* *–Reporting and performance indicators** *–Communication and knowledge sharing* **Health & Safety***	**Detail** *–Governance** *–The Board* *–Core Values** *–Sustainability Aspirations* **Adding Up** *–Commitment and purpose*	**Our Influence** *–Supply chain initiatives* **Advocacy** *–ENGO partnerships* *–Government advocacy* *–Government partnerships*	**Our contribution**	**Environment**

Table 6.3: Categories of Nonfinancial Performance Reporting[11] *Denotes similar category found in GRI Construction & Real Estate Sector Supplement (CRESS)

[11] Company D was excluded from the above table as it does not undertake any public nonfinancial reporting

6.5 Summary

The first part of this Chapter summarised the key observations and themes from across the four case study companies with regards to the challenges of identifying and defining intangibles in practice. Intangibles have been identified as the nonfinancial resources of companies that are material to its continued success and have business value for the company. Intangibles are also believed to be a key source of competitive advantage for the companies and what differentiates them from their competitors. The more accounting-based theoretical assumptions of intangibles were less relevant and appropriate than the critical management-based intangibles/IC literature to theorise how intangibles are identified and relevant to the case study companies. However, the concept of 'materiality', which stems from traditional financial reporting, has been somewhat influential in how the companies, except Company D, identify their relevant intangibles.

Similar to the results presented in Chapter Five the intangibles/IC taxonomy was still found to be a useful and relevant framework to help respondents identify and discuss their companies' intangibles. Respondents most commonly identified people, reputation and company culture as their key intangibles however respondents at the three sustainability leaders also included environmental and social performance when identifying their firms' intangibles. Hence, Allee's (2000) taxonomy better reflects the composition of intangibles in a sustainable business model. Community engagement, or social citizenship as Allee calls it, was also identified as a key area where companies need to improve their performance and human capital was seen as the intangible with the most untapped potential. The second part of this Chapter summarised the key observations and themes from across the four case study companies with regards to the challenges of measuring/valuing intangibles and current practices for reporting. Intangibles do not necessarily have a financial value, in and of themselves, rather their value is often defined through their alignment with company strategy, risk and the ability to accomplish a desired outcome – which is reflective of the ***practice*** based approach to intangibles/IC.

The next Chapter will discuss how Company A, B and C are managing their intangibles in order to operationalise sustainable development into their business model. Company D has been used to compare and contrast the experience of three other case studies. As Allee's (2000) categories of intangibles/IC have been identified as more representative of a sustainable business model these will form the basis of the data analysis and discussion in Chapter Seven. Her categories include business relationships, internal structures, human competence, social citizenship, environmental health and corporate identity (see Figure 6.2).

"You may never know what results come from your action, but if you do nothing, there will be no result"

Ghandi

7 Intangibles in Practice: Operationalising Sustainability

Chapter Seven is the final chapter in a series of three which have presented the results and analysis of the data collected within this thesis. Chapter Seven investigates the ***practice*** of intangibles/IC in the case study firms in order to understand how they have operationalised sustainable development into their business models. The ***practice*** based approach to intangibles/IC posits that managing firms' intangibles is about "orientating" their intangibles "towards a purpose" (Mouritsen 2004: 262). For Company A, B and C this purpose is to be a leader in corporate sustainability. The main source of data for this Chapter is the semi-structured interviews conducted with employees at the case study companies, supported by additional evidence from document review of Annual Reports, CSR/Sustainability Reports and the company web pages.

The aim of this Chapter is to provide examples of how Company A, B and C are managing intangibles/IC to operationalise corporate sustainability practices into the various strategic levels of their organisation. For example, it looks at both corporate level as well as project level strategies. In doing so it is possible to put the different elements of the companies' approaches together to create a clearer picture, developed in a systematic way, of what is going on. Company D has been used to compare and contrast, where relevant, the experiences of the other three case study companies. This Chapter provides the empirical data which helps to answer research question number three (RQ3).

7.1 Putting the strategy into motion

As outlined in Chapter Two, the RBV is "one of the most influential and cited theories in the history of management theorising" (Kraaijenbrink et al. 2010: 350). While there are both critics and champions of the RBV (for a detailed review see Kraaijenbrink et al. 2010), Kaplan and Norton (2004b: 10) argue that when a firm is formulating and executing its business strategies – i.e. how it intends to compete in the market - they must "explicitly address" the "mobilisation and alignment" of their intangible resources.

As outlined in Chapter Six (see section 6.1) the companies' approach to embedding sustainable development into their business model started by putting the necessary internal resources (governance and reporting structures) and human resources in place. They also identified how their corporate identity and company strategy were linked to the

sustainable development strategy. This linking of corporate identity, company strategy and sustainability strategy at the governance level, Smith and Sharicz (2011: 81) argue, is crucial to creating positive reinforcing cycles to support the shift required in an organisation's business model to operationalise sustainable development. This was previously illustrated in Chapter Two (see Figure 2.10 and Figure 2.11). Common approaches taken across the companies to mobilise their intangibles/IC included:

- Establishment of board level and staff level sustainability committees;
- Appointment of corporate level sustainability managers; and
- Commitments to public disclosure of their TBL performance (through GRI reporting and NABERS energy ratings).

The 2010 Sustainability & Innovation Global Executive Study and Research Project identified all of these actions to be common practices adopted by companies who are sustainability embracers (MIT Sloan and Boston Consulting Group 2011). Azapagic (2003) agrees with Smith and Sharicz (2011) that these actions are vital to embedding sustainability practices into the business model as they not only support the implementation but also signal the board's commitment to the company corporate sustainability agenda. Board endorsement does not guarantee that the strategy will be successfully implemented but the absence of such commitment makes it more difficult (Azapagic 2003). Interviewee B1 and A2 both agreed that having the board on-side was key to their organisation's successes in embedding sustainable development into their business model. For Company A, having board level support for sustainability has been instrumental, not only to initially embed new sustainability practices in the business, but also to support further evolution and change throughout all levels of the company. Interviewee A2 stated:

> *"...there is no one way of doing these sorts of things but certainly **getting executive and board endorsement** will always help. Certainly our sustainability strategy, which we then rolled out into specific strategies for each business unit, gets reviewed and signed off at the board every year. So a lot of what we do, we do take up, get that signed off, kind of sponsorship if you like from the board and executive…You can't underestimate the value of that. "*(Interviewee A2, General Manager CSR, 06.10.2010)

While it is the position of this thesis that organisations need to embed sustainable development into all of the intangibles/IC categories, the results from the case study firms have shown that the governance structure is vital to supporting successful implementation of sustainable development with the business model. Leadership and governance structures are discussed further later in this Chapter. Without proper governance structures, actions or strategies that the firm tries to introduce can struggle to succeed. An example of this from Company D is discussed later in section 7.7.1. The next section discusses in further detail the implementation of the corporate sustainability strategies and the rationale for an initial focus on eco-efficiency.

7.2 Eco-efficiency: an easy place to start

The sustainability leaders all tended to focus on improving their environmental performance or eco-efficiency when operationalising their sustainability strategies. The social aspect of TBL sustainability is still poorly understood by the case study firms and they openly admit that this is an area where the most work is required and where their efforts are currently focused. This is discussed further in section 7.8. This finding is not beyond what has been found previously as both Dempsey et al. (2011) and Cuthill (2010) highlight that the social dimension of sustainability has been less conceptually developed generally in business but also specifically in the context of the built environment. Ameer and Othman's (2012: 73) study of the global top 100 sustainable companies (listed on www.global100.org) also found that all the companies "put more emphasis on the eco-centric issues" than on the social aspects of sustainability. Interviewee B5 attributed this to a number of factors, however, a primary one being that the financial benefits of eco-efficiency initiatives, such as energy or water efficiency, are realised in the shorter-term in the form of reduced operating costs. This observation fits with arguments in the existing literature that eco-efficiency measures have an easier to argue 'win-win' business case (see Chapter Two). Other factors identified by the interviewees included the availability of rating tools for measuring eco-efficiency and the identification of energy use as a major factor in the unsustainability of the built environment. Interviewee B4 also added that there is more risk involved with implementing strategies relating to the social aspect of TBL sustainability. This is another reason why they were not tackled first or as aggressively as environmental performance. He stated:

> *"...the social one is even harder actually because you can dabble in environmental stuff and try things and effectively all you have done is wasted your own capital. So if we go out, say we put a [co-generation] plant in and it is not as efficient as we think it's going to be then we have just wasted money. But if you go out and start dabbling in what you think are good social initiatives and you get that wrong or you don't stay the course that is inappropriate. Because you have left that community worse off than if you hadn't been there."* (Interviewee B4, Head of Development, Oct 27, 2010)

Interviewee A1 also agreed that eco-efficiency initiatives were an easier place to start due to the ease of measuring their impact, established indicators for tracking performance and the ability to link environmental and financial performance. However, he continued that once companies are able to grasp eco-efficiency they should become more willing to expand their thinking in other areas where it is more difficult to measure performance and/or prove short-term financial paybacks. He stated:

> *"I think traditionally the things that we focused on are some of the things that are easily measurable. So you know the environmental initiatives and I think that is a logical place to start. And I think once you nail the easy things and the things that are more readily quantifiable and you start to really embrace it and understand it,*

> *then you start to look for, ok, what are some of the things that are intangible but we know either intuitively or from other examples, that we know these things have value and we're interested to see where the value lies for us."* (Interviewee A1, National Environment Manager, May 19, 2010)

At the time of the data collection Company A, B and C had achieved globally-recognised progress towards eco-efficiency, particularly in relation to their environmental management practices. In fact, the commercial segment of the Australian sector was highlighted in the Maastricht University study in 2010 as the world leader (Kok et al. 2010). An interviewee in the first phase of data collection highlighted this was primarily because his firm *"**can measure [their] water and energy use**"* (Interviewee 2). Although eco-efficiency is often critiqued as not being a significant enough achievement towards sustainable development (Young and Tilley 2006), the achievement of the sustainability leaders and wider Australian commercial building sector towards eco-efficiency, when taken in a global perspective, should not be understated. Interviewee B5 agreed adding that there is a gross underestimation by many stakeholders, including competitor firms, tenants, and regulatory bodies, about the amount of infrastructure, human monitoring and data analysis required to achieve building energy ratings and improve the building's performance. Using their corporate headquarters building as an example he explained the nature of the building, which includes office space, retail space and parking space, and the time and effort it took to get reliable data to use in decision making for building upgrades.

> *"A good example is this building here....it took a good part **of three years to put all the monitoring and metering into this building before we could get robust energy results** out of this building…trying to actually meter everything and work out where our energy balance was took a long long time before you can then start getting reliable [energy rating] data."* (Interviewee B5, Head of Office, 18.05.2010)

Reinforcing the Maastricht University study and the interviewee's view that the ability to actually measure performance has made the Australian sector global leaders is Jones et al.'s (2009: 530) study of UK property investment firms. Jones et al. (2009) found that many of the annual environmental and social performance targets reported by the companies included in their study were at best "aspirational" and "only limited reference" to actual performance existed. This was partly attributed to the difficulty the companies encountered when trying to actually measure and benchmark performance. For example, measuring the energy use of their buildings proved difficult due to lack of data and lack of cooperation from building owners.

As mentioned above, and in Chapter One and Two, it is the position of this thesis that firms need to mobilise and manage all of their intangible resources in order to operationalise sustainable development into practice. Chapter Five and Six concluded that the intangibles/IC taxonomy provides a helpful framework for the identification of intangibles in property and construction firms. Allee's (2000) taxonomy has been identified as more

representative of the intangibles in the case study sector firms and as a result has been used to structure the discussion and analysis of the results for in Chapter Seven (see Figure 7.1).

Figure 7.1: Intangibles/IC taxonomy, based upon Allee (2000)

Sections 7.3 to 7.8 of this Chapter discuss each category of the intangibles/IC taxonomy and the common themes which emerged in the case study data relating to operationalising sustainable development. At the time of the data collection most of their efforts have been directed at achieving eco-efficiency.

7.3 Human competence

As discussed in Chapters Five and Six people have consistently been identified as the most important intangible resource for property and construction sector firms. Human competence or people play a primary role in implementing sustainable development into practice. The following subsections outline some of the key themes in relation to this category of intangibles/IC from the case study companies.

7.3.1 Change agents: The sustainability team

Employing dedicated sustainability staff, management personnel or sustainability teams is a common strategy at Company A, B and C. It was also mentioned by a number of interviewees that the role these teams and/or individuals played in the organisation was vital in the initial and ongoing process of embedding sustainability into their organisation. As mentioned in Chapter Two, the Australian sector is unique in that the majority of its large corporate property firms (listed and unlisted) employ a sustainability manager (Kok et

al. 2010). Large listed firms which focus primarily on construction have been slower to have dedicated sustainability managers. Company D, who is a smaller private firm, indicated that they do not have the resources to employ a separate person as a sustainability manager, which could be a similar barrier for a number of SMEs in the sector.

The sustainability employees often sees themselves as 'change managers' in the organisation and not necessarily as the people who undertake the sustainability actions of the company's day-to-day business activities. Their ultimate aim is to make TBL sustainability a part of the day-to-day activities of all the staff in the organization. Interviewee A2 described that the roles of the sustainability staff are to identify issues, develop the processes and procedures (internal resources) and then identify the part of the business (human competence) that is best suited to the task and help them take ownership of it.

> *"…[the sustainability team] might identify some new issues each year and so that is where my team comes together and says right ok we need to address this issue, let's build a process for the business to actually understand it, we might develop some metrics around it, but ultimately we hope that some elements of the business or people within the business will step forward to actually own that and then we can basically embed it into the business and then go and find the next set of issues."* (Interviewee A2, General Manager CSR, 06.10.2010)

A specific example of a business unit beginning to "own" a specific sustainability issue at Company A is discussed in section 7.4.2. The response was similar at Company B and C with regards to the role of the sustainability team as organisational change agents. Interviewee C4 agreed with the concept of sustainability staff "change agents" or "change champions", but felt that there was a bigger industry shift in this area and not just with the sustainability leaders. Change managers are the new human by-product of some of the pioneering sustainable building projects in Australia. She remarked that:

> *"...there's off shoots that are industry changes, not all are just necessarily business changes. So change management really came to the forefront in Australia...[back in 2004-05 after one of the first green building projects]...it wasn't highly recognised or celebrated* ***but now everybody talks about being a change agent.*** *You* ***know it's as common as project management is****. It's interesting how these projects effectively change the industry"* (Interviewee C4, General Manager, 19.10.2010)

Another interesting observation about the sustainability staffing is that despite overall staff numbers being reduced, primarily as a result of the GFC, both Company A and B have increased their staffing numbers in sustainability roles in 2010. They have both appointed more business unit specific sustainability managers as well as creating new roles around community development and engagement. The new roles around community development in both Company A and B are directly linked to their identification of social citizenship as their next big TBL sustainability-related issue to address. This is discussed further in section 7.8.

Dumay (2009a) and Mouritsen (2006) both argue that a key critique of the intangibles/IC management rhetoric is that it does not follow its own theory – that is people or human capital often claimed to be the most important intangible of a company and key to its success but during a financial downturn companies do not tend to hire staff – they downsize. At the time of the data collection, however, Company A and B appear to be doing the opposite of what would normally be expected during a downturn as they are investing more in sustainability-related staffing. It should be noted however this is not necessarily the trend across the entire sector. Company A and B both argued that their sustainability programs and staff have not been the first to go because sustainability is now so deeply embedding into their company's way of doing things and it is not seen as an expendable program (Interviewee A2 and Interviewee B1).

Other studies have found that in the absence of a committed or engaged leadership, the presence of an in-house sustainability champion can be an effective catalyst for organisational change. However Elmualim et al. (2010) caution that at some point management has to not only buy into the concept that it is a good thing but begin to champion for change themselves. This is because the changes required can be complex and require social and technical changes so the support of the management and leadership team is required for effective, long-term change. Additionally Jenkins (2006) highlights that in large corporate firms the sustainability champion is often from the middle-tier of management, which is often not present in SMEs. This can make being a sustainability champion in an SME more difficult as the owner-manager is often autonomous in setting the values and direction of the firm. Jenkins (2006) found that in a SME the champion for sustainability or CSR was most often the owner-manager. However, at Company D it is the Compliance Manager (Interviewee D4) who seems to have adopted this role. The role of an engaged leadership team is discussed further in section 7.4.3.

7.3.2 Sustainability key performance indicators (KPIs)

A key strategy used by all three sustainability leaders to influence their employee's behaviour and embed responsibility for sustainability targets across the organisation was to include sustainability criteria into their KPIs. Interviewee A2 believes that this people management strategy, along with sustainability reporting which is discussed in section 7.4.2, were two of the most powerful strategies for creating change in their organisation.

> *"…very early on we built sustainability into people's KPI's. In fact everyone has sustainability KPI, across the organization and what we did was we actually developed very specific objectives for different jobs across the business. So your KPI or objective was different based on what's the role you have within the organization."* (Interviewee A2, General Manager CSR, 06.10.2010)

The impact of passing on responsibility to the staff for the environmental and social performance of the company via their KPIs is that it has engendered a sense of

responsibility and accountability, improved acceptance of sustainability practices and led to the continued evolution of embedding sustainability into the organisation. Interviewee A2 elaborated on this point:

> *"... four years ago people kind of scratched their heads and thought what does this [sustainability KPIs] mean for me? Now it's been in place [the KPIs] people just don't even ask about it anymore. Everyone just kind of gets on with it and* ***they know that it's part of what they do*** *and if they do it well they get rewarded. What's powerful is that it means that sustainability doesn't become this thing that people do in their spare time, they get rewarded for it. So people look at how they can meaningfully make it part of their job."* (Interviewee A2, General Manager CSR, 06.10.2010)

Company B and C also have sustainability-related KPIs for their staff, including the Chief Executive Officer (CEO), which are linked to their remuneration packages. However, this traditional approach to people management, while initially effective, has started to be recognised by Company B as a barrier to progressing beyond the eco-efficiency stage of corporate sustainability. This is discussed later in section 7.9.1.

7.3.3 Compliance training, "green skilling" and personal development

Investment in employee training is another common strategy used by Company A, B and C to embed sustainability-led practices into their organisations. The primary focus to date has been to improve their employees' knowledge of sustainability rating tools, often termed '*green skilling*' (See Figure 7.2). Personal and professional development training and compliance-based training on topics such as health and safety have also been undertaken. Company D also invests in similar employee training initiatives, however, not under the guise of a sustainable development strategy.

Figure 7.2: Employee training, Company C, Source: 2010 Annual Report p.34

Dunphy, Griffiths and Benn (2007) argue that limiting staff training to technical training is akin to a compliance-based approach to sustainability and will have a limited effect on employee attitudes to sustainability or developing a company culture beyond compliance. However, all of the case study companies believe that it is vital for their staff to be knowledgeable on relevant compliance topics. None of the companies actually limit their staff education and training programs simply to compliance-based training. Their approaches more closely reflect what Dunphy, Griffiths and Benn (2007: 24) label the "efficiency" phase of human corporate sustainability (see Table 2.4), as they also provide training, or access to training, to improve their leadership and interpersonal skills. Company D also shows evidence of staff education and training beyond a compliance approach – as they have also recently provided staff training opportunities on leadership and interpersonal skills. The provision of innovation funds and sustainable development research grants are two other common approaches employed to support the development of employee's sustainable development knowledge in Company A, B and C. Company C also has an annual award which is awarded to recognise initiatives that employees have implemented on sites (Interviewee C1 and C4).

There is also growing awareness within the sustainability leaders and the wider sector that the environmental performance of the built environment can be improved simply by re-training building management staff, rather than potentially costly infrastructure upgrades. This awareness is supported by an ongoing Australian study (National Project Consultants and Exergy Australia 2009) investigating the non-technical barriers to energy efficiency. The first phase of the study concluded that a building's NABERS rating could be improved by almost 1 star (on a scale of 6) through improved building management practices. Interviewee A2 agreed with the research and gave examples from within their company where they have seen the benefit of investing in the training of building managers versus spending more money on technologies.

> *"We've got a building that was designed to achieve a 4 ½ star energy rating, NABERS rating...and going through the building tuning process and putting a lot of time and scrutinizing it very closely we actually got up to five star. Which was an exceptional outcome for that building because there was a general perception that those kinds of buildings...you wouldn't do better than 4 1/2 star and we have proven that you can... the guy that actually created NABERS in the beginning...he spoke about how five years ago he didn't believe a conventional building with a VAV system could do any better than 4 ½ star but now he knows of at least six buildings that have got to five star just through a diligent building management team and a focused scrutiny on monitoring and tuning..."* (Interviewee A1, National Environment Manager, 19.05.2010)

The costs associated with employee training came up in all of the companies, however, for different reasons. For the sustainability leaders it was primarily the fact that they had continued to increase the financial resources they allocate to training per employee. For

example, Company B reported in their 2010 CSR/Sustainability report that despite the financial crisis they had actually increased investment in learning and development opportunities and were performing well above the global norm. However, for Company D, specifically in relation to training on the various green building rating tools, the issue was the growing unsustainability of the cost.

Interviewee D4 can see the potential marketing benefit to their company gained by having all or a large number of their staff Green Star[12] accredited. However, Company D has also found that the costs associated with the upkeep of accreditation to be cumbersome. The benefit from a marketing point of view is the ability to state the number of Green Star accredited staff you employ in your project tenders. As will be discussed in section 7.7.2 familiarity and use of Green Star has become an expectation in the marketplace. For smaller firms like Company D, however, they need to be very selective about who and how many staff they get accredited because it is a large financial investment with limited value for the company, particularly in light of recent changes to the accreditation system.

> *"...it's gone from having good intentions to being a money spinner. Because it went from you did your course, you did your exam and you were accredited and then they've gone and said we're going to expire your accreditation in two years and to maintain your accreditation in that two years you need to accrue 30 points of professional development. To get 30 points it's a huge investment for the company because you have got to keep going off to do all these things. It's almost like in two years you have to go to something every two months.... it's $500 a pop every time you need to go and do something to keep your accreditation. It's a massive investment…"* (Interviewee D4, Compliance Manager, Nov 26, 2010)

Going forward they will limit the number of staff who get accredited and perhaps let existing accreditations lapse. They also recognise that the need for multiple accredited people on a single Green Star project is essentially redundant anyway as there is only one point awarded on a project for having an accredited member on the project team (Interviewee D4).

The companies are also continuing to evolve their sustainability training to move beyond basic tool and technical training to more values-based training. Company C, for example, undertook an employee education program over a nine month period in 2009-10, delivering 50 sessions to approximately 1500 employees. The rationale for the program was based on management's observation that not all employees had the same level of sustainability knowledge. The goal was to get all employees' core skills to a similar base level of sustainable development knowledge. That meant teaching them:

> *"…what sustainability means generally, what it means to the organization and what we're trying to achieve, trying to just get everyone at the same level of understanding."* (Interviewee C1, Business Development Manager, 25.11.2010)

[12] Green Star is the building rating tool created by the Green Building Council of Australia. To gain accreditation individuals must take a training course and pass an exam.

Company C had also observed that their green building projects were being delivered by a small number of people in the organisation and this was not going to engender change across the organisation.

> *"… we wanted to **move away from sustainability being about a few people in the organisation** to it just being part of the organisation. And senior managers could see our sustainability achievements very much came down to a few people. And you know that wasn't a sustainable model going forward. You really need everyone committed to it if you want to be a truly sustainable organisation. You can't achieve it through a few people."* (Interviewee C1, Business Development Manager, 25.11.2010)

The belief was also that by improving everyone's base level of knowledge it could empower employees to see that they could make a contribution whether they were an administrator, interior designer or a crane operator. Hatch and Dyer's (2004: 1173) empirical study in the semi-conductor industry found that by taking employees who work on the assembly-line and integrating their tacit knowledge into the firm's problem-solving activities it elevated their status from "pushing buttons" into "quasi-engineers". It also had a significant impact on firm performance and innovation – so there is potential in Company C's concept. Daily and Su-Chun (2001) also found that employee commitment to achieving sustainable outcomes increases when management gives them the power to make suggestions and implement good environmental practices.

7.3.4 Employee commitment

Employee commitment to achieving sustainable outcomes is not so much a strategy employed by the case study firms as it has been an enabler which has allowed them to achieve eco-efficiency outcomes. For example, the project team at Company C and its dedication to achieving the highest available green building rating while at the same time creating a commercially viable (based on current market standards and expectations) office block was identified as the key driver behind the success of the project.

> *"...what the team achieved on [the project] was pretty amazing and I think it came down to the people involved...because what was done was not something that came into the systems that we have...It was very much the people on the project just really committed to getting the outcome…they just cared about getting that outcome…there's not one actual thing I can point to and say we implemented this process on [the project] and as a result we actually got the outcome...I think it's just more come down to the team and them just being committed..."* (Interviewee C1, Business Development Manager, 24.11.2010)

Interviewee C4, who was a key member of the building project team, agreed that it was the project team's commitment to proving to the market that green outcomes were affordable and to *"crack the myth"* of the costs associated with green buildings. They were supported, however, by the culture of Company C which is known to support innovation and take a leadership role in sustainable development. This project example is discussed further in the

context of corporate identity in section 7.6. The sustainability leaders do understand the importance of employee commitment as previously discussed in Chapter Six.

All three of the sustainability leaders believe that the strategies outlined in the previous three sections above help to stimulate employees' commitment to the company and its sustainable development strategy.

7.4 Internal resources

Internal systems have played an important role in supporting change for corporate sustainability. New systems and processes have been developed from the corporate level down to the project level of the companies. However, as mentioned earlier it is the governance structures and leadership which have played a crucial supporting role (see section 7.1). Common strategies and themes across the sustainability leaders are discussed in further detail in sections 7.4.1 to 7.4.3.

7.4.1 Asset/Portfolio sustainability strategies

At the building or building portfolio level, all three of the sustainability leaders have developed a sustainability strategy for each individual property or property fund. The strategy generally sets out targets for environmental performance and plans for implementation. Often those asset level strategies are linked back to the corporate level sustainability strategy. Interviewee C5 explained:

> *"...we have a sustainable responsible investment policy… there's 5 or 6 things that we commit to doing and one of those is having fund specific sustainability strategies for every property fund, which might be 10-20 properties …That's how we manage change or implement change across the business."* (Interviewee C5, Sustainability Manager Investment Management, 24.11.2010)

Interviewee B5 also spoke of their asset sustainability strategies and how they are used to ensure they are strategic with their financial expenditure. They focus on the competitive position of the asset and its long term value during regular building maintenance and upgrades to avoid the false economies of lower upfront costs.

> *"In our existing properties we have a master plan for all our buildings, what we're going to do with them in terms of retaining or improving its position within the property industry...so when the chillers do come up...we get the most efficient chillers for that particular property. So by doing this we are avoiding having to expend more [capital expenditure] then we should, or having to spend it urgently because of some deal we are trying to do, because some tenant needs this higher rating and we cannot offer it. So it is really being ahead of the curve."* (Interviewee B5, Head of Office, 18.05.2010)

Using Dunphy et al.'s (2003) phase model (Table 2.4) these asset sustainability strategies are more reflective of the strategic proactivity stage of corporate sustainability than the efficiency stage. This is because they see these environmental strategies as a strategic

business opportunity to provide competitive advantage and not just to reduce costs through efficiency.

7.4.2 Sustainability performance reporting

Company A, B and C have all implemented voluntary CSR/sustainability reporting as part of the implementation of their sustainability strategies. All three companies are also included on the DJSI and FTSE4Good, respond annually to the CDP and have signed the United Nations Principles for Responsible Investment (UNPRI). The companies' initial rationale for reporting was to establish their credibility and gain legitimacy through transparency. Company A, at the time of the data collection, was the only company still publishing a separate sustainability report. It is also independently assured against the GRI G3 guidelines. Aras and Crowther (2009: 286) are critical of corporate sustainability reporting arguing that although the amount of information being disclosed has increased, "corporate concern with sustainability is little more than rhetorical rather than a serious attempt to address the issues involved." They argue that the increase in disclosure is linked to firms seeing the "commercial benefits of increased transparency". However, because their understanding of sustainable development is often insufficient the results are flawed and simplistic evaluations of it (Ibid, 2009: 286). Barkemeyer et al. (2011: 15) agree and add that in order to circumvent the limitations imposed by the original intentions of the Bruntland Commission's conception of sustainable development the popular business reporting frameworks, such as the ones used by the sustainability leaders in this study, have adopted a mangerialist interpretation which is "in line with the win-win paradigm" of TBL corporate sustainability. For example, the corporate community in the developed world has taken the concept of development out of sustainable development and instead focused on sustainability and in particular environmental management. There is no evidence of poverty alleviation which Barkemeyer et al. (2011) argue is one of the original intentions of the Bruntland Commission. An in-depth review of the quality of the CSR/sustainability reports of the case study firms was beyond the scope of this study. However, beyond critiques of the efficacy of corporate sustainability reports is observation that the **process of reporting** can have a transformational impact for the company. CSR/sustainability reporting has been quite influential in Company A and has driven some organisational changes.

> *"I think the process of reporting is quite powerful.* ***It is not about actually generating a report, it is actually the process of reporting that is very powerful.*** *So the fact we set goals and targets that are either annualized or kind of over a set timeframe of a couple of years the report in effect hold you to account because you have got to completely disclose in that annual basis how you are tracking."* (Interviewee A2, General Manager CSR, 06.10.2010)

Adams and McNicholas' (2007: 402) study also identified that "the process of developing a sustainability reporting framework" resulted in "some organisational change". The most

significant organisational changes resulted from the integration of sustainability issues into the strategic planning process and an increased focus on KPIs not previously reported. Company A reported a similar effect. For example, the information (metrics, targets etc) contained within the CSR/Sustainability report, according to Interviewee A2, is used by both their strategy and risk management teams. Sustainability KPIs and their impact were previously discussed in section 7.3.2. External assurance of the CSR/sustainability report was also identified by Company A as a driver for continual improvement and organisational change.

> *"…assurance for us has been incredibly powerful. The assurance process for us is not just about checking off the numbers, it's about asking question of what is material to our business and having someone independently review our materiality process and confirm that we have identified the right issues. And I don't think you can underestimate the power of that..."* (Interviewee A2, General Manager CSR, 06.10.2010)

In 2010, Company B switched to what they termed an integrated business reporting approach, meaning they no longer produce a separate sustainability report. However, they still report in accordance with GRI G3 framework and seek independent assurance of their data. In 2009 Company C also switched to a web-based format and created a dedicated sustainability website. Company C has never created an independently assured GRI report as they have been actively advocating for a construction and real estate sector supplement (CRESS) since 2006[13]. Prior to 2009 their CSR/sustainability reporting was integrated into their Annual Report.

The transition to integrated reporting some respondents believe is a sign of corporate sustainability becoming less the domain of the sustainability team as it is integrated into other parts of the organisation (Eccles and Krzus 2010). However for Company A this shifting responsibility is still occurring even though they are not espousing the integrated reporting approach. For example, their finance team was in the process of assuming responsibility for the company's carbon reporting.

> *"I'm really excited that the finance part of our business has stepped forward and said actually we think we are the best part of the business, equipped to measure and manage carbon data. [They said] we see that that is our responsibility now. We will work with you to transition that accountability. I say bring it on! Yes I agree you have got the skills to be able to do that. Sustainability is often best placed at dealing with change management and looking at innovation opportunities, but it is teams like finance that are better at dealing with more sort of accountancy type practices which is essentially what you have with greenhouse gas emissions."* (Interviewee A2, General Manager CSR, 06.10.2010)

[13] CRESS was released in 2011 and Company C fulfilled its commitment to produce at GRI report in 2011 using the CRESS framework

Company D did not undertake any CSR/sustainability reporting and it was believed to not be a relevant activity for their organisation as they do not have shareholders like the publicly-listed firms (Interviewee D1). Adams and McNicholas (2007) also found that publicly-listed firms are more likely to report more than privately-owned firms. For smaller firms it can also be a matter of the availability of resources to create a CSR/Sustainability report. For example, Perrini et al.'s (2007) study of over 3000 Italian firms found that large firms are more likely to implement reporting strategies than SMEs, in part due to the financial and human resources involved. To make sustainability reporting more accessible to all firms in the Australian property and construction sector the PCA developed a set of guidelines for firms in the sector to undertake sustainability reporting. It is aimed at the smaller firms that might not have the financial or human resources available to undertake more formal reporting, such as the GRI reporting, or for unlisted companies who do not currently face the same external pressures as publicly-listed companies to adopt the GRI reporting framework.

7.4.3 Balanced leadership style

As mentioned earlier in this Chapter (section 7.1), having an engaged leadership has been crucial to support the implementation of the sustainability strategies in Company A, B and C. Interviewee B1 felt that board endorsement and support is especially important when you are at the "*front tier"* or taking a leadership role in corporate sustainability. Often there is a lack of reliable and comparable data to support a business case for a proposed action, particular innovation or project and "*a leap of faith" is needed.* It is the corporate board, she believes, which are best at taking these leaps and supporting *"transformational change".* Without the corporate board she argues that you would only ever get *"incremental change"*.

> *"we are lucky…we've got a chief executive and the board who will recognise the potential for transformational change when they see it. It doesn't mean they won't require very strict business cases but invariably you get to the point where you cannot put any more data on the table because it hasn't been done before. It hasn't been measured before. And then you have to take a leap of faith."* (Interviewee B1, Head of Communities, 17.05.2010)

Top leaders with the capabilities to guide the organisation's sustainable development strategy are also very important (Smith and Sharicz 2011). When Interviewee B1 was questioned further about what separates those on a board who can spot opportunities for change and those who cannot she stated:

> *"I think in the organizations that manage this well, you've got loose tight arrangements. So you have* ***got governance that is really rigorous and makes you jump through hoops,*** *put up a business case that is well thought through so you have got as much data as you can get on the table …and then you've got* ***people with courage*** *… If you have got people sitting on your governance structures who are* ***very experienced*** *and also* ***courageous*** *and very* ***interested in people***

> ***development and organizational development**, then you have got a good recipe. And [board members] who are **prepared to coach**."* (Interviewee B1, Head of Communities, 17.05.2010)

A recent study by Du et al. (2012: 11) agrees with Interviewee B1's suggested characteristics. They concluded that a mixture of "transactional" and "transformational" leadership is needed for a firm's corporate sustainability endeavours. Transformational leadership is needed "for initiating and designing" corporate sustainability practices and transactional leadership is required to implement and derive business benefits from the practices. Dervitsiotis (2005) has also previously theorized that a combination of traditional leadership to set and direct a strong vision and emergent leadership support and promote innovation. Both of these authors differ from much of the previous literature which mostly documents positive effects of transformational leadership (see for example Sully de Luque et al. 2008; Derue et al. 2011).

7.5 Business relationships

As outlined in Chapter Six the companies' business relationships are those stakeholders with whom they have a more traditional business transaction. Company A identifies its business relationships as "its marketplace" and includes customers, suppliers, investors, industry and government as the key stakeholders. Company B has identified similar stakeholders and includes customers, tenants, investors, partners, authorities and governments. Company C's business relationships include their clients, suppliers, shareholders, governments, regulators, investors, and competitors. Company A, B and C indicated that their business relationships, specifically their customers/clients and suppliers, can inhibit their efforts to operationalise sustainability. In order to overcome these barriers all of the sustainability leaders are managing their business relationships in order to influence, encourage and support organisational change in their customers/clients and suppliers companies.

7.5.1 Green leases and sustainability tools and organisational change

The sustainability leaders have developed a number of resources to aid their customers/clients to embed sustainable development thinking into their projects – most notably green leases and design support tools. A green lease is a lease between a landlord and tenant which provides mutual contractual lease obligations for both parties to minimise environmental impact in areas such as energy, water and waste (Better Building Partnership 2010). The green lease defines the roles and responsibilities of each party to achieve the particular outcomes and aims to help to engage the client (tenants) and influence their behaviour.

Company B has developed a property sector specific eco-footprint calculator, in collaboration with the Global Footprint Network, which they use internally to assess property development designs. They provide access to this tool, essentially sharing their intellectual property, to their tenants. Company B recognises that the environmental impacts related to a tenant's fit out is often greater than those of the base buildings that they (Company B) develop and own. Currently new and renewing retail tenants are required to assess their fit outs and then achieve reduction targets for the environmental impacts of the designs. Company B does provide intellectual support, based on their experience, to help them reduce their impact.

> *"... we work with them as to how they are lighting their stock, what materials they are using etc. etc. and water obviously and trying to make sure they find the right balance in the fit out, design concepts, the business concepts and the materials they use…"* (Interviewee B4, Head of Development, 27.10.2010)

Even though Company B has made its eco-footprint tool mandatory for all of its tenants there is no penalty for those who do not comply.

> *"…you get a huge range right from the belligerent who don't want to do anything through to the people who see it as a real opportunity to make a step-change for their business…there are a lot of chains here in Australia, a lot of businesses that have a number of shops across Australia, so if they can make an initiative in one and it flows through to the rest that is great."* (Interviewee B4, Head of Development, 27.10.2010)

Interviewee B4 added that you cannot expect 100 percent uptake as use of the tool can often require a major shift in the tenant's own internal business processes, especially if they are a large retail chain with standardised designs and specifications.

> *"...for every retailer to successfully deliver on that is difficult. You win all of this by degree. So you might get 90% across the line…but there might be a few at the end of it all who use materials that we wouldn't have liked them to use or something like that…If somebody has got a standard design that they use everywhere, a standard methodology, then it is hard to get them to change it sometimes for one. But you get them on the journey."* (Interviewee B4, Head of Development, 27.10.2010)

Resistance to change by clients is something that the sustainability leaders have not avoided dealing with. The next section discusses how they approach customer's/client's resistance with persistence and risk management.

7.5.2 Managing resistance with persistence and risk

Resistance from business relationships to implement changes internally or get on board the programs being proposed by the sustainability leaders can require persistence mixed with a bit of creative risk management. For example, in 2007 Company B implemented a program to purchase green power as part of its energy efficiency strategy. In order to do this it needed to get the joint owners of its buildings to agree to the program. This meant getting them to understand the business value of doing it – reputation, showing leadership,

competitive strategy, ethical position - as there was a financial cost associated with it. Interviewee B5 explains below that in the first round in 2007 it was able to get all of the joint owners on board. However, in 2010 when doing re-negotiations there was some pushback from one joint owner

> *"...we had to negotiate with our joint owners, some of them were more supportive, others of them are less supportive, but we got them all across the line…we've got one joint owner in particular, now that we are renegotiating, and the building does need a fair bit of green power and he is refusing to have any green power. He reckons is just a whole of hogwash and why bother...."* (Interviewee B5, Head of Office, 18.05.2010).

When asked if there was any particular strategy or approach they thought might work to get the reluctant owner on board no one particular strategy came to mind. Company B just had to appreciate the "short-sightedness of the co-owner and the need to be persistent and continually push for a change of attitude" (Interviewee B5).

However, a strategy that did work for Company C to get a reluctant client on board was to put in a request that the client's management team provide a document stating their unwillingness to participate in any of the sustainability initiatives.

> *"I was doing a transaction with a major stock exchange listed company and it was for a lot of office space and they were very financially driven…like oh we just want the dollar, we don't want to know about all these other things…I sat there and said well I know you don't want to know about it however, as an investor, and it's not only me but I have a whole lot of other people that are interested in it, so therefore we are going to put a couple of things [sustainability requirements] in place.* ***If you're not on board then I want you to write it…I want you to confirm to me that you very clearly as a corporate are not willing to participate."*** (Interviewee C3, General Manager, 24.11.2010)

The end result was an about-face by the company and their board from zero interest to "*going to the highest level they could go to*" (Ibid, 24.11.10). Interviewee C4 also added that there is a growing trend with some larger corporations, especially with banks, to use their company headquarters to improve their corporate image.

> *"…[they are] trying to paint themselves to be friendly, sustainable, good corporate citizens through building these signature [green] buildings.... [they] are actually using green to change their image."* (Interviewee C4, General Manager, 19.11.2010)

The fact that clients/tenants are swayed by risks to their corporate reputation aligns with what is documented in the BCS literature. In general, Carroll and Shabana (2010) found that the BCS is primarily driven by firm's desire to avoid or minimise risk. Lutzkendorf and Lorenz (2007) have also found that risk management dominates the rationale given for the uptake of sustainable development in property investment.

7.6 Corporate identity

As discussed in Chapter Six establishing and maintaining a corporate identity associated with leadership and innovation has been a key driver for motivating Company A, B and C to improving their corporate sustainability strategies and performance. The example in this section focuses on the project level of the case study firms and the impact of corporate identity on green building outcomes.

7.6.1 Chasing stars: achieving green

Building Y[14] in Melbourne is a project-based example of Company C's strategy to enhance its reputation and corporate identity. The building work commenced in 2005 and was completed in 2008. The building achieved a '6 Star Green Star Office As Built v2' certified rating, the highest possible rating available at the time under the Australian Green Building Council's rating system. The company's initial rationale for the project was to kick-start a large redevelopment project in Melbourne which had stalled, as well as, to establish their corporate identity in the Melbourne market. Originally, according to Interviewee C2 and C4, the building was not intended to be a world-leading green building, however, when the reputational implications of the project were considered the company identified that it needed to set high sustainability targets.

> *"We didn't make the decision to go to 6 star at the beginning because we knew that this project had to make financial sense and we could not invest more than we could afford. So the original outcome was really just more of a development momentum kick starter and from that perspective it didn't necessarily have to be 6 star. But as we looked at the* ***reputational side*** *of [our company] and putting [it] back on the map we really realised we had to go that further step."* (Interviewee C2, Project Director, 25.11.2010)

Interviewee C4 elaborated that the project strategy expanded to include cracking the myth of cost associated with green buildings and push for transformation in the market. At the time Melbourne City Council's new headquarters - Council House 2 (CH2) - was the only 6 star Green Star building which had been completed in Australia. While the project is said to have done a lot to push green transformation in the industry it also did not help in many ways.

> *"...the problem that Council House posed to the industry was that environmental was seen as a good thing but the cost of that building was so prohibitive, it was three times the market rate that it actually did damage in terms of investors not wanting to invest in Green Star or into anything environmental…So it's a flagship in that it really put the flag on the hill and it caused people in our industry to think about stuff, but in terms of tenants and owners and occupiers they didn't have a palete for it at all"* (Interviewee C4, General Manager, 19.11.2010).

[14] The building name has been changed to protect the anonymity of the case study company

The Head of Development of Company B reflected Interviewee C4's observation that the property market did not really receive CH2 well.

> *"Now that building has got a lot of accolades because of the sustainability...but would you actually want to own it? I don't. [It is] too experimental, too quirky, too dark inside, not enough windows, no particular outlook...the actual space is very cave-like. So that's an example of a building which is certainly gotten industry credence for what it was...but as an investment property I would not go near it"* (Interviewee B5, Head of Office, 18.05.2010).

Interviewee B5 also agreed that it had to be different to achieve what it did, however, he was critical of the building's potential for commercial success. For the investment market the intangible benefits of a green building, such as the reputational benefits, are considered to be of higher value when the financial fundamentals are correct, he argued. A green building can give you all the reputational associated intangibles in the world, but if it is not a financial success, that is not sustainable.

> *"...other investment properties which on the financial criteria perform well and you add a bit of green to them well those intangibles I think are much stronger...Turn it around if CH2 was a commercial investment property not just custom-built for the Council, would it have leased up quickly? I don't know"* (Interviewee B5, Head of Office, 18.05.2010).

With the CH2 project in mind, the project team at Company C decided that they would try and build a building that achieved the highest available sustainable design and performance ratings that resulted in no cost penalty (Interviewee C4).

> *"Because projects take 3-4 years to develop...we knew that sustainability wasn't going to go away...and we just needed to work out how we were going to be able to put a good news message out into the marketplace to say that you can still get your end outcome without penalty."* (Interviewee C4, General Manager, 19.11.2010)

Working closely with the project partners (i.e. the owner, developer, designer, and builder), essentially changing the way she worked with her ***business relationships***, was critical to the success of the project.

> *"... I had to work a lot with all my partners. So I couldn't do it in isolation and I had to bring the end owner, the developer, obviously my own business and the tenant on board."* (Interviewee C4, General Manager, 19.11.2010)

Transparency and openness, along with actively working to identify the costs and benefits was the strategy applied by Company C. Interviewee C4 explained that the project stakeholders had to work together to identify the value to each of their companies as a critical step in the project:

> *"…we all wanted to pull off the 6 star and we identified the benefits for everybody if this building did become 6 star. So [the investor] as a company could say that they managed to crack the myth that green has to cost a bomb, the developer would have a flagship ESD development, the tenant would be in a signature building and could espouse that they are putting their money where their mouth is and* ***the***

> ***owner...they argued quite heavily against identifying value to them**."* (Interviewee C4, General Manager, 19.11.2010)

Interviewee C4 shared that for the building owner they investigated benefits in relation to rental returns and reductions in operating costs. The building owners were resistant to identifying these types of benefits because at the time the project was the first of its kind so there was little data available to substantiate any financial performance claims being made. Also as a listed company it had more direct accountability in terms of performance for any claims made (Interviewee C3). However, now that the building project is completed the building owner has identified the benefits of the project – particularly in terms of the ability to secure an anchor tenant in a slow market.

> *"In short I wasn't being offered any money for [the rent]..some people have said oh yeah you get more money[for rent] but it's not true... the real difference is I got a tenant in the building versus the building directly across the road that would've accommodated this tenant, that then sat vacant. So economically yes I did [benefit]. I secured a tenant as a result of it*." (Interviewee C3, General Manager, Nov 24, 2010)

Interviewee C3 also added that a primary reason the tenant chose their building over the other across the street was the sustainability credentials of the property.

> *"...they wanted the best [environmental] outcome they could get because they wanted that as part of their story in pitching for major government work."* (Interviewee C3, General Manager, Nov 24, 2010)

As previously outlined in section 7.3.4, it was the people on the project team, their motivation and commitment to achieving their aim of being the company who cracked the cost myth of green buildings which is thought to have been the most important factor in the outcome.

7.6.2 The unintended consequences of market transformation

The market impact of the project according to the Interviewee C4 is a general change in mindset of property funds towards a mandate of only owning and developing new buildings which are as a minimum five star Green Star rated. However it would be difficult to conclude that this project alone is responsible for the change in attitude as there are a number of other factors which can be attributable to the market shift as well such as:

- the inclusion of environmental criteria (Green Star and NABERS ratings) in the Property Council of Australia's building quality matrix; and
- the commitment of the national and state governments to own and occupy NABERS and Green Star rated office accommodation (Wasiluk and Horne 2009).

As previously discussed in Chapter Six the drive for competitive advantage based on environmental performance and the reduction of risk have been two other significant factors in the property and construction market's transformation.

However, Interviewee C4 also felt there was a downside or unexpected consequences of the market transformation created – although it is now a 'given' within the market that six star buildings are commercially achievable there is a gross underestimation of the amount of effort required to make it happen.

> *"...it didn't happen easily...you had to work hard to be able to pull off this jigsaw puzzle. So it was, you know, sort of bittersweet. Like it's great, yes you know, this is now becoming mainstream or it's a given which is the aim, you want all your buildings to be like it but then there was no appreciation for the actual pain and effort."* (Interviewee C4, General Manager, 19.11.2010)

Many respondents in phase one and two also highlighted that the increased popularity and visibility of the Green Star rating tool has led to increased request for Green Star ratings from clients. However, often the customer/client does not understand what they are asking for.

> *"...the people want the stars. The board has said. And you know what, you have no idea what is Green Star is all about Mr. client and you can't say it but you think you have just been told by upper management and by the board we have got to have a Green Star project. Whatever it takes it's got to be a Green Star. We've told everybody, we've told the marketplace that we are going to have a Green Star building. But what about what you've actually created? Is it functional? But they're not worried about how to do it just tell me how to get this Green Star… which kind of takes it away from its intended purpose a little bit."* (Interviewee D2, Project Manager, 19.10.2010)

All of the case study companies argued that creating appropriate spaces is more akin to sustainable development and that it is possible to create an environmentally and socially sustainable space for clients without needing to achieve a Green Star rating. Green buildings as a strategy and the limitations of them are discussed in further detail in section 7.7.2.

7.7 Environmental health

7.7.1 Environmental management systems

The companies have all developed and implemented new environmental management systems, many of which are not covered in this thesis. What is important to note is the observation that these new systems require support from a variety of the firms' intangibles, such as staff capabilities, governance structures and internal procedures to support successful implementation and continual improvement. If firms do not currently have the capabilities or capacity to support the system then the likelihood of meaningful change and actual impact is hindered. For example Interviewee D4 shared her company's experience with their environmental management system (ISO 14001) and how a lack of procedures, accountabilities and employee awareness has rendered the system to be nothing more than a book on a shelf.

> *"...we are so lacking in procedures and that's the fundamental problem with our environmental system. There are* ***no actual procedures*** *on how we do anything. It's a very vague document. It really is a showpiece, it's a fluff piece. It means nothing. No one uses it on site. You can give them environmental plans for the job and then it will sit on the shelf. And it means nothing. It* ***doesn't have any decisiveness or direction*** *for any of the guys to understand what they are supposed to be doing. No trigger points... It's all fancy words and it's a nice-looking document but that's all it is.* ***It's not an action book, system that says when this happens this is the next step, this is who needs to do this, this is who authorises this.****"* (Interviewee D4, Compliance Manager, 26.11.2010)

Holton et al.'s (2010) empirical study of four UK based precast concrete firms also found that they needed to allocate additional resources to develop their environmental management system, including the delivery of staff training, setting of objectives and performance targets and engendering commitment and accountability for the system amongst management and employees.

7.7.2 Green buildings

There has been a discernable shift, which started to gather momentum in the mid 2000s, in the Australian property and construction sector with regards to environmental performance – particularly at the project level or built environment scale. There is an expectation in the marketplace now, according to almost all of the interviewees that if you are going to construct a new building – particularly a commercial building in a city centre location – that it will achieve voluntary green building criteria, i.e. NABERS and Green Star. To construct anything which simply complies with current building regulations respondents believe carries a very high risk that the building will be *"obsolete"* (Interviewee C1) before it is even finished. For example the Head of Office from Company A explains:

> *"...basically if you are going to do a building without the highest sustainability standards nowadays you are actually developing an obsolete building...I mean 4 star is pretty good but if you built a brand new A-grade four star in an Australian CBD people are saying why are you doing it? There is no point; it should be at least 5."* (Interviewee B5, Head of Office, May 18, 2005)

The same shift in attitude in other segments of the market, such as retail, industrial and residential buildings, is not as evident as the commercial sector. These other segments of the sector have many distinctly different drivers, stakeholders, regulatory pressures and strategies than the commercial sector.

Beyond their own internal sustainability strategies and commitments, changing tenant expectations have been a key external driver for the sustainability leaders to focus their efforts on improving their environmental performance.

> *"At the moment any building upgrades are driven, certainly in the commercial office sector...by the requirement to have the tenants be in a 4 or a 4 ½ star NABERS rated building"* (Interviewee C5, Sustainability Manger – Investment Management, 24.11.2010)

> *"...it's very much driven about what the market is expecting these days. They're expecting a minimum 4 star Green Star and 4 ½ star NABERS energy."* (Interviewee C1, Business Development Manager, 24.11.2010)

> *"...any tenant brief that comes along these days they do have a sustainability criteria. Until about four or five years ago that was absolutely nothing it was really annoying. We put a lot of time and effort into upgrading buildings and everything sort of fitted perfectly and the rent was $10 higher than they would go next door and into the two star building. That has changed now government is the one who really put their money where their mouth is…and to a lesser extent private companies as well."* (Interviewee B4, Head of Office, 18.05.2010)

The market is demanding these kind of spaces for a number of reasons including the growing belief that green buildings are better quality buildings, "switched on tenants are now starting to understand that a better NABERS rating often equates to a better quality building" (Interviewee C5), staff are more productive in them and it is a very tangible statement of their brand and/or commitment to sustainability. However as mentioned in section 7.6.2 above there is unease amongst some respondents that green building ratings have become a public relations exercise and not about creating appropriate and functional buildings. Glass and Dainty (2011: 5) also note that building rating tools have been "subject to market backlash" and "criticised for reducing" the creation of a sustainable built environment to a "tick box exercise". In Australia there has also been some backlash over the difference between a *design intent* rating versus an *as built* rating. In the early days of Green Star, projects commonly sought a design rating and the end result of what was constructed often did not match the design intent. To deal with critiques over design intent versus actual performance, design ratings are now viewed as less desirable by the marketplace.

7.8 Social citizenship

The sustainability leaders all indicated that they feel that they have a good grasp on environmental performance and how to manage it. According to Dunphy et al.'s (2007) phase model (Table 2.4) their efforts put them between the efficiency stage and strategic proactivity stage of corporate sustainability. As mentioned previously in this Chapter and Chapter Six they have begun to place more emphasis on improving their understanding on the social aspect of TBL sustainability. Their efforts are driven by both their maturing understanding of corporate sustainability and pressures from stakeholders.

7.8.1 Stakeholder engagement plans

Company A, B and C are all investing more resources to develop their capabilities to better understand the quality and value of their relationship with the stakeholders in the wider community. Recently this has been in the form of new procedures, in particular

stakeholder engagement plans for every one of their existing assets and/or building projects.

For example Company A are implementing stakeholder engagement plans for all of their assets regardless of where it is in its development cycle (i.e. operation, re-development) with the aim of understanding who the stakeholders are and what are the priorities of the stakeholders in that asset. Their hope is to better understand what contribution the company makes to the community and how they can *"enhance that through [their] existence."* (Interviewee A1, National Environment Manager, 19.05.2010.)

> *"...it's about establishing stakeholder engagement plans for every asset regardless of whether it's in operation or going into a development cycle. So it is the process of just understanding who are your stakeholders? And what are the priorities of the stakeholders in that asset– so thinking of the community you are in."* (Interviewee A1, National Environment Manager, 19.05.2010)

Company C also has stakeholder engagement plans in place, as part of the sustainability strategy, for each of its portfolios. Springett's (2003) study of New Zealand businesses found a tendency to focus on stakeholder engagement as the primary interpretation of the social aspect of TBL sustainability. This is critiqued for not being truly inclusive of the wider community and a more radical shift in how those with a non-traditional relationship (i.e. non financial) with a company are viewed. Interviewee B1 would agree with Springett (2003) arguing that stakeholder identification in most cases is still very much related to those who have a direct relationship with the company.

> *"I am looking at the relationship between the development and operation of our buildings, like shopping centres and the communities in which they sit. And at the moment that relationship is still very much a traditional role...and I think that is huge missed opportunity for both parties. Huge missed opportunity."* (Interviewee B1, Head of Communities, 17.05.2010)

Indigenous communities are particularly pointed out by Springett (2003) as a marginalised stakeholder group. The case would be similar in Australia. The sustainability leaders are in the process of expanding the boundaries they use to identify their stakeholders and this is discussed in the next section.

7.8.2 Widening stakeholder identification boundaries

The sustainability leader's identification of their stakeholders has expanded from primarily considering the direct impacts of the built environment they own and create on its users to how they can contribute to the communities at large in which they operate.

> *"In those early days of our own understanding...we put social sustainability in a box around what it meant for an asset. At that stage our thinking was limited to looking at the immediate building...health and safety predominantly, occupant comfort, so maybe indoor environment, ensuring that we provide a safe and habitable workspace. I'm not so sure we really grasped it much further than that. Our thinking*

> *was limited to those things initially without thinking about the broader community and the impacts."* (Interviewee A1, National Environment Manager, 19.05.2010)

Again Dunphy et al. (2007) see this shift as reflective of companies becoming more strategic in their approach to corporate sustainability. Company A and B also both highlighted that they have seen a maturing of their stakeholders, not only those who are considered business relationships (i.e. government, clients, investors), but more importantly also the communities in which they operate. These communities and the broader Australian community are becoming more sophisticated and have growing expectations of the sustainability leaders. Interviewee A2 stated that:

> *"...communities are becoming more and more sophisticated in how they engage with businesses and their expectations of a business like ours, is growing all the time."* (Interviewee A2, General Manager CSR, 06.10.2010)

Interviewee B1 agreed and added:

> *"... we're seeing the increased demand by stakeholders to have a say at every point in our business…a company like this one, faces into 7 million Australians in its catchment area..."* (Interviewee B1, Head of Communities, 06.10.2010).

Company A sees the next step in their sustainability journey to be influencing areas which are within their realm of influence but not necessarily their direct control – that is the other stakeholders in the value chain (not just the supply chain).

> *"I guess we are quite good at focusing on the things that we control in our business…where I think there is a lot of opportunity for us still is through our… value chain and not just our suppliers. It is also how we more effectively engage with our customers and realise opportunities with our customers as well."* (Interviewee A2, General Manager CSR, 06.10.2010)

For Company B identifying a wider local community, then was conventional at the time, for a large suburban retail project had a positive impact for multiple stakeholders including: the local community, the local government and the company themselves. This allowed them to develop a larger retail centre, invest more in its environmental performance and create a social hub for the community.

> *"… when we did the research and we identified a much bigger market for [Shopping Centre X] than with conventional thinking at the time. Obviously there was a risk in that which proved to be right because it is trading to those levels. But that meant that the size of the town centre that you could build and what you could do with it [in terms of sustainable design] was significantly different than what we believe some of our competitors were going to do with it. And that gets a critical mass both for creating a social place that people want to go to and spend time at, but also the layers that you can put in that in terms of mixed-use. And then how you can integrate some of the sustainability initiatives into it. Because the bigger the scheme you are doing the more opportunities you have to invest in, especially active technologies if you go down that track."* (Interviewee B4, Head of Development, 27.10.2010)

There is also a historical perception of social sustainability as corporate philanthropy which is claimed to persist in the industry which puts unconscious limits on how companies tend to identify as their community stakeholders.

> *"...corporate responsibility carries a lot of baggage in terms of what is expected from the social side and it is still largely in people's mind as almost corporate philanthropy. And that's not where the real opportunity is at."* (Interviewee B1, Head of Communities, 17.05.2010)

Carroll and Shabana (2010) agree that corporate sustainability has its roots in 1950s business literature where the focus was corporate philanthropy. Philanthropy is about "business support of good causes" where the focus is on "businesses' responsibility to society and doing good works for society" rather than addressing the social impacts the company might actually have on the communities in which it operates (Ibid, 2010: 87). Hillman and Keim (2001) add that the corporate philanthropy approach to the social aspect of TBL sustainability, is easily copied by competitors and does not build any new company resources or capabilities.

All four of the case study companies undertake philanthropic activities and report on them in their sustainability literature (i.e. websites and reports). Company D does undertake corporate philanthropy but does not link to a corporate sustainability strategy – as they do not have a formal sustainability strategy. Interviewee D1 did indicate, however, that prior to the GFC there was some consideration of corporate sustainability in the company's strategic plan.

> *"[Company D] is, in relative terms, still a very young company...it almost reached maturity and then the GFC hits and that has set us back. ... those things that you talk about were mooted in the strategic plan but because of the GFC that's just put everything on hold...we've been set back about five years ...the things that we talk about in terms of corporate social responsibility...they are wonderful things to do but at the end of the day somebody has got to pay for it. And if the shareholders, who is [the owner], if they are not getting a return then not only are they not getting a return but they have to invest it back into the business to support the business. So these things are nice and should have, but usually you have to have the profits to pay for them."* (Interviewee D1, Finance Manager, 19.10.2010)

Scholtens (2008) study of the interaction between corporate sustainability and company financial performance supported the view of Company D about social sustainability. They found that currently company financial performance influences its social performance and not the other way around. However, Dunphy et al. (2007) takes the position that companies who only undertake sustainability programs when funds are available or when a financial payback exists are in the efficiency phase of corporate sustainability.

7.9 Beyond efficiency and strategic proactivity

While it should also not be underestimated the amount of effort required to achieve eco-efficiency the respondents talked at length about the limitations of eco-efficiency as an approach to achieve sustainable development. This discussion was most pronounced in Company B.

There has been a noticeable levelling off in the energy efficiency gains at Company A and B (See Figure 7.3 and Figure 7.4), however, most of the discussion around how to push past the limitations of eco-efficiency centered on the role of human competence and approaches to identifying and managing it.

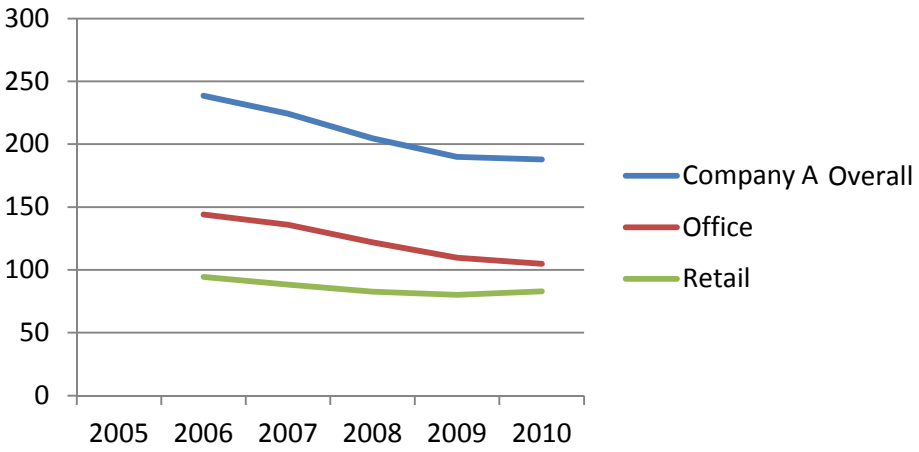


Figure 7.3: Company A: Energy Intensity kWh/m2 (Source: 2010 CR&S Report)

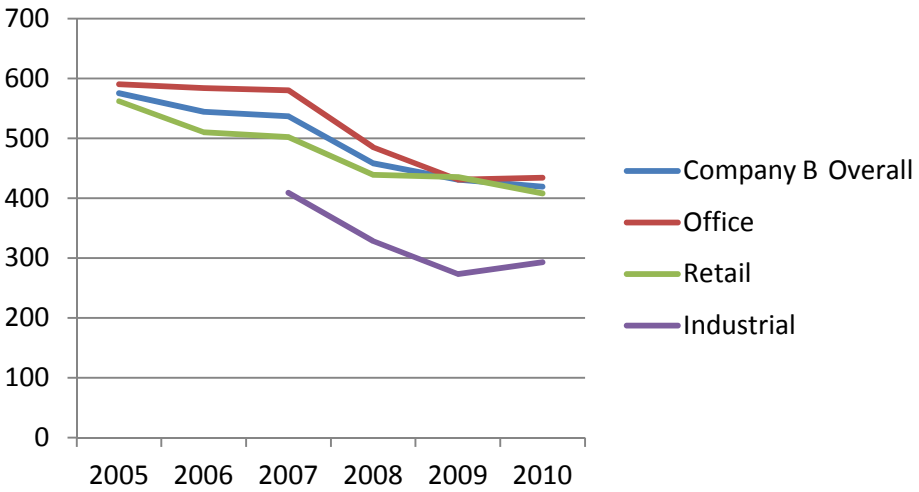


Figure 7.4: Company B, Energy Intensity (MJ/m2) (Source: 2010 Sustainability Report)

Herring (2006) agrees that technical fixes for eco-efficiency are not enough to achieve necessary reductions in resource use and that limits to consumption or sufficiency

measures also need to be put into place. Birkin et al. (2009) and Young and Tilley (2006) would agree. However the finding in this thesis is that **people** also play a very central role in changing business models to achieve sustainable development. The next two sections outline two key approaches to people management which were identified as limiting organisations from achieving more radical changes beyond efficiency.

7.9.1 Traditional people management approach

As discussed earlier in this Chapter, Company A, B and C have all implemented sustainability KPIs to transform the behaviour of managers and employees to engender a sense of personal accountability towards the corporate sustainability strategy. In most cases they are assessed on an annual basis and are linked to their financial remuneration, similar to other more traditional KPIs. Interviewee B1 and B2 also both believe that it is the more 'traditional' approaches to managing people which are a major barrier to the shift required in the business world for transformational change and to push beyond eco-efficiency. Marr (2007) argues that agency theory explains why companies put these types of measures in place – that is to guide the behaviour of the employee and align their objectives to those of the company. However Meyer (2002: 8) argues that "people will exploit the gap between what we want to measure and what we can measure by delivering exactly what is measured rather than the performance that is sought but cannot be measured." Interviewee B2 gave this exact reason as to why traditional people management approaches hinder further innovation in their company.

> *"...at the end of the day when you're being measured on delivering something it easier for people to sit back in their box and just deliver what they are being measured on rather than the things that could really do something outside the box."* (Interviewee B2, Head of People and Culture, 17.05.2010)

Interviewee B1 agreed and added that incentive-based pay is counter to the culture needed within an organisation to support innovation for sustainability.

> *"...we've also got the issue of incentive-based pay which I have never supported because it works against risk-taking in my view. And I have yet to see the organization that's highly skilled in getting their incentive-based pay linked to objectives in the right way. That allows people to take risks in things that were not there six months ago, opportunities that weren't there six months ago when the agreement was reached."* (Interviewee B1, Head of Communities, 17.05.2010)

Hamel (2009) agrees that traditional approaches to managing people need to drastically change as most advances in the field of management in general occurred in the early 1900s. The structures, processes and techniques developed at this time have powered economic progress but the "foundations of modern management were laid by people" who were born before 1865 and the world today is much different that it was nearly a century and a half ago (Ibid 2009: 91). To create organisations that are fit for the future, Hamel (2009) and a group of academics came up with 25 critical priorities, with 10 identified as the most

critical. In the critical list many related to the management of people including reinventing the means of control, developing holistic performance measures, reducing fear and increasing trust.

7.9.2 Expanding organisational boundaries

An organisation's human competence is also believed to be limited by the traditional boundaries that companies currently erect around their organisations. Interviewee B1 refers to the human capital beyond this boundary as the *"terra cotta army"* – the untapped potential of society to achieve positive outcomes in co-operation with business organisations. The view that there is potential human competence available to business organisations which exists beyond traditional organisational boundaries is somewhat reflective of the ***phenomenon*** versus ***practice*** approach to the management of intangibles/IC. As a ***phenomenon***, human competence is viewed as an asset owned by firms to be managed and controlled to serve economic interests. As a ***practice***, human competence is viewed as a resource in which companies can mobilise to help them to achieve mutually beneficial outcomes. Interviewee B1 argues that currently the boundary business draws around this pool of resources is too close to the economic boundaries of the organisation.

7.10 Summary

The aim of this Chapter was to provide examples of how Company A, B and C are using their intangibles/IC to operationalise corporate sustainability practices into the various strategic levels of their organisation. Company D was used to compare and contrast, where relevant, the experiences of the other three case study companies.

The sustainability leader case study companies, based on Dunphy et al.'s (2007) phases, sit between the efficiency and strategic proactivity phases of corporate sustainability. They have achieved this by managing more than just their environmental and social performance and focusing solely on capital investment in building upgrades. They have taken a 'whole of company' approach to managing their intangibles in order to embed sustainable development into their business model. By managing their intangibles they have driven organisational changes within their own companies, as well as encouraging organisational change in their clients and competitors business models. People and their human capital, knowledge, skills, and ambitions have been identified as critical to operationalising sustainable development in the business context for the case study sector – the Australian property and construction sector. To push beyond the current limitations of their approaches to corporate sustainability will require taking a different approach to managing their intangibles/IC. This is discussed in greater detail in Chapter Eight.

"The best way to predict the future is to create it"

Peter Drucker

8 Discussion

Chapters Five, Six and Seven detailed the results and analysis of this research and commented on its relation to the literature. As such, a picture of this thesis's contribution to understanding the role of intangibles in operationalising sustainable development has already begun to be sketched out. This Chapter draws together and contextualises the findings contained within this thesis as a whole. This Chapter also presents the original framework to manage firms' intangibles, based on various stages of corporate sustainability. The framework focuses on the changing approach to managing intangibles adopted by firms in the transition from purely profit-driven enterprises towards sustainability-driven enterprises.

There are **three** primary parts to this Chapter. The **first** part of this Chapter discusses the key findings of this thesis including: the need for a shift in the discourse of intangibles (section 8.1); a paradigm-shift for the business case for sustainability (section 8.2); an inside-out approach to operationalising sustainable development which focuses on managing a firm's intangibles/IC (section 8.3); and how firms are managing their intangibles/IC to implement organisational change for sustainability (section 8.4). The **second** part of this Chapter focuses on the development of the framework to manage firms' intangibles. The framework outlines how approaches to identifying, measuring/valuing, controlling and reporting intangibles changes as a firm progresses through the various stages of corporate sustainability. The **third** part of this Chapter reflects more broadly on the ability of firms within the Australian property and construction sector to become sustainable enterprises. The research propositions outlined in Chapter One are also briefly re-visited.

8.1 A 'new' discourse is needed for intangibles

As outlined in Chapter Two (see section 2.2) the term *intangible* when used in a business setting has multiple meanings based upon the context in which it is used and the person who is using it. Dumay (2012) argues that the most influential interpretation in a business setting still stems from the field of financial accounting. This means the term *intangible* has a lingering connotation of a 'nice to have', but not as important as the tangible and/or financial resources of a firm as well as an association with being difficult or impossible to measure in financial terms. However, the empirical data collected in this thesis indicated

that, regardless of their firm's orientation towards corporate sustainability, respondents believe that their firm's intangibles have a business value and are material to its continued success. For the sustainability leaders this materiality extended to their environmental and social performance (see Figure 6.1). Firms in the Australian property and construction sector do not consider their intangible resources to in fact be 'intangible' in the traditional accounting sense (see section 6.2.1). All four of the case study firms were clear in their view that their intangibles are more than 'nice to haves', as were respondents in the first phase of the data collection. Intangibles were identified as critical resources of firms in the case study sector. The contradiction in discourse surrounding intangibles has important theoretical and practical implications for the business case for sustainability. This is discussed in greater detail later in this Chapter (section 8.2).

What is evident from the empirical results of this thesis is the finding that the term 'intangible', and its lingering connotations, does not adequately describe or reflect the nature of the intangible resources of firms in the Australian property and construction sector. However, when asked to identify an alternative term to encapsulate these material resources of their firms, the term 'intangibles' was oddly enough still identified by the respondents as the most suitable term available. This empirical finding leads to the conclusion that establishing an alternative term for these resources is not as necessary as **shifting the discourse of intangibles away from its financial accounting roots**. Dervitsiotis (2005: 940) agrees with this finding arguing that an "essential step" in challenging prevailing worldviews and create new ways of thinking is the "development of new distinctions in language." This allows the alternative way of interpreting the existing reality to be shared more widely and for "previous incompatibilities in our perception" to be removed (see Figure 8.1). This finding about the discourse of intangibles is also an important contribution to the ***phenomenon*** versus ***practice*** based approach to intangibles debate found in the intangibles/IC literature and is discussed next.

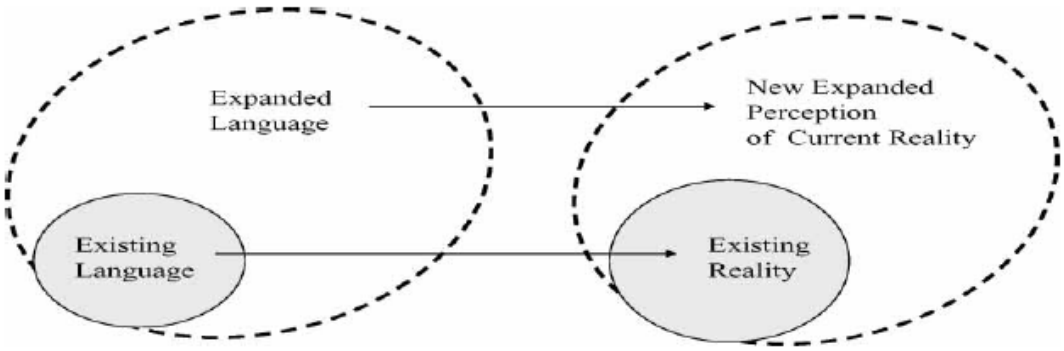


Figure 8.1: The impact of new discourse to improve perceptions of current reality (Dervitsiotis 2005: 941)

As discussed in Chapter Two (section 2.2.5) there is a debate in the intangibles/IC literature as to whether more research from a financial accounting perspective (see for example Pike et al. 2006) to develop precise definitions and more rigorous methods to test and validate existing intangibles/IC theories is needed (Marr and Chatzkel 2004) or if this "accountingisation" approach limits the full potential and application of the intangibles/IC concept (Dumay 2009a: 205). The findings of this thesis agree with the latter, especially in the context of operationalising sustainable development into practice. There is also much debate within the intangibles/IC literature about the lack of agreement over a universal taxonomy for intangibles (see section 2.2.2). This study of the Australian property and construction sector has found that the usefulness of the intangibles ***phenomenon*** is not reliant on a universal framework of intangibles or how they are connected to financial performance. The relevance of the ***phenomenon*** of intangibles in this sector is not about measuring a final endpoint or output but rather mobilising a firm's intangibles as an input to achieve organisational goals. This is the difference between taking a static approach versus a dynamic approach to understanding intangibles and their role in value creation (Kianto 2007). The findings of this research are therefore congruent with the group of academics in the IC/intangibles field, such as Dumay (2009a) O'Donnell (2006) and Mouritsen (2004; 2006), who argue that the way forward for the field is one which adopts a more critical approach and focuses on the ***practice*** of intangibles.

Shifting the discourse of intangibles/IC away from the more prevalent interpretation of intangibles as a ***phenomenon*** to the study of intangibles as a ***practice*** also makes a contribution to the corporate sustainability literature, particularly the business case for sustainability. According to Hahn et al. (2010) the dominant paradigm adopted in both the conceptual and empirical extant literature on corporate sustainability is the 'win-win' paradigm. The 'win-win' paradigm, however, is derived from a "purely economic perspective" (Ibid 2010: 218) and as a result environmental and social issues are only taken into account to the degree that they contribute to an enhanced corporate economic performance. This thesis argues for a new paradigm for the BCS. This is discussed further in the following section.

8.2 The business case for sustainability

Currently, as discussed in Chapter Two (section 2.4.4 and 2.4.5), the business case for sustainability literature adopts a ***phenomenon*** based approach to understanding intangibles by focusing on proving/disproving the benefits which will accrue to a firm's financial bottom-line. However, the empirical data in this thesis supports the conclusion, that for the sustainability leaders (Company A, B, C) in particular, there has been a discernable shift in the focus of their business case for sustainability from a "what are the

benefits?" to "how do we make it happen?" The business case has become less about proving direct links between corporate financial performance and environmental and social performance. This requirement has not completely dropped away, however, the focus of the sustainability leaders' business case is becoming more about how they mobilise and orientate their intangibles – i.e. their people, processes and relationships - towards improving their environmental and social performance. The sustainability leaders approach to understanding intangibles in the BCS is more characteristic of the ***practice*** based approach to intangibles rather than the ***phenomenon*** based approach to intangibles.

The finding and position of this thesis is that rather than trying to link the benefits of adopting a more sustainable approach to a firm's activities, particularly in relation to a firm's intangible resources, researchers in this field need to adopt the ***practice*** based approach to develop more narratives around how firms manage their intangibles to operationalise sustainable development. This shift in discourse from calculating benefits (output measures) to mobilising and managing resources (inputs for change) is important to help understand how firms progress through the various phases of corporate sustainability and re-orientate the focus of the conversation about the BCS away from costs and the financial bottom line. The case study data in particular also illustrated that this shift from the ***phenomenon*** to ***practice*** based interpretation of intangibles is particularly relevant at the efficiency stage of corporate sustainability, when the easy-wins of eco-efficiency have been accomplished and the short-term financial paybacks are not so apparent.

Barriers to understanding the role of intangibles in the BCS in the wider Australian property and construction sector, this thesis argues, may be linked to the lingering influence of the traditional financial accounting definition of intangibles. Much of the BCS literature mentioned in Chapter One (see section 1.1) currently tries to present the commercial benefits which accrue to an organisation's intangibles in the ***phenomenon*** based format. For example, numerous studies exist trying to prove direct links between sustainable buildings, staff productivity and company financial performance (Paevere et al. 2008; Wilkinson et al. 2011) or links between corporate reputation, corporate sustainability and company financial performance (Truscott et al. 2009; Surroca et al. 2010; Cho et al. 2012).

However, no previous empirical studies, prior to this one, have investigated how firms in the Australian property and construction sector identify and define their intangibles. The empirical data in this thesis has established that this is **NOT** how companies in the Australian property and construction sector tend to perceive their intangibles – that is they do not believe that their intangibles are: a. assets on the company balance sheet or b. connected to corporate financial performance in a universally true and/or specific way. As a result there is a tension between the business case for sustainability literature's intangibles as a ***phenomenon*** approach and industry practitioners' intangibles as a ***practice***

approach. This tension between intangibles/IC discourses and overcoming the barriers of the dominant 'win-win' environmental paradigm was anticipated in the development of the conceptual framework for this research and was discussed in Chapter Two (for example see section 2.4.5 and 2.7.1). This tension is illustrated in Figure 2.14.

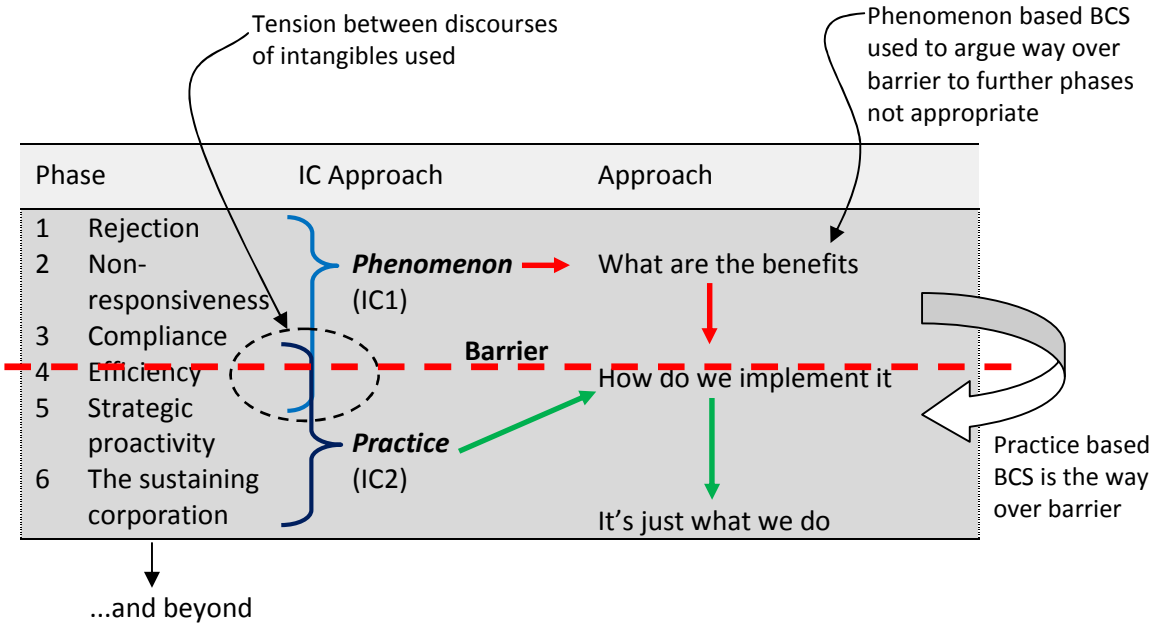


Figure 8.2: Tension in intangibles discourse in relation to phases of corporate sustainability

The empirical findings of this thesis support the argument that a new approach to arguing the business case for sustainability – which focuses on how companies can align and mobilise their intangibles towards implementing sustainability strategies is needed. This new approach argues that the corporate sustainability literature needs to shift away from the win-win paradigm. Adopting the ***practice*** based approach to intangibles in the BCS also supports the other findings of this research. In particular, that managing intangibles is necessary for firms in the Australian property and construction sector to operationalise sustainable development into all of the aspects of their organisation and create lasting organisational change beyond the project-level of the organisation. This is discussed further in the next section of this Chapter.

8.3 Operationalising sustainable development: From the outside-in to the inside-out

The empirical data results and analysis in Chapter Five and Six found that ***phenomenon*** of intangibles/IC is a relevant concept for the Australian property and construction sector regardless of a firm's current approach to corporate sustainability. However, the empirical

data has also shown that the sustainability leaders (Company A, B, C) progressed to Dunphy et al.'s (2007) strategic proactivity phase of corporate sustainability by mobilising and aligning their intangibles/IC towards the implementation of their sustainable development strategies. In doing so, they have progressed toward the creation of a more sustainable business model. This has implications for the corporate sustainability and environmental management literature which are discussed below.

In these bodies of literature operationalising sustainable development into a business model has tended to focus on managing the TBL impacts of a firm's products or activities. This thesis refers to this as the 'outside-in approach' to corporate sustainability (see Figure 8.3). In the 'outside-in approach' the natural and social environment are things to be managed by a firm in order to reduce its impact upon them and by doing so there is a financial benefit to the firm. This 'outside-in' approach to corporate sustainability and implementing sustainable development currently dominates the research agenda in the built environment literature (Glass and Dainty 2011). As outlined in Chapter Three (section 3.4.2) this means that the primary focus of businesses is at the project level of the firm (see Figure 3.5) and improving the environmental (primarily) and social impacts of the built environment. Glass and Dainty (2011) argue that the research agenda in the built environment sectors need to expand to focus on the corporate level of an organisation and the creation of more sustainable business models.

This thesis argues that an 'inside-out' approach to corporate sustainability will help foster the necessary shift in focus, from the project level to the corporate level of a firm, needed to help firms in the Australian property and construction sector to operationalise sustainable development into their business model. The 'inside-out' approach, in contrast to the 'outside-in', focuses on the management and mobilisation of firms' intangible resources to improve its TBL performance and support its continual progression through the various stages of corporate sustainability (see Figure 8.3).

Applying Suchman's (1995) three main types of legitimacy - pragamatic, moral and cognitive - helps to explain how this 'inside-out' approach to corporate sustainability might gain legitimacy as a concept and become institutionalised not only in the academic literature but also into practice. According to Jepperson (1991: 144) the term legitimacy denotes a shared cultural support for the "existence of a credible collective account or rationale explaining" certain practices of an organisation. Pragmatic legitimacy is instrumental and support for specific practices are linked to the practical consequences and outcomes for the direct parities involved (Suchman 1995; O'Dwyer et al. 2011). In relation to the practice of managing and mobilising intangible resources, the emprical data presented in this thesis has shown that organisations, regardless of their current phase of corporate sustainabilty, accept and appreciate the the practical or instrumental benefits of

doing so. This finding might be explained by the observation that many organisations in today's contemporary economy have transitioned from the so-called industrial era to knowledge-era. As previously discused in Chapter Two (section 2.1) a shared pragmatic importance of managing intangibles in a business context has already been well established. The pragmatic legitimacy of the practice of managing intangibles has naturally evolved into a form of moral legitimacy. Moral legitimacy or support for a practice is achieved when it is "deemed the right thing to do" (O'Dwyer et al. 2011: 11). The concept of appropriately managing a firm's human resources or business relationships , for example, is generally accepted as the most effective way of maintiaining and improving society and its well-being. However, a pitfall of the current moral legitimacy is the associated cognitive legitimacy, in relation to financial performance and financial wealth, which accompanies it. Coginitive legitmacy occurs when practices are taken for granted as being appropriate and desirable (Suchman 1995; O'Dwyer et al. 2011). In order for organisations to be successful in their attempts to continually progress through the various stages of corporate sustainability, via the management and mobilisation of intangibles or 'inside-out' approach, their moral and cognitive legitimacy for the practice of managing intangibles needs to be challenged. However, these two forms of legitimacy are currently informed by the underlying pragmatic legitimacy, that the rationale for managing intangibles is to achieve superior economic growth and firm performance. As previously discussed in section 8.1, legitimacy for the underlying assumption about the instrumental value and practical consequences of managing intangibles has been shown to be an outdated and contested construct. This further supports the finding that a new discourse, in the business context, is needed for intangibles.

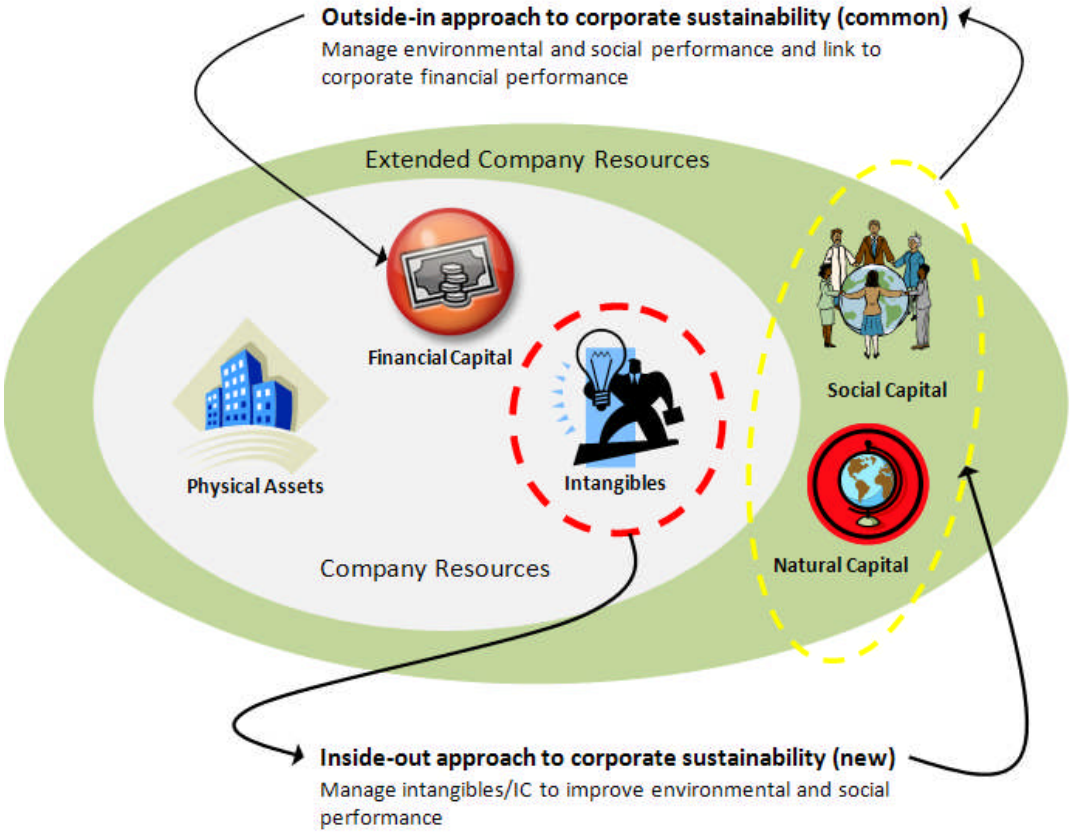


Figure 8.3: Outside-in versus inside-out approach to corporate sustainability

For meaningful and lasting change sustainability also needs to be embedded into all of the strategic levels of organisation – from the project level through the individual business units up to and including the corporate and network level of a business organisation (see Figure 8.4). Glass and Dainty (2011) note that although the trend in the wider corporate sustainability literature is shifting towards studying organisational change and embedding sustainability within companies, research in the built environment sector still tends to focus narrowly at the product or project level. The sustainability leaders (Company A, B, C) studied in this thesis have realised that owning or developing the 'greenest' or most sustainable buildings is still not enough to achieve the intended goals of sustainable development and create a sustainable business model. Sustainability also needs to be embedded into all the functions of a property and construction firm for any organisational changes to persist beyond an individual iconic green building project.

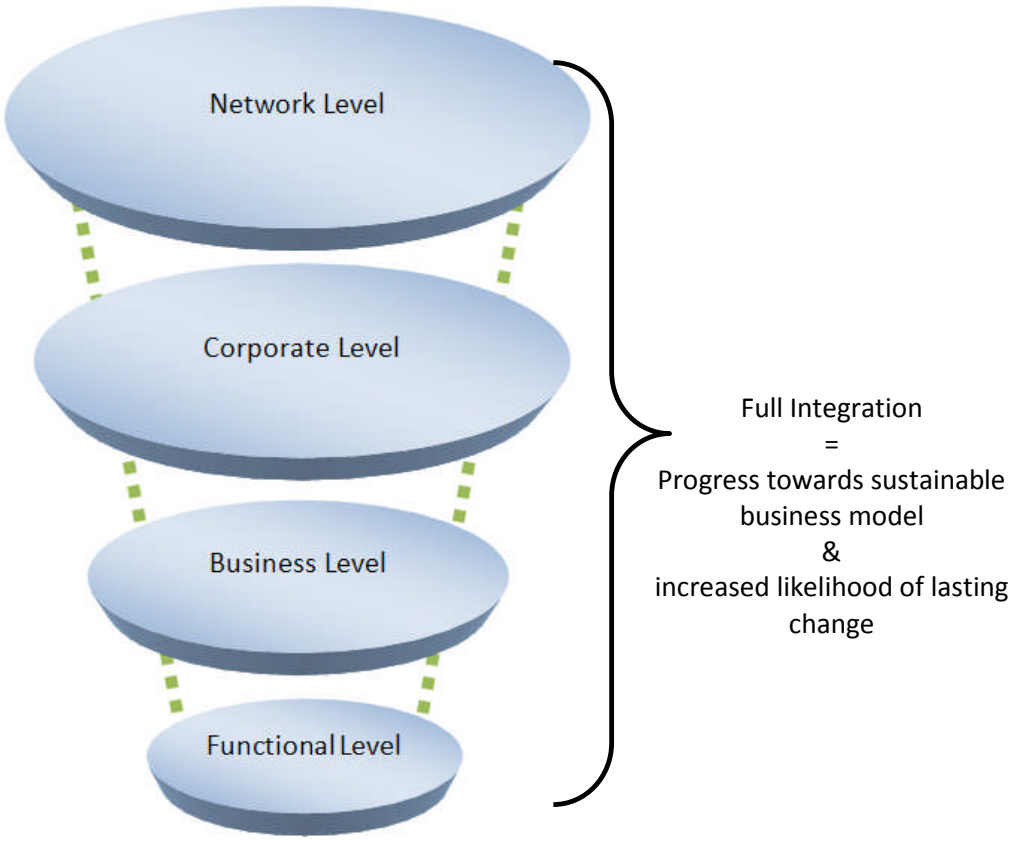


Figure 8.4: Integrating sustainable development into all levels of the organisation

In addition, sustainable development related values and aims need to be embedded into all of the resources of a firm (Bertel et al. 2010). This thesis has focused on the intangible resources of a firm. The intangibles/IC taxonomy identifies all of the various areas of a firm's resources which need to be considered in order to successfully operationalise and fully integrate sustainable development into their business model. As argued above, in relation to the 'outside-in' approach, there is a tendency for firms to focus on managing the environmental and social aspects of their organisation. However, the theoretical and empirical data presented in this thesis has shown that companies also need to integrate a sustainability logic into managing their people (human competence), processes and leadership (internal resources), networks (business relationships) and culture (corporate identity) in order to progress through the various phases of corporate sustainability (see Figure 8.5 below). Lopez-Gamero et al. (2011) argue a similar point, in particular, that environmental management frameworks tend to focus on managing relational capital (i.e. reputation and community stakeholders) only and not a firm's other areas of intangibles (namely its human and structural capital). This research adopts a different intangibles/IC taxonomy than Lopez-Gamero et al. (2011) whose theory is based on the traditional intangibles/IC taxonomy (see Figure 2.3). This thesis found that Allee's (2000)

intangibles/IC taxonomy to be more representative of the intangibles in a sustainable business model and well received by the sustainability leaders (Company A, B, C).

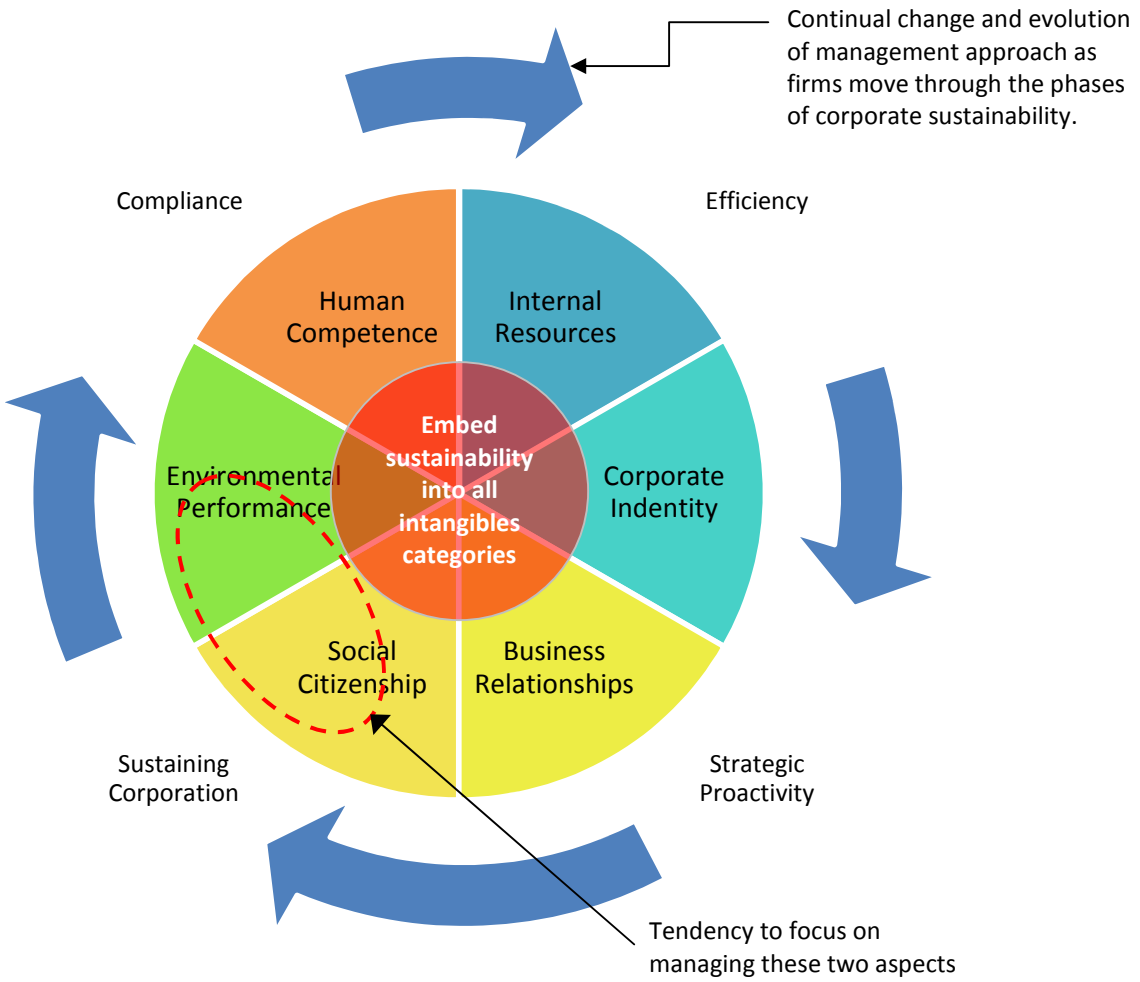


Figure 8.5: Integrating a sustainability logic into all of a firm's intangibles

As mentioned earlier in this Chapter, another finding of this research is that as companies progress through the stages of corporate sustainability their approach to the management of their intangibles changes (see also Figure 8.5). This finding underpins the development of the framework to manage firms' intangibles which is discussed in section 8.5. The theoretical propositions underlying the ***practice*** based approach to intangibles/IC (see Table 2.2) help to explain this finding. For example, according to Mouritsen (2004: 262) the ***practice*** based approach to intangibles is based on the position that "knowledge is never adequate; it is never reached; and it can always grow...knowledge produces its own demise, because it is used to question knowledge." This means that when firms progress to further stages of corporate sustainability they discover what might have been true with regard to

managing their intangibles in one phase, may not be true in another. For example, a firm might implement sustainability KPIs for its employees, as a strategy to operationalise sustainable development into its business model. However, this people management strategy only serves to shift firms to the efficiency or strategic proactivity phase of corporate sustainability. As the firm's knowledge of sustainable development matures, as was found with the sustainability leaders (particularly Company B), they begin to understand the limits of an efficiency approach, as well as how their current approaches to managing their intangibles (in this case their human competence) presents a barrier to overcoming efficiency. Chapter Two (section 2.3.2) highlighted that in a business context sustainable development is a malleable and fluid concept. Its definition and interpretation continues to be contested and redefined**. This thesis argues that paying attention to how a firm manages its intangibles will allow it to continually learn and change in order to respond to the changing demands of operating a business in our current era of sustainable development.** Burnes (2011: 134) argues that the "speed, magnitude, unpredictability" and "importance of change have increased considerably" during this era and so the ability to continually learn and change are important to the continued survival of a business organisation. The empirical data results and analysis of the second phase in this thesis found that firms in the Australian property and construction sector are managing their intangibles in order to drive organisational change for corporate sustainability. This is discussed further in the next section.

8.4 Organisational change and strategic readiness

Few doubt the importance of organisational change. Organisational change is both "pervasive and persistent" (Hammer and Champy 1993: 28) and a normal condition of business organisations. As discussed in Chapter One and Two, a number of authors argue that business organisations need to implement significant organisational change in order for sustainable development to be achieved. **The empirical data in this thesis found that the sustainability leaders are managing their intangibles/IC to drive organisational change for corporate sustainability across the various strategic levels of their organisations.** This finding is also supported by a number of previous studies which argue that organisational learning and change occurs through the management of intangibles/IC (Johanson et al. 2001; Kujansivu 2008; Lonnqvist et al. 2009). A number of strategies, in relation to each category of the intangibles/IC taxonomy, were discussed in Chapter Seven. Based on this empirical data it is possible to identify the key categories of intangibles/IC which support organisational change at each strategic level of a firm. This is illustrated in Figure 8.6. However, it should be noted that the categories identified at each strategic level are not exclusive, but rather the most prominent. The role for implementing organisational change

played by each of the categories of intangibles/IC is discussed in greater detail later in this section.

Another key finding out of the empirical data in this thesis, which is relevant to mention in relation to organisational change, is what Kaplan and Norton (2004b: 55) refer to as the "strategic readiness" of intangibles. The strategic readiness of an intangible according to these authors relates the degree in which a specific intangible is or is not able to contribute to company performance and strategy implementation. However, Kaplan and Norton's (2004a) rationale for assessing the strategic readiness is to allow for intangibles' contributions to company performance and strategy to be measured. This thesis adopts the concept in a slightly different way to explain the role of intangibles/IC in progressing firms to more sustainable business models. The empirical data supports the conclusion that firms can be limited in their ability to implement organisational change for sustainable development based upon the current state – or strategic readiness - of its intangibles (see Figure 8.6). The strategic readiness of intangibles in this context is not so much concerned with measuring intangibles contribution to company performance and strategy. It is concerned with acknowledging that each aspect of a firm's intangibles may be at various difference levels of acceptance and understanding of corporate sustainability. This variation in readiness to implement sustainable development strategies can be a key barrier for the organisation wishing to make changes to its own business model. The case study data in Chapter Seven highlighted a number of examples – such as business relationships (tenants) who are at earlier stages of corporate sustainability impeding the environmental performance of the sustainability leaders, not all employees of a firm having the necessary competencies for a more innovative approach to sustainability or firm's not having the internal governance structures to support and create lasting change. It is beyond the scope of this thesis to develop a set of criteria to assess the strategic readiness of each category of intangibles/IC, however, this is an interesting area for future research. This is discussed in Chapter Nine (section 9.5.6).

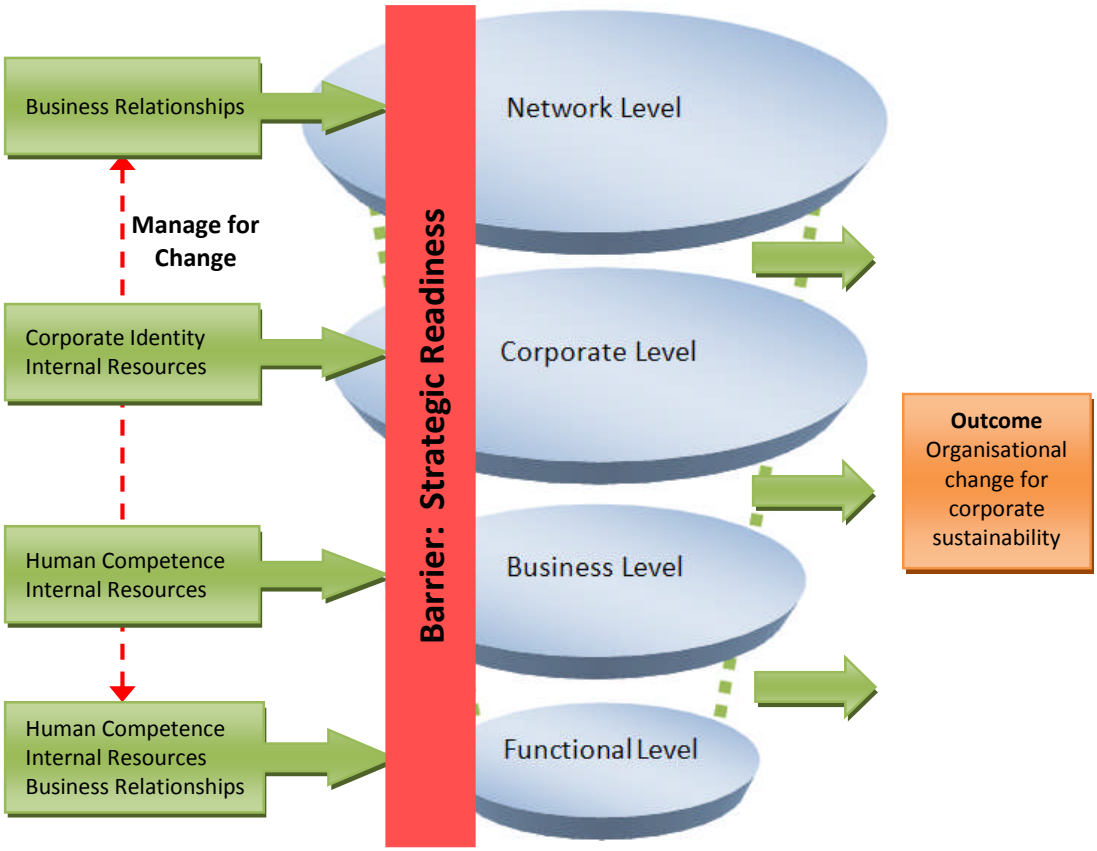


Figure 8.6: Driving change at the various strategic levels of an organisation

From a social constructivist perspective, organisational change can also be delivered through a change in discourse as this reflects a change in the beliefs and cultural norms of the organisation. **The theoretical and empirical data collected in this thesis supports the finding that an ongoing evolution in perspective with regard to the approach adopted for the management of intangibles/IC is what will help drive organisational change towards more sustainable business models.** The framework to manage firms' intangibles (see section 8.5) highlights how a firm's approach to managing its intangibles changes at the various phases of corporate sustainability in relation to each aspect of the management framework: indentifying, measuring, valuing, controlling, and reporting. While others have previously noted that managing intangibles leads to organisational change (Johanson et al. 2001; Lonnqvist et al. 2009), **the unique aspect of the framework in this thesis** is the recognition that, in practice, approaches to managing a firm's intangibles are different in order to progress from compliance to the efficiency and strategic proactivity phases than there are to progress beyond these phases. This framework is discussed later in section 8.5.

The empirical data, primarily in relation to the case study data presented in Chapter Seven, supports another important finding of this research which relates to research question 3. **It was observed that each category of intangibles/IC has a primary role to play in regard to operationalising sustainable development into practice and supporting organisational change.** The various roles identified include a motivating, supporting, implementing and performance role. Figure 8.7 below indicates the primary role each category of intangibles/IC plays.

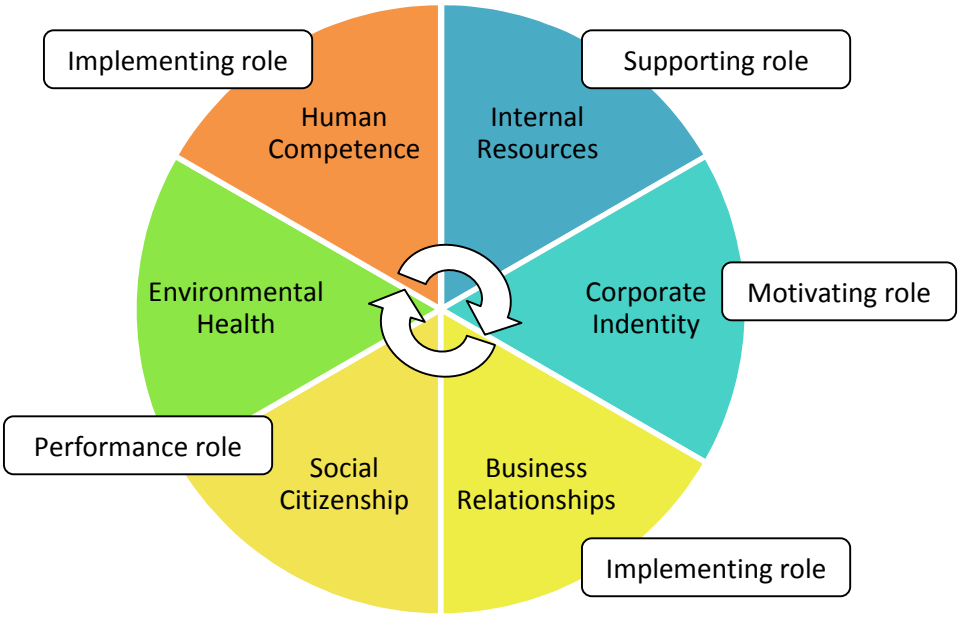


Figure 8.7: Intangibles/IC primary strategic role for corporate sustainability

However, it is important to note that these are not exclusive roles played by each category of intangibles/IC, and as previously noted in Chapter Two (section 2.2.1) and Chapter Five (section 5.2.1) a key limitation of using a categorisation approach to define intangibles is that a number of indicators or sub-elements of the main intangibles/IC categories can potentially fit across a number of the domains. This is a common critique of the intangibles/IC taxonomy in the literature (Beattie and Thomson 2007) and many conceptual and empirical studies have done work to develop methodologies to avoid this, however, as mentioned in Chapter Two (section 2.2.1) the categorisation approach was deemed the best available approach for the purpose of this thesis.

It should also be noted that these roles identified in Figure 8.7 are based on the empirical data from the sustainability leaders (Company A, B, C), who are currently performing somewhere between Dunphy et al.'s (2006) efficiency/strategic proactivity phases of

corporate sustainability for most aspects of their business activities. Further research would be needed to see if the same primary roles are relevant for achieving different phases of corporate sustainability. However, it is hypothesised that their roles would be similar, but approaches to managing the intangibles would be different. The next sections of this Chapter briefly discuss each category of the taxonomy and its role, as identified in Figure 8.7, in operationalising sustainable development into practice.

8.4.1 Corporate Identity – Motivating Role

The empirical data in Chapter Six and Seven clearly indicated that creating a corporate identity which is congruent with sustainable development is an important motivating factor for companies to operationalise sustainable development into their business model. The corporate identity does not necessarily have to be explicitly about being a leader in corporate sustainability. The empirical data also showed that having a corporate identity linked to innovation, leadership and/or trust was also ideal. For example, for Company D, their corporate identity of being the 'builder of choice' has been influential in their progress towards the efficiency stage of corporate sustainability.

This thesis takes the position that research in the built environment literature which continues to focus on the financial costs and paybacks of eco-efficiency strategies, such as the recent study by Prior and Faria (2010), continues to ask the wrong question – i.e. does green pay? This position is supported by the discussion about the BCS found earlier in this Chapter (section 8.2). The research in the built environment literature needs to widen its scope beyond the costs and benefits of managing for sustainability and start addressing, for example, what the current corporate identities of property and construction sector firms are and how these can be modified to support the implementation of sustainable development strategies or alternatively how sustainable development can be integrated into a firm's existing corporate identity.

8.4.2 Internal Resources – Supporting Role

The internal resources of firms play a supporting role when implementing sustainable development into a business model. For example, a lack of accountability structures and processes to integrate the environmental management system into day-to-day activities was hindering its use at Company D. On the other hand, at Company B the development of internal resources in the form of a property and construction specific eco-footprint software not only supported the implementation of sustainable development into their own company, but was also supporting the implementation of sustainable development into the design procedures and processes of their tenants. Governance structures at the corporate level of the organisation were identified by all of the sustainability leaders (Company A, B, C) as the most important internal resources needed to support the implementation of sustainable development into the business model. Corporate

management or board level support and endorsement of the sustainable development strategies was seen as vital for success at all three of the sustainability leaders. Azapagic (2003), Petrovic-Lazarevic (2008) and Smith and Sharicz (2011) also agree that the executive level management's commitment to the company corporate sustainability agenda will help support its implementation. The role of the board and corporate level management is discussed in Chapter Nine (section 9.5.1) as an area of future research.

8.4.3 Human Competence – Implementing role

The empirical data in both phases of the data collection clearly indicated the importance of people, not only as the most important resource of a property and construction sector company, but also as the 'implementers' of sustainable development into a business model. A number of previous studies, such as De Chiara and Spena (2011), Bertel et al (2010), Hatch and Dyer (2004), and Daily and Su-chun (2001) have also concluded that people are the vital ingredient to the implementation of sustainable development in a business organisation. At the project level, for example, the individuals on the project team were identified as the key reason behind Company C's successful outcome in creating its cost-effective world leading green building.

Individual characteristics of people, such as their knowledge levels and personal values and beliefs, can help or hinder implementation of sustainable development as can the approaches adopted to manage and control them. Approaches to the management of people and its impact on achieving sustainable development are discussed in greater detail below. People are also seen as one of the greatest untapped intangible resource available to implement sustainable development beyond the efficiency stage of corporate sustainability. Supporting and encouraging innovation and personal growth is an important challenge for business organisations who want to progress to further stages of corporate sustainability.

Wilkinson et al. (2001) also highlighted the important role of human capital in corporate sustainability and agrees with the finding in this thesis that approaches to people management need to shift to foster the growth and development of employees. Drucker (1999) argues that the biggest management challenge for business in the 21st century is how to overcome the legacy of industrial age where labour was seen as a cost to be minimised, often by increasing worker productivity. This approach to people management has also been noted as a characteristic of firms in the non-responsive/compliance stages of corporate sustainability (Dunphy et al. 2007). While the addition of sustainability-related KPIs is a notable achievement by the sustainability leaders (Company A, B, C) this is still very much a traditional approach to managing people. Firms are still using tools developed in the industrial age to manage people and applying them to manage people in the knowledge era. Approaches developed to get maximum efficiency out of human effort (labour) are not

necessarily relevant to getting the most out of human competence (knowledge). Similarly approaches used in the knowledge era to get the most out of technical expertise (knowledge) may not be best suited to support and encourage the innovation and personal growth of people which is necessary to achieve the more radical visions of a sustainable enterprise and create paradigm shifts in the dominant global economic system.

Dahlgaard-Park (2012: 137) argues that existing theories or frameworks for managing people have 'ignored' the spiritual/ethical dimension of satisfying human needs. Dervitsiotis (2005) agrees arguing that current purpose of human resource management approaches is to exploit human resources to serve economic purposes. The findings in this thesis support that argument that a more 'spiritual' approach to managing people is needed to support a sustainable economy. A spiritual approach will develop the 'human-being' and not just their technical expertise. This is illustrated in Figure 8.8 below.

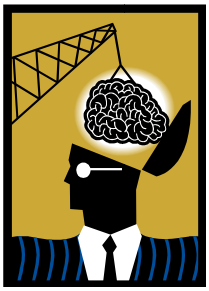
Context	Approach to People Management	
Industrial Economy		**Muscle Power** Developing the 'physical capacity'
Knowledge Economy		**Brain Power** Developing the 'employee'
Sustainable Economy		**Spiritual Power** Developing the 'human being'

Figure 8.8: Changing approach to the management of human competence

Hamel (2009: 97) agrees with the position of this thesis, arguing that in order to create adaptive, innovative and engaging business organisations academics and practitioners need to "humanise" the language and practice of management. Table 8.1 outlines the differences in the current language of management and the management language needed.

Current Management Language	*Efficiency, Advantage, Value, Superiority, Focus, Differentiation*
Management Language Needed	*Honour, Truth, Love, Justice, Beauty*

Table 8.1: The language and practice of management

In light of the findings about human competence in relation to the case study sector, a key recommendation made in Chapter Nine in relation to human resource management is training approaches adopted by firm in the case study sector (section 9.3.3)

8.4.4 Business Relationships – Implementing Role

Business relationships were also found to have an important implementation role, however, in a slightly different way to human competence. The sustainability leaders have found that in order to achieve and exceed the efficiency stage of corporate sustainability they have had to bring their business relationships on the journey with them. For example, Browne and Frame (1999) argue that sustainable buildings need sustainable occupants. Company B has found that sharing its knowledge base and intellectual property about sustainable design with its tenants is vital to implementing and achieving the best possible outcomes in its property portfolio. Velaquez et al. (2011: 37) agree that no one person or organisation can hold "all" the knowledge needed for reaching sustainable development and that collaboration and knowledge sharing is necessary for business to make progress towards achieving sustainable development.

Similarly no one company can achieve sustainable development on its own. For example, to complete its 'commercially viable' 6 star Green Star building, Company C had to work with material suppliers to make lower impact building materials available and affordable in the Australian market. This has resulted in products, such as recycled particleboard and low-emission medium density fibreboard (MDF), which were not available in the Australian market five to six years ago, being readily available now. Allenby (1999) argues that no one organisation can call itself a sustainable organization when it is immersed in an unsustainable global market. Allenby (1999)'s argument further supports the finding of this thesis that business relationships play an implementing role in operationalising sustainable development into practice. Organisations need to change their own business models, but changes in the wider system in which they operate also need to be implemented.

8.4.5 Environmental Health and Social Citizenship – Performance Role

It was clearly indicated by the respondents at case study firms A, B and C (the sustainability leaders) along with some of the phase one interviewees (particularly respondents from firms also identified as sustainability leaders) that they consider their environmental and social performance to be part of their intangibles.

Currently the environmental and social categories of intangibles primarily play a performance role in implementing sustainable development. These are the categories where performance targets and indicators are most commonly developed and reported on. However, the social category of intangibles is entering into a potentially interesting state of transition. As discussed in Chapter Seven, approaches to the identification of stakeholders and the role they play in a company is being explored to understand their potential implementation role (see section 7.9.2). The expansion of traditional organisational boundaries to identify the intangibles of a firm is also discussed further in section 8.5.1.

The next section of this Chapter discusses a key outcome of this thesis – the framework to manage firms' intangibles.

8.5 Framework to mange firms' intangibles

As discussed earlier a key finding of this thesis is that as firms progress through the various phases of corporate sustainability their approach to managing their intangibles changes. This changing approach to managing intangibles versus phase of corporate sustainability comparison is the core structure of the framework developed in this second part of Chapter Eight. The empirical data results and analysis presented in Chapters Five, Six and Seven are used to help sketch out the changing approach to the management of intangibles, particularly around the compliance, efficiency and strategic proactivity phases of corporate sustainability. Extrapolations have been made beyond these phases of corporate sustainability and, where possible, are grounded in the theoretical literature on sustainable business models or suggestions from the research participants in this thesis.

According to Heisig (2009: 4) a framework can be understood as "an instrument to structure complex problems and a starting point for the generation of alternatives for action". The framework developed in this Chapter is not intended to be a prescriptive tool or model for firms to implement a management system. Rather it is a depiction of how the management of intangibles and corporate sustainability fit together and is **a key theoretical contribution to knowledge of this thesis**.

As discussed in Chapter Two (see section 2.7.2) the focus of the empirical investigation in relation to this framework was based on the case study firms' experience in the efficiency, strategic proactivity and sustaining corporation phases of Dunphy et al.'s (2007) model. It

was assumed and then later confirmed that all of the case study firms exhibited signs of at least the efficiency stage of corporate sustainability. The framework is shown in its entirety in section 8.5.5 and outlines how firms identify, measure, value, control, and reports their intangibles/IC as they progress through the various stages of corporate sustainability. First however, each aspect of the management framework is discussed in sections 8.5.1 to 8.5.4.

8.5.1 Identify

The conventional approach to identifying intangibles is based upon the traditional neoclassical economic boundaries of a firm. Typically intangibles represent assets with future economic benefit over which the company has control or goodwill which represents any premiums paid above fair market value for company acquisitions (Canibano et al. 2000). This conventional approach is highly influenced by traditional financial accounting practices (see also section 8.5.4) and conceptualises intangibles as a ***phenomenon*** which needs to be measured and linked to company financial performance (Mouritsen 2004; Mouritsen 2006).

As discussed earlier (section 8.1) the accounting-based approaches to the identification of intangibles generally did not reflect the entire story of how firms in the case study sector identify their intangibles (see also Chapter Five and Six). The findings of this thesis also support Dumay's (2012: 12) argument that the "grand narrative" in the intangibles literature, which defines intangibles as the difference between a firm's market and book value, is empirically unproven. Allee (2000) agrees adding that contemporary intangibles research is confining itself within frameworks that are still very much rooted in industrial age thinking. This is evident in the implicit assumptions about the nature of a firm and its boundaries which artificially separate it from social and environmental systems (Ibid, 2000). However, the traditional intangibles/IC taxonomy, as a means to identify the intangibles of firms who identified with the knowledge economy concept, was found to be relevant (see Chapter Five, section 5.2.1).

The empirical data found that once firms become embedded in the efficiency phase and have started to progress to the strategic proactivity phase of corporate sustainability, the concept of materiality is used to identify their intangibles. The adoption of the materiality approach is undoubtedly influenced by the uptake of voluntary corporate sustainability reporting during these phases (see section 6.2.1). Another observed change which occurs as firms occupy these phases of corporate sustainability is that they redefine their organisational boundaries to include environmental and social systems as part of their intangible resources (see Figure 6.1). This means that as firms make progress towards implementing more sustainable business models the most influential and widely applied intangibles/IC taxonomy becomes limited in its depiction of a firm's intangibles. As anticipated prior to the data collection, Allee's (2000) taxonomy more accurately reflects

the intangibles of a firm which is embedding sustainable development into its business model (see Figure 8.9)

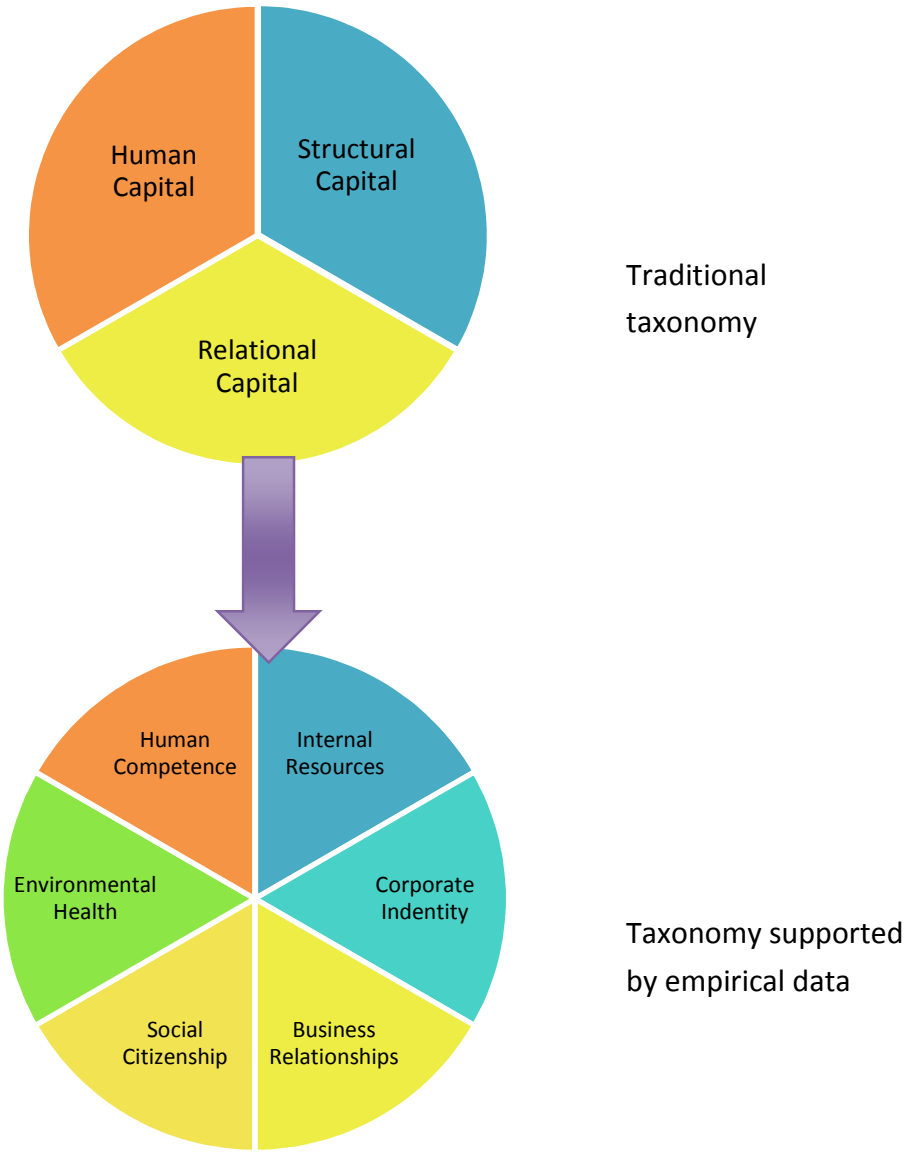


Figure 8.9: Intangibles taxonomy for Australian property and construction sector firms

While the materiality approach to identifying intangibles demonstrate progress towards more sustainable business models, further changes to the identification of intangibles are needed for sustainable business models to by fully realised. The position of this thesis is that these changes will continue in relation to the organisational boundaries of a firm. For example, Santos and Eisenhart (2005) argue that firms actually have four kinds of organisational boundaries which include: efficiency, power, competence, and identity. The power and competence boundaries are the two boundaries which could impact on how

firms' identify their intangibles. Changing the power boundary may result in stakeholders taking on a different role in an organisation. For example, rather than identifying local communities as an intangible resource to be managed they may shift to be seen as a business partner and collaborator (De Chiara and Spena 2011). As suggested by respondents at Company B, changing the boundary of a firm may result in a whole new category of human competence, beyond employees, available to a firm (see section 7.9.2).

The various approaches to the identification discussed in this section are illustrated in Figure 8.10 in section 8.5.5. The next section focuses on approaches to measuring/valuing intangibles.

8.5.2 Measure/Value

The shift from the ***phenomenon*** to the ***practice*** based approach to intangibles/IC is most evident in relation the measuring and valuing of intangibles. According to Mouritsen (2004: 262) current approaches to understanding intangibles/IC are fixated on developing "output" measures and indicators for intangibles. As discussed earlier in this Chapter this traditional approach to measuring and valuing intangibles, focused on the development of universal truths and direct links to financial performance (section 8.1), was identified as an outdated and irrelevant approach to measuring and valuing intangibles for firms across the Australian property and construction sector. Intangibles are not viewed as 'capital' or 'assets' of a company but rather resources which help it to achieve its strategic purpose. Additionally the prospect of a framework to measure or monetarise intangibles to be included in a firm's balance sheet had little appeal for most respondents in this study.

However, the results of this thesis do not support the conclusion that the measurement of intangibles should be abandoned altogether as indicators can and are being developed to assess their performance. Rather the findings agree with Mouritsen (2006) who takes the position that the measurement of intangibles should be seen as a means and not as an ends. This approach to measurement is particularly relevant as firms shift beyond the easy wins of eco-efficiency and their confidence to tackle the less financially tangible corporate sustainability issues increases (see Chapter Seven, section 7.2). To address the measurement of intangibles the sustainability leaders (Company A, B, C) have adopted an approach whereby they seek to create indicators to make the 'intangible more tangible' (section 6.3.5). Generally, the intended use of the measurement data collected is for strategic decision making, setting and assessing performance targets, organisational learning and CSR/sustainability reporting.

A tension to monetarise intangibles continues to persist, highlighting that the transition between approaches is not a clean, straightforward leap. There is still an underlying pressure to link intangible value creation as an output to corporate financial performance. In the absence of the ability to directly link intangible value creation to corporate financial

performance firms in the sector have started to indirectly link intangible value creation to financial performance using a discourse of risk minimisation and/or risk avoidance. Those firms which are more strategic in their approach to corporate sustainability, such as Company A, B, and C, tend to use a more balanced narrative of risk and strategy to indirectly link intangible value to financial performance. There is also a notable use of the discourse of *shared value* by the sustainability leaders, particularly when they are discussing the social dimension of their TBL sustainability performance. Dumay's (2011: 344) case study of an Australian public sector land and property authority also found an ongoing tension to link intangible value creation to financial measures. However, in the absence of being able to develop a definitive set of measures the organisation was communicating its performance and progress by "narrating the story" of how their intangibles/IC are "mobilised" (Ibid 2011: 348).

To push beyond efficiency and fully embrace the strategic proactivity phase of corporate sustainability the measurement of intangibles needs to be approached by firms as an "input that starts action" rather than as an output which captures the inherent dimensions of the phenomenon and provides certainty about its value (Mouritsen 2004: 257). The aim is not to get an accurate picture of reality for descriptive purposes (i.e. as an output) but rather as an input to help "transform reality" and help organisations direct their intangibles "towards purposes that involves being able to make a difference to somebody or something" (Mouritsen 2004: 262). Measuring and valuing intangibles in this phase of corporate sustainability helps motivate firms to take action and do something as well as change their perception of the worth of intangibles. To push beyond the strategic proactivity phase of corporate sustainability, however, this thesis argues that a larger paradigm shift in the current market-based economy needs to occur.

Elkington (2001) argues that a truly sustainable business should aim to support the growth of tangible and intangible forms of capital, including human, cultural, natural and social in order to improve the health and well-being of both the planet and all its inhabitants (see also Pearce 2003; Pearce 2006). Tilley and Young (2009: 81) agree, however, they add that the current market-based economy can be "hostile" towards these "nonfinancial goals". The thesis argues that in order for firms to meaningfully be labelled as a sustaining corporation or sustainable enterprise the market-based economy, or some alternative of it, needs to be created in order to appreciate intangibles being valuable in their own right and not because they can be linked to financial performance. It is beyond the scope of this thesis to investigate alternative economic systems, however, the proposition being made is that a system which sees the creation of human capital or environmental capital by a firm as equal to the creation of financial capital, while utopian, would be ideal. However, this is an area where future research is still needed.

The various approaches to the measuring and valuing intangibles across the phases of corporate sustainability discussed in this section are summarised in Figure 8.10 in section 8.5.5. The next section focuses on approaches to controlling intangibles.

8.5.3 Control

As discussed in Chapter Two (section 2.7.4) management control of intangibles generally refers to actions at the strategic level of an organisation to direct its nonfinancial resources towards the implementation of its strategies (Zhou and Fink 2003; Lonnqvist and Kujansivu 2007). The control section as a result focuses on the various strategic approaches firms adopt as they progress through the phases of corporate sustainability.

In order to shift from the compliance phase of corporate sustainability towards efficiency, the competitive or positioning strategic approach (see Porter 1980) was instrumental. The sustainability leader case study firms were driven initially to improve their sustainability performance, again primarily environmental, in order to achieve competitive advantage in the marketplace. Also their competitive strategies were focused at the building or project level of the firm. The limitation of the competitive strategic approach to operationalise sustainable development is that while social and environmental performance may "provide a basis for competitive advantage" by creating outcomes "that differentiate a firm from competitors" (Hillman and Keim 2001: 127), there is no guarantee that the firm's actions cannot be copied easily by competitors. The empirical data showed clear evidence of this occurring in relation to green building ratings in the Australian property and construction sector. Additionally, the time horizon of sustained competitive advantage gained from adopting this competitive strategic approach is much less than when the RBV theories which underpin it were conceived, due to the current "pace of technological advance, the fluidity of the workforce and the effects of globalisation" (Pike et al. 2006: 236). These authors argue that what once might have resulted in many years of competitive advantage might now only be one to two years or a matter of months.

As the sustainability leader case study firms have shifted from the efficiency to the strategic proactivity phase of corporate sustainability they have begun to adopt a more competitive/competency based strategic approach. They have also adopted this strategic approach to overcome some of the barriers of eco-efficiency particularly when the so called easy wins of efficiency have been achieved. The competency based strategic approach, Mouritsen (2004: 12) argues, sees firms focus on managing and developing their capabilities over the long term in order to "manoeuvre" the continually changing market. Rather than defining its strategic approach based on the needs of the market, they focus on the growth and development of their intangible resources. This competency based strategic approach was a key finding in the empirical data previously discussed in this

Chapter in relation to the "inside-out" approach to operationalising sustainable development in Australian property and construction sector firms (see section 8.3).

For companies to progress beyond the strategic proactivity phase of corporate sustainability they may need to re-examine their organisational purpose. They need to shift their focus from making their firm more competitive, powerful and profitable to one which is fair, equitable and sustainable (Young and Tilley 2006). The suggestion in this thesis is that a shift towards a competency/co-operative strategic approach may facilitate this. According to Child et al. (2005) co-operative strategy is used by firms when they attempt to achieve their objectives through cooperation with other firms rather than competition. However, the overall aim of the alliance is still to improve competitiveness beyond the co-operative alliance. For example, companies may be driven to create defensive alliances against dominant firms or, offensive alliances intended to secure stronger position within the industry/reduce opportunities for new entrants (Child et al. 2005).

While the notion of co-operative strategy is not new, what is new in this thesis is the proposition that the cooperative strategy needs to be directed at achieving sustainable development and not at achieving superior financial performance or making powerful firms richer and more powerful. Co-operative alliances could, however, be driven to force out unsustainable firms or reduce opportunities for unsustainable firms to enter a market. The co-operative strategy can also help companies who lack particular competencies or resources to achieve sustainable development. For example, inter-organisational knowledge sharing was identified as a key enabler to improving sustainability performance across the industry. The sustainability managers interviewed indicated that they all tend to share information – a sort of friendly competition. Even at Company D examples of inter-organisational sharing occurred, as their cost estimators met monthly with estimators from other firms to share experiences and knowledge gained on costing projects. Specifically in relation to smaller firms and SMEs Jenkins (2006: 254) also found that sector specific "CSR learning networks" would help SMEs share and learn from sustainability leaders and champions.

To support the transitions in strategic approach, how a firm controls its intangibles also needs to be considered. For example, should firms consider their human competence an asset to be managed and controlled for maximum efficiency or a resource to be nurtured and encouraged to takes risks and innovation. The old way of thinking is that intangibles are a resource to be exploited and managed for financial gain through sustained competitive advantage. Pike et al (2006: 236) argue that the contributions of resource-based theorist in 1980s and 1990s, such as Barney (Barney 1986), Prahalad and Hamel (1990) and Peteraf (Peteraf 1993), "assumed that the desired outcome of management is sustainable competitive advantage for the company" and that "superior company

performance is obtained through the deployment of superior resources". A more progressive business model with a sustainability orientation should view its intangibles, and particularly its business relationships, community stakeholders and employees, not as a resource to be controlled and exploited but as partners with whom they engage, enhance and co-create value (De Chiara and Spena 2011). Approaches to people management were also previously discussed in section 8.4.3.

The various approaches to controlling intangibles discussed in this section are illustrated in Figure 8.10 in section 8.5.5. The next section focuses on approaches to reporting intangibles.

8.5.4 Reporting

The standard or traditional approach to reporting intangibles is through conventional financial accounting. Intangibles are reported on the company income sheets (profit and loss) and their identification is governed by the international and national bodies who determine acceptable accounting practices (Wyatt 2005). However, as outlined in Chapter Two, traditional financial accounting is critiqued as an accurate representation of a company's intangibles, particularly in the context of the knowledge economy (Chaharbaghi and Cripps 2006; Gray 2006; Yongvanich and Guthrie 2006). Even the International Accounting Standards Board (IASB) acknowledges that intangibles are not adequately recognised in existing financial statements (Wyatt 2005; Wyatt and Frick 2010).

As outlined in section 8.5.1 the organisational boundaries on which this reporting approach is based represent an outdated industrial-age view of a firm. As previously discussed in Chapter Two a number of efforts have been made in the intangibles/IC literature to develop new reporting frameworks to better account for the intangibles of firms in the knowledge economy. However, Gray (2006: 803) is critical of this body of intangibles research arguing that if we truly believe the notion that the "planet can no longer support life as we currently understand it" then "tinkering with a 'more accurate' financial accounting is irrelevant and at best and, in all probability, irresponsible."

No evidence that any firms in the Australian property and construction sector had prepared an intangibles/IC report using any of the tools or guides found in the existing intangibles/IC literature existed. Many firms in the sector did indicate that they collect data on their intangibles and most use the data internally for human resource management and customer relationship management, while only a few currently use it for voluntary CSR/sustainability reporting (see Figure 5.2). However, only a small percentage of firms in the sector actually prepare CSR/sustainability reports (see section 5.5.1).

As the sustainability leader case study companies shifted into the strategic proactivity phase of corporate sustainability, however, they did begin to undertake voluntary TBL

sustainability reporting and increase external reporting on their intangibles performance. Two of the case study companies did complete voluntary TBL sustainability reporting when in the efficiency phase, but it was primarily based on their environmental performance, did not focus on the whole of the company (i.e. it was often case studies of various projects implemented during the year), and was not third party verified. A number of externally developed reporting frameworks, including the GRI G3, Carbon Disclosure Project (CDP), FTSE4Good and Dow Jones Sustainability Index (DJSI), have been influential in how these companies report their intangibles. They have influenced what intangibles they collect data for, report on, and the indicators and metrics they use. The GRI framework has been most influential reporting framework in Australian property and construction sector.

Barkemeyer et al. (2011), Dumay et al. (2010) and Gray (2006; 2010) are critical of sustainability reporting initiatives, including TBL reporting frameworks such as the GRI, arguing they are also weak or managerialist approaches to sustainable development. Additionally, TBL sustainability reporting is critiqued for doing little to challenge the status quo of company reporting and allowing the dominance of the financial bottom line to persist (see Gray and Milne 2004; Dumay et al. 2010). To make meaningful progress towards a sustainable business model, a radical re-think of how firms report on their nonfinancial performance is necessary (see Table 8.2).

As an alternative to TBL sustainability reporting Gray (2006: 804) has proposed an "ecologically- and eco-justice-informed approach" to reporting company performance. This approach adopts a "deep sustainability "point of view to establish whether or not firms are socially and environmentally sustainable, with the "default position" that they are not (Ibid 2006: 805). Only "drastic, radical revision" of economic organisation of a firm and the system in which it operates would constitute evidence of sustainability. Gray and Milne (2004) also add that drawing the reporting boundary around the individual organisation and its impacts are too narrow and boundaries need to be based on regional or eco-system scales.

Phase		Reporting
1	Rejection	Traditional financial accounting
2	Non-responsiveness	
3	Compliance	
4	Efficiency	Triple Bottom Line
5	Strategic proactivity	
6	The sustaining corporation	Ecologically/Eco-Justice

Transition by changing default position to unsustainability

Table 8.2: Approaches to reporting intangibles

The possibility of firms adopting Gray's (2006) ecologically and eco-justice based approach to reporting is discussed further in Chapter Nine as an area of possible future research (section 9.5.4). The next section of this Chapter summarises each of the aspects of the management of intangibles outlined in sections 8.5.1 to 8.5.4 into one complete diagram.

8.5.5 The framework

The framework to manage firms' intangibles is presented in Figure 8.10 below. It summarises each aspect of managing intangibles discussed in sections 8.5.1 to 8.5.4. While Baumgartner and Ebner (2010) and Dunphy et al. (2007) argue that there is a natural progression from the compliance phase through to the sustaining corporation phase, the empirical data in this thesis has found that the progression between phases is non-linear and messy. Across each category of the intangibles/IC taxonomy firms may experience multiple different phases simultaneously. As such the progression between approaches to managing intangibles has been depicted with non-linear dotted lines. As mentioned in section 8.5 the approaches to managing intangibles at the efficiency/strategic proactivity phases are based on the empirical data collected in this thesis.

Phase	Context	Reporting	Identify	Measure	Value	Control
1 Rejection	Industrial Economy	Financial Accounting	Traditional accounting	Accountingisation Universal truths Outputs	Direct link to financial performance	Competitive
2 Non-responsive						
3 Compliance						
4 Efficiency					Indirect link (strategy, risk)	Competency
5 Strategic proactivity	Knowledge Economy	Triple Bottom Line	Materiality	Inputs to Action		
6 The sustaining corporation	Sustainable Economy	Ecologically/ Eco-Justice	New org. boundaries	Inputs+Outputs New measures of wealth	Intangible valuable in its own right	Co-operative

Figure 8.10: Framework to manage firms' intangibles in relation to the phases of Corporate Sustainability

8.6 Can corporations be sustainable enterprises?

It was discussed in Chapter One (section 1.5.2) that if sustainable development is to be achieved then business organisations, in particular larger corporate firms will need to play a part (see also Dunphy et al. 2007). A key proposition of this thesis was that business organisations possess the potential to make a meaningful contribution to achieving sustainable development (section 1.5.2). Upon conclusion of this thesis it felt appropriate to reflect on whether it is possible for large corporations, with their focus on shareholder value creation, profit, and the financial bottom-line, to become sustainable enterprises in line with Young and Tilley's (2006) model (Figure 2.8) or Elkington (2001)'s honeybee concept (section 2.5.2).

As outlined in Chapter Three (section 3.3.3) some authors believe that firms in the Australian property and construction sector will never put profits for shareholders ahead of sustainability (Snushall et al. 2005; Reed and Wilkinson 2007). However, the empirical data in this thesis indicates that responding to shareholders', and in particular institutional investors', demands has been an influential factor driving the sustainability leaders (Company A, B, C) to improve their TBL sustainability performance at all of the strategic levels of their firms. Company D, which is a privately-owned firm, has not faced these pressures to the same extent. However, it is experiencing some push from the marketplace (clients and developers) to address its TBL performance, particularly at the project level. So in this sense the public shareholder model of a property and construction firm has had a positive impact on the uptake of sustainable development.

Based on Dunphy et al.'s (2007) phases of corporate sustainability (see Table 2.4), the empirical data presented in Chapter Six and Seven supports the finding that the sustainability leaders (Company A, B, C) have made significant progress in the efficiency and strategic proactivity phases and Company D was between the compliance and efficiency phases. However, as argued in Chapter Two, Dunphy et al.'s (2007) phase model has limitations in the way it characterises a sustainable enterprise (see section 2.5.4). For example efficiency and strategic proactivity phases only represent progress towards a sustainable enterprise at the very bottom of Young and Tilley's (2006) model (see Figure 2.13). So although the sustainability leaders (Company A, B, C) have made significant changes to their business models to embed sustainable development they are still some distance from achieving sustainable development. Birkin et al. (2009: 278) agree, arguing that although business models "have significantly changed from those a decade ago" there is still doubt that even "exemplar corporations with state-of-the-art environmental management and corporate social responsibility" will be able to achieve sustainability due to structural inhibitions in contemporary business models and the socio-economic system

in which they currently operate. To shift beyond the efficiency and strategic proactivity phases towards a sustainable enterprise requires more radical organisational change and systemic change. This specific point is discussed further in Chapter Nine in relation to the limitations of this research (see section 9.4) Although there is some evidence of the sustainability leaders in this study considering, what Dyllick and Hockerts (2002) refer to as, eco-effectiveness and socio-effectiveness firms in the Australian property and construction sector have not yet addressed nor understand how the issues of inter-generational equity, futurity, and sufficiency (Young and Tilley 2006) relate to them. Further research is required to understand how these concepts are integrated in the business models of Australia property and construction sector firms. This is discussed in Chapter Nine as well (see section 9.5.5).

Tilley and Young (2009) make a case for sustainable entrepreneurs to push the business community and policy makers beyond efficiency and the rhetoric of the dominant win-win paradigm of corporate sustainability (Hahn et al. 2010). Hockerts and Wustenhagen (2010) agree, however, they propose it will be through a continual process of evolution between sustainable entrepreneurs and large corporate firms that creative destruction of unsustainable aspects of business models will occur (see Figure 8.11 below). Their idea is somewhat similar to Elkington's (2001) chrysalis economy concept where sustainable entrepreneurs (honeybees) will innovate and push sustainability transformation within an industry which is then scaled up by the wider sector (butterflies).

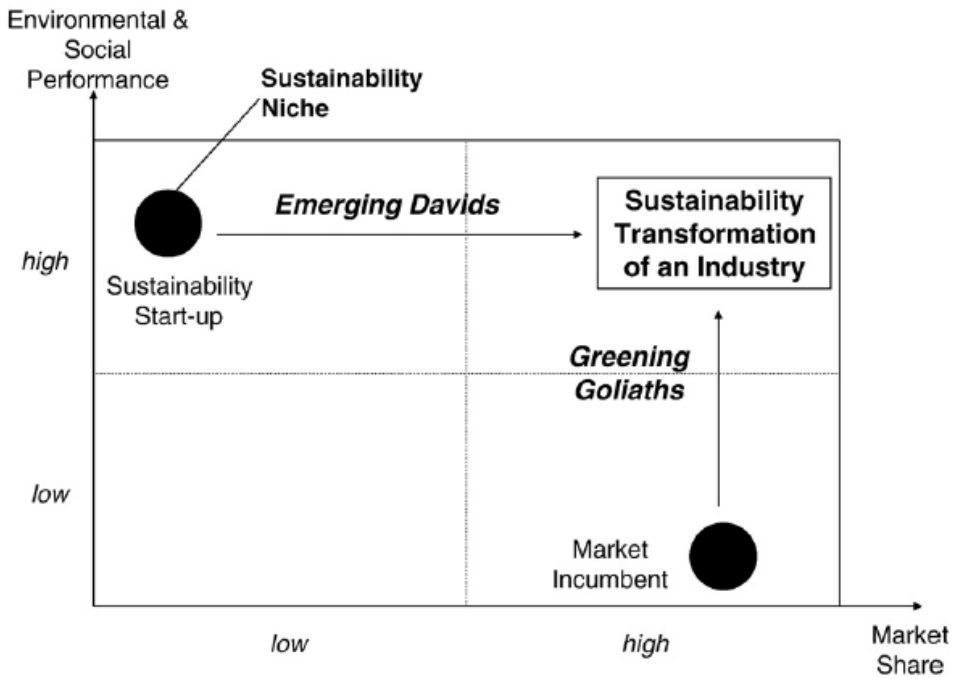


Figure 8.11: Co-evolution of sustainable entrepreneurs and market incumbents, Source: (Hockerts and Wustenhagen 2010: 488)

However, specifically looking at the commercial segment of the Australian property and construction sector a key issue for sustainability entrepreneurs is going to be **ACCESS** to financial capital. So-called 'mom and pop investors' are common in Australia and represent the small firms which own individual or small portfolios of commercial building stock. The position of this thesis is that they are unlikely to become the sustainable entrepreneurs or honeybees. These building owners currently struggle to make efficiency upgrades to their building stock as they have less access to financial capital than the large corporate firms. These individual owners are also less likely to have a traditional business model (i.e. management, staff, systems, procedures) and as a result the concept of managing their intangibles may be less relevant to them. Based on these factors my opinion is that as long as the current economic system persists, the large corporate firms will continue to play the leadership role in creating change for sustainability within the property and construction sector. This does not mean that they will not seek to abuse their more powerful position in the marketplace. In some cases in order to improve their portfolio's overall energy efficiency rating and reduce the average age of their building portfolio they are selling off older less efficient assets – which may inevitably end up in the hands of firms or sole investors with less access to capital or drivers to operationalise sustainable development. This also does not mean that the individual building owner does not want to do anything either. For example, when the City of Melbourne launched its 1200 Building program, which provided building owners with access to finance to upgrade their assets, one private family owned property trust joined the program (Rosenberg 2010).

Coming back to the original question posed at the start of this section, it is still my position that business organisations, including the large corporations, have a role to play in achieving sustainability in the built environment and do have the potential to make a meaningful contribution. This thesis argues that firms should focus on managing their intangibles, as well as continually evolving the approach they take to manage them, in order to continue to progress towards more sustainable business models which will in turn create sustainable forms of wealth. Of all the case study firms, Company B exhibited the most evidence of a shift in thinking (not yet action though) beyond the efficiency and strategic proactivity mindsets to managing their intangibles. For example Interviewee 2 shared his thoughts about Company B's eco-efficiency efforts and how in reality they do not address bigger issues such as latent carbon emissions. Interviewee 2 was actively trying to understand how this could be addressed by the company. Interviewee B1 also shared that Company B was in the process of undertaking new research to try and better understand and identify their stakeholder communities, beyond traditional boundaries currently used by organisations (i.e. those DIRECTLY affected). This was discussed in Chapter Seven (see section 7.9.2).

8.7 Research propositions revisited

This Chapter and Chapter Five, Six and Seven have presented, reviewed and discussed the empirical data and resultant framework developed in this thesis. At this point it is now possible to re-address the research assumptions which were outlined at the onset of this thesis; these three assumptions are:

P1. Firms in the property and construction sector have an interest in improving their environmental and social performance;
P2. Intangibles are a relevant phenomenon for all organisations, regardless of their current approach and integration sustainable development principles; and
P3. The greater an organisation understands its intangibles the greater its capacity to achieve sustainable development.

In relation to the first proposition, it was found that although firms in the property and construction sector are at different stages or phases of corporate sustainability there was a general indication from all of the respondents, not just the sustainability leaders, that they are interested in improving their TBL sustainability. For example, Company D, which is not currently a leader in corporate sustainably, was seeking to improve its sustainability performance. However, while its focus was still primarily on environmental aspects and at the project level of the firm, it is unconsciously progressing from the compliance to efficiency phase of corporate sustainability through actions relating to managing business relationships, staff and internal management processes. The second proposition was also found to be true. All of the respondents in the first and second phase of data collection, regardless of their current phase of corporate sustainability, identified with the concept of intangibles and saw the relevance of intangibles to their organisation. The third proposition was also found to be true, and is evidenced in this Chapter, particularly in the finding that the sustainability leaders are actively managing their intangibles to create meaningful organisational change for sustainability. However, additional future research is needed to investigate the management of intangibles beyond the efficiency and strategic proactivity phases of corporate sustainability, as at the time of the data collection the sustainability leaders were only just beginning to try and understand how to address corporate sustainability beyond these phases. Future research would enable the extrapolations made in the framework (Figure 8.10) about how firms will manage intangibles beyond strategic proactivity phase of corporate sustainability to be empirically tested.

8.8 Summary

This Chapter summarised the contribution of this thesis by outlining the main findings and relating them back to the literature. This thesis differs from the existing intangibles/IC

literature as it has not attempted to develop a prescriptive or one-size fits all approach for the measurement or financial valuation of intangibles/IC. Nor has it attempted to develop a list of universal indicators for the intangibles/IC of firms in the Australian property and construction sector. The empirical data has shown that this ***phenomenon*** based approach to intangibles/IC is limited in its relevance to firms in the Australian property and construction sector. The ***practice*** based approach to intangibles/IC which provides an explanation of how firms embed sustainable development into their business model. The Chapter discussed the implications of this finding on the business case for sustainability as well as how firms in the case study sector are managing their intangibles to create organisational change for sustainability. A key outcome of this thesis and original contribution to knowledge is the framework to manage firms' intangibles, which was also discussed and presented in this Chapter.

"All great truths begin as blasphemies"
George Bernard Shaw

9 Conclusion

This final Chapter outlines the empirical and theoretical contributions of this thesis. It also provides a summary of the answers to the research questions presented in Chapter One. Following this, there is a discussion of the implications of this research for the case study sector, the limitations of the study and recommendations for future research in this area.

9.1 Contribution of this Thesis

An empirical investigation of the ***phenomenon*** and ***practice*** of intangibles and their role in operationalising sustainable development into a business organisation was undertaken in this thesis. As discussed in Chapter One (section 1.2) improving knowledge about the role of intangibles in a business organisation is an important gap to be filled in the literature on the development and implementation of more sustainable business models. **This thesis makes a contribution to knowledge by addressing this research gap**. A **key outcome and contribution to knowledge** of this thesis is the framework to manage firms' intangibles, which was outlined in Chapter Eight (see Figure 8.10). A number of other theoretical and empirical contributions to knowledge have been made which are outlined below.

First **a unique contribution to knowledge** is the conceptual bridge which has been drawn between the corporate sustainability and intangibles/IC literature. While some evidence exists in the literature that others have drawn this conceptual bridge, the majority of the previous research linking these two fields is in two main areas: voluntary corporate reporting (intangibles/IC literature) and the business case for sustainability (corporate sustainability literature). Additionally this previous work linking the intangibles/IC and corporate sustainability literature has primarily focused on studying intangibles as a ***phenomenon***. The unique contribution of this thesis is the conceptual framework used to draw the conceptual bridge between these two fields used Mouritsen's (2006) ostensive **(*phenomenon)*** versus performative ***(practice)*** approach to investigating intangibles/IC. In doing so the focus of this thesis goes beyond trying to develop a set of universal indicators or measures for intangibles and develops an understanding of how firms manage their intangibles to operationalise sustainable development.

Second, by drawing the conceptual bridge between these two fields of study a **theoretically orientated contribution** was made. This study developed a novel framework (see Figure 8.10) which uncovers the various approaches to managing a firm's intangibles along a

continuum of the stages of corporate sustainability. The framework to manage a firm's intangibles was developed conceptually in Chapter Two and empirically in Chapter Eight. The framework demonstrates the shift in approach to managing intangibles as a firm progresses from the pre-efficiency to efficiency phases of corporate sustainability and then again beyond efficiency. The framework does not claim nor aspire to be a one-size fits all tool or prescriptive framework for companies to implement a management system into practice. Instead it provides a roadmap to illustrate the change in mindset required to progress from the pre-efficiency phases to the post-efficiency phases of corporate sustainability.

Third, **a contribution has been made to the corporate sustainability literature** and in particular the business case for sustainability literature. Previous literature on the business case for sustainability has highlighted that intangibles are an important factor in understanding the business case for sustainability (see section 1.1). However, a key barrier to operationalising sustainable development, highlighted in Chapter Two (see section 2.4.4 and 2.4.5), is the inability of firms to link intangibles to corporate financial performance. This thesis has looked beyond the ***phenomenon*** of intangibles in the business case by studying intangibles as a ***practice***, to find a **shift the approach of the business case for sustainability**. It shifts the discourse of the win-win business case from '**what** are the benefits to our company' to '**how** can we make it happen'.

Fourth**, an empirical contribution of this thesis** is the finding that the most influential and widely applied intangibles/IC taxonomy is limited in its depiction of a firm's intangibles. In particular it does not distinguish between relationships the company has with those with whom it has a traditional business relationship (i.e. customers, suppliers, investors) and those with whom it has a relationship which is not necessarily based upon a financial transaction (i.e. local communities, nongovernmental organisations). Additionally the traditional taxonomy does not include a distinct category for a firm's relationship with the natural environment. The current discourse about intangibles/IC is confining itself within frameworks that were still very much a part of industrial age thinking. As anticipated prior to the data collection, Allee's (2000) taxonomy more accurately reflects how firms in the Australian property and construction sector identify their intangibles (see Figure 9.1), particularly in the current era of sustainable development and corporate sustainability in which firms are operating.

Fifth, this thesis also makes **an empirical contribution to the intangibles/IC literature**. It does so by adding to the growing voices advocating for a more critical stance to the study of intangibles/IC as a way forward for the field rather than current dominant approaches which are heavily influenced by traditional accounting-based theory (see section 2.2.5). This group of researchers have argued that less 'global' and more company level case

studies, such as the ones in this thesis, are needed to improve understanding of intangibles/IC in ***practice***. This work also **makes an empirical contribution to the intangibles/IC** literature based on the case study sector, the Australian property and construction sector. This sector has received scant attention in previous empirical studies compared to more obvious service-based sectors such as banking, information technology (IT), and finance or research and development based sectors such as the pharmaceutical sector.

The **final contribution** this thesis makes is to the built environment literature. It supports those who argue (for example see Glass and Dainty 2011) that there is a need to broaden the research agenda in the built environment literature from one which is primarily focused on the **greening the built environment** to a research agenda which also focuses on creating **sustainable companies** and addresses issues at the **enterprise, sector and wider macroeconomic scale** necessary in order for the aims of sustainable development to be achievable.

9.2 Answering the Research Questions

Chapters Five, Six and Seven presented the study's findings as they related specifically to the guiding research questions posed in Chapter One. The research questions are answered in turn below.

RQ1: What are the intangibles of firms in the Australian property and construction sector?

An argument was made in Chapter Two that the most appropriate definition of intangibles for this thesis was grounded in the intangibles/IC theory and literature. The empirical data collected in both the first and second phase of the research design confirmed this to be the case. In the intangibles/IC literature intangibles are defined as a firm's "nonmonetary sources of wealth creation" (Andriessen 2004b: 62). The intangibles/IC construct is **broader in its identification of the nonmonetary sources of wealth creation** than more accounting based constructs such as intangible assets or goodwill. The empirical data in this thesis found that the accounting-based interpretations of intangibles (***phenomenon***) were less relevant and appropriate than the critical management-based interpretations (***practice***) to theorise how intangibles are identified and relevant to the companies. All of the case study companies (section 6.2.2) agreed that their intangibles could be referred to as *nonfinancial resources of their company which have business value* and as discussed above are *material* to their continued success. However, there is still a tension between the lingering connotations of intangibles in an accounting sense (***phenomenon***) versus an approach to intangibles which is about managing and mobilising them to achieve an outcome (***practice***). The term 'intangibles', with its current connotations, by itself does not adequately describe or reflect the nature of these nonfinancial resources of the companies,

however, a suitable alternative term could not be identified. Instead a new discourse around the practice of intangibles is needed. This was discussed in Chapter Eight (section 8.1). Chapter Six found that although the accounting-based theories about intangibles are less relevant and appropriate to theorise how intangibles are identified, currently the concept of 'materiality', which stems from traditional financial reporting, has been somewhat influential in how the sustainability leaders identify their intangibles. The concept of materiality being referred to by the respondents comes from the AA1000 Standard which is an assurance standard for how companies account for their management, performance and reporting of sustainability issues (AccountAbility 2006). People, reputation and company culture were identified as the main intangibles of firms, however, respondents at the three sustainability leaders also included environmental and social performance when indentifying their firms' intangibles. Social citizenship, as Allee (2000) calls it, was also identified as a key area where companies need to improve their performance and human capital was seen as the intangible with the most untapped potential.

In both the first and second phase of the research, the intangibles/IC taxonomy was identified as a useful guiding principle to depict and discuss the various intangibles resources of a firm. However, as mentioned in Chapter Eight (section 8.5.1) Allee's (2000) taxonomy (Figure 9.1 below) was preferred over the more traditional and widely applied taxonomy.

Figure 9.1: Intangibles of Australian property and construction sector firms, Based on: (Allee 2000)

However, it should be noted that this thesis is not claiming that Allee's (2000) taxonomy and categories are universally true. What is important about Allee's (2000) taxonomy is that it makes a distinction between stakeholders that firms have a business relationship (financial) with and stakeholders such as local communities; and it includes a distinct category for the relationship a firm has with the natural environment.

RQ2: How are firms in the Australian property and construction sector managing their intangibles?

Chapter Two outlined the existing literature on managing intangibles and found that identifying, measuring/valuing, controlling, and reporting intangibles are four key aspects to how firms manage their intangibles. Identifying intangibles was addressed in relation to RQ1 above. In the first phase of the data collection, Chapter Five, the management of intangibles in the wider Australian property in construction sector was investigated by focusing on the ***phenomenon*** of intangibles. However, the ***phenomenon*** based approach to intangibles was found to be limited in its relevance to how firms in the Australian property and construction sector perceive of their intangibles. Specifically they do not identify them as static assets to be measured, valued, controlled and reported. A key finding that emerged after the phase one data collection was that the empirical data demonstrated that the relevance of the intangibles/IC concept is related to its ability to facilitate organisational change (***practice***) and not developing a universally true management or measurement framework (***phenomenon)*** (see Chapter 5, section 5.6).

As outlined in Chapter Two (section 2.2.6) the study of intangibles/IC as a ***practice*** is the result of the contemporary critique of the intangibles/IC theory. It adopts the perspective that there is "no fundamental formula to understand the role of [intangibles/IC] in organisations and society" (Ibid, 2006: 823). The ***practice*** based approach advocates developing a deeper understanding of how organisations mobilise their intangibles/IC to achieve their goals. As a result of the phase one findings, the ***practice*** based approach to intangibles/IC was used for the second phase of the data collection. Chapter Six provides a more general discussion about how the case study firms manage their intangibles in ***practice*** and Chapter Seven provides a discussion of how the case study firms are managing their intangibles/IC in ***practice*** to operationalise their sustainable development strategies and create more sustainable business models.

With regard to reporting intangibles respondents in both phases of the research agreed that traditional financial reporting lacks all of the relevant information, and in particular information about their intangibles performance, for external and internal stakeholders to understand the current and future performance of a company. The sustainability leaders address this gap primarily through their CSR/sustainability reporting, however, CSR/sustainability reporting is not undertaken generally across the sector as a whole (see

section 5.4). From an internal perspective, firms report on their intangibles/IC in order to track their progress on company strategies (including sustainability) and also for use in internal decision-making and learning, primarily at the level of the corporate or board level.

Most respondents questioned whether it was possible, necessary or constructive to ascribe a financial value to intangibles to improve the company accounting practices, however, all of the case study companies in some form or another are currently measuring and developing indicators to better understand their intangibles. In most cases they are seeking to make the intangible more tangible through the development of indicators, not financial valuations or measurement. This is because it is believed that intangibles do not necessarily have a financial value, in and of themselves, rather their value is often defined through their alignment with company strategy, risk and the ability to accomplish a desired outcome – which is reflective of the ***practice*** based approach to intangibles/IC.

By viewing their actions to manage their intangibles through the lens of the intangibles/IC as a ***practice*** approach Chapter Seven outlined how the sustainability leaders (Company A, B, C) have achieved a nexus between Dunphy et al.'s (2007) efficiency and strategic proactivity stage by managing more than just their environmental and social impacts. They have taken a 'whole of company' approach in order to embed sustainable development into their business model by managing and mobilising all of their intangibles towards their desired outcome. Sections 7.3 through 7.8 in Chapter Seven discussed in detail how they are managing each of the six categories of intangibles/IC. Chapter Eight also discussed how firms change their approach to managing their intangibles/IC, from the ***phenomenon*** based approach to the ***practice*** based approach, as they progress to the efficiency and strategic proactivity phases of corporate sustainability (see Figure 8.2).

RQ3: How does managing a firm's intangibles increase its capacity to evolve to a more sustainable business model?

This final guiding research question was addressed primarily in Chapter Eight and was based upon the results and analysis from Chapters Five, Six and Seven. In summary, by managing its intangibles a firm is able to increase its capacity to evolve to a more sustainable business model by:

- Creating a paradigm shift in the discourse of the business case for sustainability (see section 8.2);
- Taking an inside-out approach to managing for sustainability (see section 8.3);
- Adopting a whole of company approach (see section 8.3);
- Fostering organisational change for sustainability (see section 8.4); and
- Changing their approach to managing their intangibles as their corporate sustainability knowledge evolves (see section 8.5).

This increased capacity to evolve to a more sustainable business by managing their intangibles is very much linked to viewing the management of intangibles through the intangibles as a ***practice*** lens. The empirical data has shown that the study of intangibles as a ***practice*** is much more useful to understand how organisations embed sustainable development into their business model.

The ***practice*** based intangibles/IC approach is also potentially helpful for those firms who are resistant to the notion of corporate sustainability, environmental management and sustainable development. Proponents of corporate sustainability can change the conversation to one which is about managing the intangible resources of the firm - their people, internal processes, leadership and business relationships, and use these resources an inputs to embed changes within the firm. More case studies of how firms are operationalising sustainable development by managing their intangibles and not necessarily 'throwing' money at achieving sustainable outcomes could help develop a series of key strategies which could be implemented by firms to help them put sustainability into practice.

Implications of the findings of this research for the Australian property and construction sector are outlined in the form of recommendations in the next section.

9.3 Recommendations for the Australian Property & Construction sector

The aim of this thesis was to understand the role of intangibles in operationalising sustainable development into practice in business organisations and in doing so provides a systematic investigation of the intangibles of firms in the Australian property and construction sector as a case study. This research is driven by the identified need (section 1.5) to help existing companies operationalise sustainable development and transition towards business models which are ecologically, socially and financially sustainable. The data collection and results lead to a number of recommendations for firms in the Australian property and construction sector to operationalise sustainable development into their business model – and more specifically to begin to move beyond the efficiency stage of corporate sustainability. These recommendations are discussed below.

9.3.1 Shift the research agenda from built environment to business model

Currently the research agenda in the built environment is heavily focused on the outputs or products of the industry – namely the built environment. Glass and Dainty (2011) have also identified this gap in the existing built environment literature. The findings of this thesis support the argument that firms in the Australian property and construction sector need to focus on embedding sustainable development into all of the strategic levels of an

organisation in order for significant progress to be made, beyond eco-efficiency, towards achieving sustainable development. The intangibles/IC taxonomy presented in this thesis (see Figure 9.1) provides a useful starting point for firms to identify the intangible resources of their organisation. Firms currently undertake many activities to manage these resources, regardless of their current approach to sustainable development. This thesis argues that firms can make progress towards implementing more sustainable business models by managing their intangible resources. The framework to manage firms' intangibles developed in this thesis has shown that firms need to shift the approach they take to managing these resources – that is identifying, measuring, valuing, controlling and reporting them - in order to do so.

9.3.2 Voluntary Sustainability Reporting

A specific practice-based recommendation for firms in the Australian property and construction sector is the uptake of voluntary CSR/sustainability reporting. This recommendation is based on a finding in the empirical data that CSR/Sustainability reporting has been an effective tool for implementing organisational change for sustainability. The finding is congruent with another Australian study by Mitchell et al. (2012). As previously mentioned in Chapter Seven (section 7.4.2), the PCA has already developed a set of CSR/sustainability reporting guidelines for smaller firms in the Australian property and construction sector who may not have the resources or commercial impetus to undertake full scale GRI reporting. There is the danger however of sustainability reporting becoming a marketing or branding exercise and not being used as an organisational change tool. For example, Ihlen and Roper (2011) have found that the discourse in many corporate sustainability reports is one of eco-efficiency, arrival and sustainable development positioned as having been accomplished rather than a work in progress, effectively removing any impetus for further action by the firm. However what this thesis found is that it is the process of reporting rather than the outcomes, or what is actually reported has the potential to be transformational. Therefore to be effective for organisational change the focus of CSR/sustainability reporting has to be on more than just the outcome and a public relations exercise. However, in most cases there are currently no external pressures for this type of disclosure and transparency from SMEs and private firms in the Australian property and construction sector. Instead CSR/sustainability reporting has the potential to be used to improve internal decision making and learning, support firm strategy and risk management and support organisational changes for sustainability. Perrini et al. (2007: 295) agree as the results of their studies on SMEs found that introducing new sustainability reporting procedures was shown to be one of the easiest measures smaller firms could introduce to "transform the organisational structure" of the firm.

9.3.3 Education and training

It is a particularly noteworthy finding of this thesis that human competence (people) was identified as not only the most important intangible resource of firms in this sector, but also as one of the most important resource to implement sustainable development. Currently the case study firms have a number of educational programs in place however, in most cases the focus is on technical skills, leadership skills and personal career development. According to Dunphy et al.'s (2007) model these approaches reflect the efficiency stage of corporate sustainability. To push beyond the efficiency phase of corporate sustainability and shift beyond the dominant corporate interpretation of sustainable development, more 'deep-green' and values based education is needed. Wasiluk and Lynes (2007) argue that there is a lack of professional development courses which challenge built environment professionals to critically reflect on their core values and beliefs about environmental and social issues, their personal impact and potential role in creating a sustainable future. This is also an area for future research.

The next section of this Chapter outlines the limitations of this thesis.

9.4 Limitations

A general limitation of this research is that the scope or boundary of the research concentrated on company level sustainability. According to Loorback et al. (2010: 145) focusing on the company or industry level misses out the fact that "persistent sustainability issues" such as climate change, biodiversity loss, and social inequality are too complex and interconnected to be addressed by individual organisations. They and others (see Starik and Rands 1995; Porter 2006) argue that to date the academic literature on sustainability and business performance has primarily been focused on the firm or industry sector level and more research is required to understand how businesses can "structurally change the way societal systems operate" (Loorback et al. 2010). Stubbs and Cocklin (2008b) agree, in principle, that companies will only be able to be fully sustainable when the socio-economic system which they are a part of is sustainable. However, their empirical research on sustainable business models did find that it is possible for organisations to make "significant progress towards achieving sustainability" by embedding sustainability into their own capabilities and practices (Ibid, 2008: 122). The sustainability leaders (Company A, B, C), investigated as part of this thesis, also demonstrated that they have also made progress towards achieving sustainability by managing their intangible resources.

In spite of the limitation on the research related to the scope being limited to the level of the firm this research has contributed to a gap in the built environment literature, as identified by Glass and Dainty (2011), into how firms in the property and construction sector are driving change within their organisations to embed sustainable development.

Additionally, the data results and analysis highlighted some characteristics of the current socio-economic system which can be barriers or enablers of change. It is acknowledged in this thesis that there is still a need for wider socio-economic change in order for sustainable development, as it was intended by the Bruntland Commission, to be achieved.

This study is also limited in that its focus is primarily on the study of the intangibles/IC of companies in order to understand how sustainability is embedded into the organisation**. It is not claimed in this thesis that financial resources are not important; they were just not the focus of the study** (see Figure 1.1). Indeed a number of case study respondents identified strategies their firm had undertaken to manage their financial resources to embed and improve their TBL sustainability performance. A key strategy across all of the sustainability leaders was the creation of what they term "sustainability capex". Capex is industry jargon for capital expenditure. 'Sustainability capex' is a financial management strategy they have all adopted to ensure that a guaranteed portion of the capital expenditure on each project is earmarked to improve the environmental and social performance of the asset. All three companies claim that their allocations for sustainability capex have steadily increased each year since around 2005. Financial resources – or more importantly access to financial resources - can still be a major barrier that firms in the industry face in order to improve the performance of the existing built environment. However, this was previously discussed in Chapter Eight (section 8.6).

And a final limitation of this research is related to the identification of the individual case study firms selected as the sustainability leaders. Fenwick (2007: 633) highlights the lack of consensus in the existing corporate sustainability literature about the actual level of "implementation" of corporate sustainability practices in organisations and the overall impact and real goals that have been achieved by firms. This research did not conduct an assessment of the actual impact of the case study firm's on global sustainability but rather relied on best available indicators, ratings and previous studies in the literature to identify the leaders (see 4.5.5.2).

The next section of this Chapter outlines more possible avenues for future research.

9.5 Future Research

The next six sections outline areas of future intangibles/IC and corporate sustainability research needed to further investigate the relationship between intangibles/IC and corporate sustainability.

9.5.1 Re-defining organisational boundaries

As noted in Section 8.5.1, the position of this thesis is that changes will continue to occur in relation to the organisational boundaries of a firm and as a result impact how firms' identify

and manage their intangibles. These changes are necessary in order for firms to continue to embed sustainability into their business model and progress beyond the efficiency and strategic proactivity stages of corporate sustainability. Bertels et al. (2010) agree, arguing that sustainability-driven organisational change has unique challenges which are not generally addressed in the existing organisational change literature. Most organisational change initiatives are largely confined within traditional organisational boundaries whereas sustainability-driven organisational change often extends beyond individual organisational boundaries to include an organisation's supply chain or its key stakeholders (Bertel et al. 2010). Empirical research to investigate alternative power and competence organisational boundaries (Santos and Eisenhardt 2005) as well as the mechanisms required to support these changes is an interesting and under explored area of future research. For example, changing the power boundary may result in local communities taking on a different role in organisations. Rather than being a resource to be controlled and managed they could become business partners or, as argued by Company B, untapped sources of human competence. This area of future research has the potential to make a significant contribution to the SME sustainability literature as "paradigm-breaking business models or approaches" could be proposed and tested (Bertel et al. 2010: 10).

9.5.2 Intangibles/IC characteristics and corporate sustainability

Future research which investigates in greater detail the characteristics of each of the categories of intangibles/IC would contribute to improving our understanding of the links between intangibles/IC and corporate sustainability. For example, Chapter Seven highlighted further investigation of the characteristics of a company's executive leaders as an interesting area of future research (see section 7.1 and 7.4.3). Specifically what characteristics of corporate boards and board members encourage the uptake and continual improvement of corporate sustainability performance? Orlitzky et al. (2011), Manner (2010) and Quinn and Dalton (2009) all agree that there is a gap in the literature which connects individuals to corporate sustainability performance. In other words, the micro-level phenomena of values and leadership are generally either assumed or not explicitly considered by researchers. With that said, research that focuses on the nexus of corporate sustainability and leadership is beginning to emerge. For example, Manner (2010) found that strong or exemplary corporate social performance was positively related to a CEO having a bachelors degree in humanities, having a breadth of career experience, and being female. Corporate social performance was negatively related to a CEO having a bachelor degree in economics and to their level of short-term compensation. Indeed two of these characteristics – female leaders and incentive-based pay were raised by Company A and B as factors that improved (female executives) and hampered (short-term compensation) corporate sustainability. Du et al. (2012) point out however, that all of the

literature on leadership characteristics and corporate sustainability focus on the CEO as a unit of analysis and not the management style in general.

Organisational culture is another area of future research to investigate what characteristics improve or block corporate sustainability. Organisational culture was mentioned by all of the sustainability leaders in this thesis as primary driver for them to adopt a leadership role in operationalising sustainable development in the first place. Linnenluecke and Griffiths (2010) agree that the relationship between organisational culture and corporate sustainability still requires further exploration. In particular what organisational structures support a unified culture of corporate sustainability, how can culture change be achieved in the presence of different subcultures in an organisation and how do an individual's values relate to the organisation's sustainability values. Williams (1980) model of dominant, emergent and residual culture could be used to frame case studies of sustainability leaders and laggards to develop a better understanding of the characteristics of organisational of property and construction sector firms and their uptake of corporate sustainability.

9.5.3 SMEs and operationalising sustainable development

There is an acknowledgement in the literature that much of the research to date on operationalising sustainable development in a business context has focused on large corporate firms (Jenkins 2006; Perrini 2006; Heledd 2009; Revell et al. 2010). Evidence from case study Company D, indicated that different drivers for the uptake of corporate sustainability existed (i.e. a strong focus on relationships) as well as different barriers relating to access and availability of resources. Perrini's (2006) Italian research also found that SMEs often have stronger or more personal relationships with their business relationships and their employees (human capital) which impacts their corporate sustainability activities. A more recent UK study by Revell et al. (2010) found that SMEs are becoming less resistant to operationalising sustainability and are starting to appreciate that the BCS has relevance to their firms and not just larger corporate firms. Future research which focuses solely on the SME segment of the Australian property and construction sector is needed. Action research studies could investigate the "inside-out" approach to operationalising sustainable development outlined in Chapter Eight (section 8.3) to identify which intangibles management strategies are most effective to improve SME sustainability understanding and performance.

9.5.4 Examine the eco-justice approach to performance reporting

Research on company reporting is on-going by national and international financial accounting standards bodies and in the accounting literature, however, the focus is primarily on revising standards and frameworks to better suit the knowledge economy and not necessarily a sustainable economy (Gray 2010; Ngwakwe 2012). Gray (2006: 799) argues that these mainstream research efforts to make incremental change, such as

"teasing out the hidden components" of intangibles, ignores the larger issues of company performance accounting and the "radical re-working" that is necessary in order to drive significant change for sustainability. As mentioned earlier in section 9.3.2, Ihlen and Roper (2011) also found that corporate sustainability reports have adopted a discourse of arrival and accomplishment instead of a discourse of a journey or work in progress. However, Gray (2010) and Epstein (2008) both take the position that no business organisation has fully integrated sustainability and therefore a discourse of having 'arrived' is inaccurate.

Therefore, another avenue of future research to be explored is to examine the likelihood and impact of firms adopting Gray's (2006: 804) *ecologically and eco-justice* based approach to CSR/sustainability reporting, along with the mechanisms to make it feasible. As mentioned in Chapter Eight, this approach adopts a "default position" that firms are not socially and environmentally sustainable (Ibid 2006: 805) and this approach was identified as the possible way forward for intangibles reporting to progress beyond the strategic proactivity phase of corporate sustainability (see section 8.5.4 and Figure 8.10).

9.5.5 Sustainable corporate entrepreneurs

It is assumed that a sustainable planet includes a built environment for humans to live, work and play. Much research is still needed, not only from a technological and architectural point of view, but also from an organisational point of view to establish how the organisations and individuals who construct, own and manage the built environment can do so in a sustainable way. Further research is also required on business organisations in the built environment sector, in light of Young and Tilley's (2006) model of sustainable entrepreneurship, to understand what issues of futurity, sufficiency and intergenerational equity look like. For example, how do property firms advocate for less and what would voluntarily sufficiency limits be? Some other unanswered questions include: is the current system of commercial property as a financial investment vehicle for economic growth conducive or at odds to the aims of sustainability? What alternative models might exist? Is a property investment model where the return on financial capital relates to impact and not solely financial returns possible?

Also current interpretations of sustainable development by the property and construction sector, as in most other sectors, have tended to leave the social dimension of TBL sustainability unaddressed and overlooking the original aims of sustainable development such as poverty alleviation of developing countries (Barkemeyer et al. 2011). More research is needed in the role the property and construction sector has to play in reducing the developed world's business interpretation of sustainable development (Barkemeyer et al. 2011) and how to put those marginalised by more powerful entities back into the equation (Tallontire et al. 2011).

9.5.6 Assessing strategic readiness

A final proposed area of future research would involve action research projects which assess existing organisations' current sustainability performance level (i.e. business as usual, eco-efficiency, strategic proactivity etc.) in each category of the intangibles/IC taxonomy. Various interventions could be implemented in order to equalise and/or push each category to the next level of sustainability performance in order to improve our understanding of the conditions are conducive to change. Choi and Ruona (2011) agree with this concept, arguing that the outcomes of this approach to studying readiness are more useful than those derived from adopting the traditional focus of resistance to change. It is hypothesised that the impact of the interventions, particularly in the business relationships and social citizenship categories, could create change not only at the mirco (organisational) level, but also the meso (sector) and macro (national) scale. Such research would also help to improve knowledge and understanding of the relationships between the various categories of intangibles/IC and how they interact with each other to improve or restrict sustainable development outcomes.

9.6 Concluding thoughts

Revisiting the guiding aim of this thesis, to investigate the role intangibles play in operationalising sustainable development into practice in Australian property and construction sector firms, the discussion outlined in this thesis has demonstrated that, yes, intangibles do play a role in implementing sustainable development. The empirical data in this thesis found that the sustainability leaders are managing their intangibles/IC to drive organisational change for corporate sustainability across the various strategic levels of their organisations.

As mentioned in Chapter One, a key proposition of this research is that existing businesses are able to make changes to their business model, even within the context of the existing economic paradigm, to shift them towards a more sustainable business model. It remains to be seen if the slow evolution in and erosion of the neoclassical business model being implemented in this sector will lead to a Kuhnian type (Kuhn 1962) paradigm shift in the wider socio-economic system towards a more environmentally sustainable and socially equitable business model.

This thesis also found that tensions still exist between the discourse of intangibles as a ***phenomenon*** and intangibles as a ***practice***. This is especially evident in relation to the business case for sustainability and pressures to monetarise intangibles/IC to validate their importance. Recognising that this study is a product of its time, the hope is that in some way it has contributed to the questioning of today's 'taken-for-granted' assumptions about what intangibles are in a business context, and that it has helped to highlight that industry

needs to develop a new understanding of how to manage intangibles – i.e. identify, measure, value, control and report - in order to not only be successful in a post-industrial era, but also for the health and well-being of the planet and all its inhabitants.

The findings of this thesis are in many ways a description of what is occurring in the Australia property and construction sector. As the Australian sector bears some resemblance to property and construction sectors in other developed nations (see section 3.2), the concepts of corporate sustainability, intangibles/IC as a ***practice*** and the business case for sustainability discussed within this thesis may resonate with other countries.

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11 Appendices

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11.1 Appendix One: Questionnaire, Phase One Data Collection

BACKGROUND INFORMATION

This survey aims to collect information about firms in the Australian property sector to test and refine a framework to define **a firms intangibles**.

For the purpose of this research a firm's *intangibles* are defined as the *non financial, non physical resources* which are attributed to a firm and contribute to the delivery of its value proposition.

A firm's intangibles encompass its human capital (people and knowledge), relational capital and structural capital (see diagram below for definitions of each of these categories). These collective intangible resources are commonly referred to as a company's *intellectual capital*. In this survey the term intangibles and intellectual capital are used interchangeably.

INTANGIBLES AND THE PROPERTY SECTOR

ABOUT YOUR COMPANY

The following questions are to provide us with some basic demographic data about **your firm**.

1. Which of the following describes **your firm**?
(select all that apply)

- ☐ Building Owner
- ☐ Fund manager
- ☐ Facility manager
- ☐ Developer
- ☐ Estate Agent
- ☐ Construction contractor
- ☐ Corporation with property assets
- ☐ Other *(please specify)*:

2. Please indicate the market segments that **your firm** conducts its business in.
(select all that apply)

More Info

- ☐ Commercial (offices)
- ☐ Industrial
- ☐ Retail
- ☐ Tourism
- ☐ Leisure
- ☐ Education
- ☐ Healthcare
- ☐ Residential/Community
- ☐ Transport/Infrastructure
- ☐ Other *(please specify)*:

3. What is the size of **your firm**?

- ○ Sole proprietorship or partnership without employees
- ○ 1 to 4 employees
- ○ 5 to 19 employees
- ○ 25 to 200 employees
- ○ over 200 employees

4. **Is your firm** an Australian Real Estate Investment Trusts (A-REITs)?

- ○ Yes
- ○ No
- ○ Not Sure

If you answered **'no'** is **your firm** listed on the Australian Stock Exchange?
Select an answer

INTANGIBLES AND THE PROPERTY SECTOR

GENERAL ASPECTS

This section is seeking to gather general information about intangibles and their relevance to property sector firms.

5. I consider **my firm** to PRIMARILY made up of:

- material resources (i.e. plant, equipment, money)
- knowledge resources (i.e. people, process, networks)
- both
- not sure
- Other *(please specify)*:

7. on a scale of 1 to 5 how important is **HUMAN CAPITAL, STRUCTURAL CAPITAL, and RELATIONAL CAPITAL** to the success of **your firm**?

	1 Not Important	2 Somewhat Important	3 Important	4 Very Important	5 Extremely Important
a. Human Capital	○	○	○	○	○
b. Structural Capital	○	○	○	○	○
c. Relational Capital	○	○	○	○	○

8. Are they any additional categories to the 3 outlined above (human, structural, relational) of intangibles that you would add?

- Yes
- No
- Don't Know

If 'YES' what categories would you add? (Please provide category and a brief description of it)

9. Does **your firm** have a specific categorisation or classification system for its intangibles/intellectual capital?

- Yes
- No
- Don't Know

If 'YES' can you please outline **your firm's** approach to classifying its intangibles/intellectual capital.

INTANGIBLES AND THE PROPERTY SECTOR

MEASURING AND REPORTING INTANGIBLES

10. Do you think traditional financial statements sufficiently report a **firm's** intangibles/intellectual capital?

- ○ Yes
- ○ No
- ○ Not Sure

11. Does **your firm** collect data on its intangibles/intellectual capital?

- ○ Yes
- ○ No
- ○ Don't know

Why is it important for **your firm** to do so? *(select all that apply)*

- ☐ attract investors
- ☐ attract/retain employees
- ☐ demonstrate human resources
- ☐ demonstrate innovations achieved
- ☐ demonstrate employee training
- ☐ inform voluntary reporting (ie GRI reporting, CSR reports)
- ☐ inform compliance reporting(financial accounting)
- ☐ improve customer relationships
- ☐ improve external stakeholder relationships (suppliers, customers, regulators, NGOs etc)
- ☐ improve suppliers relationships
- ☐ improve strategic planning
- ☐ motivate innovation activities
- ☐ set performance targets
- ☐ support strategic decision-making
- ☐ support organisational learning
- ☐ support to the firm's strategy
- ☐ Other *(please specify)*:

12. Is information about **your firm's** intangibles reported through mechanisms other than traditional financial reports?

- ○ Yes
- ○ No
- ○ Don't Know

If 'YES' where else is information about **your firm's** intangibles/intellectual capital reported? *(select all that apply)*

- ☐ CSR (Corporate Social Responsibility) Report
- ☐ Company Website
- ☐ Intellectual Capital Statement
- ☐ Marketing Material
- ☐ Other *(please specify)*:

NTANGIBLES AND THE PROPERTY SECTOR

HUMAN CAPITAL

comprises the knowledge that employees take with them when they leave the firm. Includes the skills and competencies of employees; their know-how in certain fields that are important to the success of the firm; and their attitude and aptitude (i.e. loyalty, motivation, flexibility)

13. In **COLUMN A**, please indicate which of the following sub-categories of **HUMAN CAPITAL** are relevant to **your firm**.

THEN please indicate to what extent information is **currently** available in **your firm** for each sub-category, on a scale of 1-5. (click the More Info button for additional notes)

More Info

	Please tick all that apply	Information available				
	A	1 None	2 A little	3 Some	4 Quite a lot	5 Comprehensive
a. Job Satisfaction	☐	○	○	○	○	○
b. Employee Development	☐	○	○	○	○	○
c. Employee Experience/Education/Vocational qualification	☐	○	○	○	○	○
d. Staff Productivity	☐	○	○	○	○	○
e. Recruitment	☐	○	○	○	○	○
f. Staff Turnover	☐	○	○	○	○	○
g. Leadership Qualities of Managers	☐	○	○	○	○	○
h. Employee Work-related Competencies	☐	○	○	○	○	○
i. Employee Work-related Knowledge	☐	○	○	○	○	○
j. Other	☐	○	○	○	○	○

14. If you ticked 'OTHER' in the grid above, please elaborate here (i.e. provide other relevant sub-categories not outlined above)

INTANGIBLES AND THE PROPERTY SECTOR

STRUCTURAL CAPITAL

Comprises the knowledge that stays with the firm at the end of the working day, such as, a firm's organisational routines, procedures, systems, cultures, databases, information flows, leadership and management style etc.

15. In **COLUMN A**, please indicate which of the following sub-categories of **STRUCTURAL CAPITAL** are relevant to **your firm**.

More Info

THEN please indicate to what extent information is **currently** available in **your firm** for each sub-category, on a scale of 1-5. (click on the More Info button for additional notes)

	Please tick all that apply	Information Available				
	A	1 None	2 A little	3 Some	4 Quite a lot	5 Comprehensive
a. Organisational Culture	☐	○	○	○	○	○
b. Corporate Values	☐	○	○	○	○	○
c. Management Philosphy	☐	○	○	○	○	○
d. Intellectual Property	☐	○	○	○	○	○
e. IT Systems	☐	○	○	○	○	○
f. Processes and Routines	☐	○	○	○	○	○
g. Networking systems with customers, suppliers, databases, etc.	☐	○	○	○	○	○
h. Internal Communication System	☐	○	○	○	○	○
i. Effectiveness of Expenditure on R&D	☐	○	○	○	○	○
j. Other	☐	○	○	○	○	○

16. If you ticked 'OTHER' in the grid above, please elaborate here (i.e. provide other relevant sub-categories not outlined above)

INTANGIBLES AND THE PROPERTY SECTOR

RELATIONAL CAPITAL

Comprises all resources linked to the external relationships (formal & informal) between the firm and outside persons or organisations, including customers, suppliers, partners, communities, pressure groups, regulators and investors. Brand, image, corporate reputation etc., fall into this category.

17. In **COLUMN A** please indicate which of the following sub-categories of **RELATIONAL CAPITAL** are relevant to **your firm**.

THEN please indicate to what extent information is **currently** available in **your firm** for each sub-category, on a scale of 1-5. (click the More Info button for additional notes)

More Info

	Please tick all that apply	Information Available				
	A	1 None	2 A little	3 Some	4 Quite a lot	5 Comprehensive
a. Market Demands for Product/Service	☐	○	○	○	○	○
b. Community Relations	☐	○	○	○	○	○
c. Corporate Reputation	☐	○	○	○	○	○
d. Customer Relationships	☐	○	○	○	○	○
e. Environmental Activities	☐	○	○	○	○	○
f. Ethical Matters	☐	○	○	○	○	○
g. External Communications	☐	○	○	○	○	○
h. Business Alliances/Partnerships/Collaborations	☐	○	○	○	○	○
i. Supplier Relationships	☐	○	○	○	○	○
j. Other	☐	○	○	○	○	○

18. If you ticked 'OTHER' in the grid above, please elaborate here (i.e. provide other relevant sub-categories not outlined above)

INTANGIBLES AND THE PROPERTY SECTOR

ABOUT YOU

This section is to provide us with some basic demographic data about yourself, the respondant

19. Which best describes your job position? (Select one OR tick OTHER and enter you job title in the box provided)

- ○ Chief Executive Officer
- ○ Chief Operating Office
- ○ Managing Director
- ○ Sustainability Manager
- ○ General Manager
- ○ Property Manager
- ○ Facility Manager
- ○ Other *(please specify)*:

20. In which state do you primarily work?

○ ACT ○ NSW ○ NT ○ QLD ○ SA ○ TAS ○ VIC ○ WA

21. How many years experience do you have in Property and Construction?

- ○ 0 to 4 years
- ○ 5 to 9 years
- ○ 10 to 15 years
- ○ 16 to 20 years
- ○ 20 or more years

22. Would you be willing to take part in an interview (approximately 30-60 mins) to discuss **your firm** and the topics covered in this questionnaire (intangibles and intelletual capital) in greater depth?

- ○ Yes
- ○ No

23. If **yes** please provide your name and a contact method (email or tel. number). This will not be linked to your responses.

24. Is there any additional comments or feedback you would like to provide on this questionnaire and its content?

11.2 Appendix Two: Project Information Sheet

Sustainable wealth creation in practice: A framework to manage firms' intangibles

Kendra Lyn Wasiluk
Doctoral Researcher
Sustainability Research Institute, School of Earth & Environment, University of Leeds, UK

The Research

Intangibles are the **non-physical, non-monetary resources of a firm** that enable it to create and sustain its long-term performance. The purpose of this research is to investigate the *intangibles* of firms in the Australian commercial property sector; answering the following questions - What are they? Why and how do organisations assess the performance of their *intangibles*? And how do organisations use information about their intangibles to inform strategic decision-making and organisational learning?

How?

A number of data collection methods will be used including a web-based questionnaire, content analysis of publicly available annual and CSR reports, and a series of interviews with those who develop, construct, own, manage, invest and lease commercial buildings. This wider data collection will lead to the selection and examination of a few case study organisations.

At present, interview participants are being sought to take part. Each interview is anticipated to take approximately 30-60 minutes and a short follow-up may be requested in about 3-6 months. The questions will allow for open answers and will ask about the intangibles of your firm – particularly why and how they are managed, how they are assessed, and how is information about them is used internally and externally. Participation is entirely voluntary and you may withdraw from the project at any time without recourse.

What will the information be used for?

The data gathered during the interviews will be used for the sole purpose of this doctoral research. This will consist of the completion of a final thesis and possible publication of related papers. In neither of these documents will the information be attributable to the individual or organisation. A summary of the general results will be made available to all participants, and a tailored project summary report will be provided to each case study organisation.

If you are interested in taking part in this research project, or for more information, please contact the researcher*
(details provided below)

More on Intangibles

In a business context, the term *intangible* is defined in a number of ways, often based on the discipline (i.e. accounting, strategy, management, investment perspectives) and often terms such as intangible asset, intellectual capital, goodwill and intellectual property are used interchangeably. What is common amongst the various definitions of *intangibles* is the notion that they are the **non-physical, non-monetary resources** of a firm that enable it to create and sustain its long-term performance. For the purpose of this research, a categorisation rather than a single definition approach has been adopted, and stems from the fields of business strategy and management.

The most agreed categorisation approach to *intangibles* is human capital (knowledge), structural capital (internal resources) and relational capital (external resources) – or more simply, people, processes and networks. These, along with three additional categories of intangibles – social citizenship, environmental health, and corporate identity, are the main empirical focus of this research.

There are three proposed outcomes to this research which include:

- -Development of a framework for organisations in the property sector to manage their *intangibles*
- •Evaluation of the role *intangibles* play in giving organisations 'access' to implement sustainable development
- •Further development of theoretical analysis of the non-financial aspects of sustainable business models

Why?

A key issue facing business today is how to reconcile the belief that sustainable development is a worthwhile goal and how to achieve this. When interpreted into a business context, sustainable development requires an organisation to manage not only its financial bottom line, but also its non-monetary, non-tangible performance – often dubbed the 'triple bottom line'. Also, the 'business case for sustainability' presents the 'win-win' case of taking a sustainable approach to business, however, many of the benefits or drivers of value often relate to the organisations *intangibles*.

The scope of this research project is specifically focused on the investigation of the challenge of managing the non-financial aspects – or *intangibles* – of organisations in the Australian property and construction sector.

There has been little systematic empirical investigation on the *intangibles* of firms in the property and construction sector, both in Australia and internationally. Previous research on *intangibles* focuses on serviced-based sectors such as IT or on sectors that rely heavily on their intellectual property such as biotechnology. However, a recent review of the Australian property and construction sector reported that it is following a similar trend to that of many other industrialised Western nations and heading towards a more serviced-based sector. This coupled with growing demands for transparency in corporate reporting and voluntary corporate social responsibility mean that organisations now more than ever are being called upon to identify, assess, manage and communicate about their *intangibles*.

For more information or to take part please contact

Kendra Wasiluk
School of Earth and Environment
Sustainability Research Institute
University of Leeds

Email: k.wasiluk@see.leeds.ac.uk
Mob: +61 0420571800 (AU)
Tel: +44 07593601617 (UK)
www.see.leeds.ac.uk/people/k.wasiluk

The Researcher

Kendra undertakes this interdisciplinary work within the University of Leed's School of Earth and Environment, Sustainability Research Institute (SRI), in collaboration with the University of Melbourne. Prior to joining the University of Leeds, Kendra was a research officer at RMIT University's Centre for Design, Melbourne. One of her key projects was as the lead authour on a number of the foundation articles for the Your Building website, including the "*Business Case for Sustainable Buildings*". Kendra also has over 7 years experience as an Interior Designer, working for commercial firms in Canada (Mayhew + Associates) and Australia (Graham Nicholas Pty Ltd) as well as running her own freelance design consultancy firm. For more on the SRI at Leeds, please visit http://www.see.leeds.ac.uk/research/sri/

Alternatively please contact

Dr. William Young
Sustainability Research Institute
University of Leeds
Email: c.w.young@leeds.ac.uk
Tel: +44 113 343 1640

Dr. Louise Ellis
Sustainability Research Institute
University of Leeds
Email: l.a.ellis@leeds.ac.uk
Tel: +44 113 343 3316

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11.3 Appendix Three: Interview Schedule

Main Research question	**Action**	**Prompts**
What are they?	Show diagram with intangibles taxonomy as a prompt to discuss defining them at their organisation? Do they prefer the term intangibles or intellectual capital, or something entirely different?	How are they defined at your organisation? Why are they important? Would they add any others?
How are they managed?	Has how you managed your intangibles changed over the years? How? Why? What challenges do they face with the management and reporting of their intangibles? What are they currently doing to overcome changes?	i.e. developing relationships with other (uni partners)
Sub Research question	**Action**	**Prompts**
Why and how do organisations assess the performance of their *intangibles*? • What indicators do they use	Does your organisation assess its intangibles? • Why? • How do you go about it? • Do you use qualitative (descriptive) indicators or quantitative (monetary or other metrics)? • How can it be linked financial accounting?	CSR/annual reports as prompts Use any or heard of any of these tools (ICS, BCS – list others) Industry collaboration or done in isolation? Is it a problem of no metrics?
And how do organisations use this information to: • inform strategic decision-making and organisational learning? (internally) • communicate with stakeholders (externally)	Are there feedback loops between organisational levels – i.e. project level, through to corporate level of information about intangibles? What external reports do you create (CSR report, ICS, annual report, GRI accounting etc.) and how is information about your intangibles reported in these documents?	How they make decisions? Who makes decisions? Then go onto how??? Strategy documents they have? Think in terms of output? -

Note: If they say something key, make a note and go back that.

11.4 Appendix Four: Sample of Content Analysis Coding

Company	Sector	Staff	AREIT	PCA	Goodwill/ Intangibles	Annual Report Nonfinancial categories reported on (main headings – not indicators)	CSR report	SD on web	CDP	UNPRI	SD Policy	Exec SD	FTSE 4 GOOD	DJSI	Other
Abacus Property Group	Diversified		✓		On balance sheet Intangibles+ goodwill to do with business combinations + asset acquisitions										2 properties NABERS refurb Not a market leader Stat env. Clause
Aspen Group	Diversified		✓		On balance sheet Intangible assets comprise primarily of development rights in relation to an Aspen managed land syndicate										No sd mention at all
Australand Group	Diversified	550	✓		Only in notes to financial statement that any amount paid above fair value for assets will be attributed to goodwill	MD+CHAIRMAN LETTER Corporate Responsibility People, Safety and Sustainability •Safety •Community •Diversity •Sustainability		x							SD case studies on web Sponsor of GS communities tool Few good quotes about people, brand and customers in images
Challenger Diversified Property	Diversified		✓		On balance sheet (goodwill + other IA's) IA - Software, operating lease over land			x	x						CDP not done since '07 Energy and carbon disclosure Talk of people/staff in CR section

Company	Sector	Staff	AREIT	PCA	Goodwill/ Intangibles	Annual Report Nonfinancial categories reported on (main headings – not indicators)	CSR report	SD on web	CDP	UNPRI	SD Policy	Exec SD	FTSE 4 GOOD	DJSI	Other
Charter Hall Group	Diversified		✓		On balance sheet (goodwill and IA) *IA - Management rights*	Chairman's Letter • The community • Developing our people • Creating a sustainable company and portfolio SD section - Balance Approach (TBL) • Resource Efficiency • Communities and Regeneration • Shareholders and investors • Customers • Our people		x	x	x	x				1st greenstar home retail *SD Policy*
Charter Hall Office REIT	Office		✓		On balance sheet (goodwill only)	Chairman and CEO Report • Continued focus on sustainability • Strategy and outlook • Energy conservation and responding to climate change • Water savings • Waste management • Engaging our customers		x					x		Focus on energy+water ratings (NABERS)
Cromwell Property Group	Diversified		✓		Intangible assets on balance sheet (software)	From web – energy, water, waste, social – the sustainability programs From annual update – • Enviro • Governance • Economic • Social		x					x		Says there's a SD report in annual report that uses GRI guidelines, but not on web.
FKP Property	Diversified		✓		On balance sheet Rights to run nursing home Dev. &marketing rights for specific residential dev.	6 priorities but no reporting of data: • Our Employees; Our Customers; Our Investors; Our Partners; Our Brand; Our responsibility • Occupational Health and Safety		x							Claim accolade for OHS systems (p.8) Mentions environment

11.5 Appendix Five: AREIT Content Analysis Sample

Company Name	Sector	Code	Notes
1. Ardent Leisure Group	Hotel, Leisure	2	
2. Abacus Property Group	Diversified	0	
3. ALE Property Group	Hotel, Leisure	0	
~~Agricultural Land Trust~~	~~Rural Property~~		Land trust- excluded
~~Astro Japan Property Group~~	~~Diversified~~		No AU property - excluded
~~APN European Retail~~	~~Retail~~		No AU property - excluded
4. Aspen Group	Diversified	0	
5. Australand Group	Diversified	2	
6. Australian Education Trust	Childcare	0	
7. Becton Property Group	Res. Development	0	
8. Bunnings Warehouse	Retail	2	
9. Cairndale Properties Group	Retail	2	
10. Centro Properties Group	Retail	2	
11. CFS Retail Property Trust	Retail	2	
12. Challenger Diversified Property	Diversified	0	
~~Challenger Wine Trust~~	~~Vineyards~~		Excluded
13. Charter Hall Group	Diversified	2	
14. Charter Hall Office REIT	Office	2	
15. Charter Hall Retail REIT	Retail	2	
~~Coonawarre Australia~~	~~Vineyards~~		Excluded
16. Cromwell Property Group	Diversified	3	
17. Commonwealth Property Office Fund	Office	2	
18. CVC Property Fund	Diversified	0	
19. Compass Hotel Group	Leisure	0	
20. DEXUS Property Group	Diversified	3	
~~EDT Retail Trust~~	~~Units~~	-	US company - excluded
21. FKP Property	Diversified	1	
~~Galileo Japan Trust~~	~~Units~~	-	Japanese firm - excluded
~~Galileo Shopping America~~	~~Units~~	-	US Company - excluded
22. GEO Property Group	Residential	1	
23. Goodman Group	Diversified	2	
24. GPT Group	Diversified	3	
25. Growthpoint Properties Australia	Diversified	0	
26. ING Real Estate Entertainment Fund	Leisure	0	
27. ING Real Estate Healthcare Fund	Healthcare	1	
~~Investa Office Fund~~	~~Office~~	-	Report not available
28. ING Real Estate	Retirement	1	

Company Name	Sector	Code	Notes
Community Living			
29. Living and Leisure Australia Group	Leisure	2	
~~MacArthur Cook Property Securities Fund~~	~~Diversified~~	-	Securities only – excluded
30. Mirvac Group		3	
31. Mirvac Industrial Trust	Industrial	0	
32. Multiplex Acumen Prime Property Fund	Office	0	
33. Multiplex Acumen Property Fund	Diversified	0	
~~Prime Retirement and Aged Care~~	~~Aged Care~~	-	Gone into administration
~~RCL Group~~	~~Residential Land~~	-	excluded
34. Redcape Property Group	Pubs	0	
35. Rabinov Property Trust	Diversified	0	
~~RNY Property Trust~~	~~Office~~	-	US Company - excluded
36. Stockland	Diversified	3	
37. Thakral Holdings Group	Diversified	0	
~~Timbercorp Primary Infrastructure~~	~~Land development~~	-	De-listed in 2010 - excluded
~~Tishman Speyer Office Fund~~	~~Commercial~~	-	US company - excluded
38. Trafalgar Corporate	Commercial	0	
39. Trinity Limited	Diversified	0	
40. Valad Property Group	Diversified	2	
41. Westfield Retail Trust	Retail	2	

Note: Code refers to coding for voluntary disclosure of intangibles

0 – traditional (no significant discussion)

1 – some level (in Director's report or CEO letter)

2 – separate sections in Annual report

3 – separate report

11.6 Appendix Six: Phase One Interviews Thematic Analysis

THEMES	QUOTES
Theme 1: The Australian Property Sector (particularly commercial buildings) is unique compared to other Western Nations	
Less fragmentation Concentrated ownership to a few large corporate The use of property as an investment vehicle World leader with regards to environmental performance Different story for contractors/builders or pure developers Sustainability criteria are part of the Property Quality Matrix	• office portfolio –" not as fragmented as in most other western countries, get 6 major players in the room and have 80% of the building stock" • "it's a small industry, everyone knows each other" • Why the change can occur that is – less fragmented market • Maastricht University global study
Theme 2: Firms in the property sector clearly identify themselves with the characteristics of firms in the knowledge-based era	
Intangibles are the key resources of an organisation Consistent with the resource-based view of firm Service-based businesses Intangibles/IC provides competitive advantage Almost all interviewees referred to their organisation as providing a service, an experience etc. rather than a product (building)	• "perception is that construction industry is plant and equipment but management skills are key" (BP@WC) • "it doesn't matter what industry you're in– it's intangibles that make or break a company" • "we are managers of the system...we're not really builders...we manage the process and co-ordinate" • "…an organisation like ours, particularly in the management service we provide, we don't produce, were not an industry that produces phones or widgets. We provide management services, so we manage this overall process and the outcome is the building…so that is why how we use our people, our IT tools and technologies that's how we stay ahead of the pack really."
Theme 3: The business case for sustainability and intangibles	
developers who own - there is no longer a need to make the business case to build green building – the value proposition has become apparent: Brand, futureproofing, quality requirement, client briefs	• "so the NABERS business case and the fact that tenants are making it part of their requirement; the risk of obsolescent buildings but equally i think – you could ask the question as to why tenants are asking for better performing buildings and a large part of that i suggest is they're protecting their reputation BP@GPT"
For developers who build and sell on - the intangible value proposition is harder – shorter time frames and different value propositions	
The business case for sustainability focuses on paybacks to the relational capital of organisations (as found in literature)	• "you've got to be more consistently building a brand that we are more leading-edge" • "...and people say to use 'oh what's the payback, what's the payback?' Well the payback for us is in improving our NABERS rating and attracting the right tenants ...'yeah but what's the payback?' and it's you're just looking for an excuse not to do it"

IC concept can help push forward the business case for sustainability – sustainability is the value/goal – IC is the way to operationalise it	• "For example setting global indicators for carbon – is not just about setting an indicator – the IC concept allows you to figure out/think strategically about the resources that are needed and will be created to set that indicator – and it's a cyclical process –once the indicator is agreed, then you need to do the process again to set reduction targets...what is it we have to change inside, what is it our people have to know? And that's when it moves into the intellectual capital of the organisation" • "Sustainability is about problem solving, being strategic, interpreting science and then figuring out what your business has to do"
The business case is about value adding for the clients However, in the current system the value add can be overlooked when projects are awarded on the bottom line	• "we are in some ways the protector of our tenant's intangibles – the defender of their intangibles....all our buildings are premium grade buildings. Our tenants pay a significant premium to be in those buildings, so it's about the address, the size of the building, the naming rights on the top, being on that tenant board in the front with like businesses. So it is part of their reputation and for many of the service businesses that occupy our offices, i.e. banks, financial companies, a significant portion of their value is in the intangibles, so we're playing a part in defending that value"
RISK AND OPPORTUNITY often used as a way to describe the value of intangibles in the business case	
All generally agreed with the categorisation of intangibles I showed them (start showing)	• Linkages between the domains – i.e. might have an environmental indicator target given, but then have to use human capital etc to figure out how to do it
Theme : Intangibles general	
Most important intangibles	• "the building game is a people business. It's not building. If you cannot relate to and work with people you will not be a success"
Human capital most important intangible, most difficult to manage and area where we can make great improvements (generally and to achieve SD)	• "My view and I've seen this over the years is that the structural capital, the routines, your processes, your databases, your leadership and management is one thing that can be relatively controlled and improved on, developed if you've got the systems in place people can learn, slot in, pick them up. The human capital to me is a harder nut to get a grip of. My experience has been that it is harder for people to develop and improve upon"
Efficient/effective use of structural capital necessary to control financial performance of projects/access to capital	
Have got environmental management well sorted but need to address social aspects of TBL	• "we have the mechanics of this hard and fast reporting stuff – report the kwh, gigajoules and kilo litres – we've got that pretty much in hand. We are missing the whole social and community side of things...there is great recognition that we're not focused enough on the community connections we have" • "we are trying to understand exactly what you are trying to understand...this kind of notion that we have different layers of capital within the business and we can describe it in different ways."
Definite difference between the property companies interviewed and the construction firms	• Property firms are ahead when it comes to understanding and uptake of SD • Construction companies are still grappling with what it means

Theme: Intangibles of the organisation are similar to what is suggested in the IC literature, however, less formal than the traditional taxonomy (HC, SC, RC)	
The most common taxonomy/expression of an organisation's intangibles is the company's 'values' or 'value statements'	• i.e. People, Performance, Partnerships, Profit; • Safety&Health above all else, enduring business relationships, achievement through teamwork, our people are the foundation of our success, respect for community and environment • "we have 4 quadrants of the intangibles: community, customer, natural resources and energy and climate change. So they're the kind of 4 quadrants that inform the strategy and feed through the value chain. And so every person at [our company] at every level of the organisation has KPIs linked to sustainability and they reference those 4 quadrants and how they are adding value or managing or mitigating impact on the natural environment for example"
Categories were what the literature said but more ad hoc and don't use formal taxonomy – although all found the IC diagram a useful talking point	• Things typically seen as a cost (i.e. staff, marketing, IT systems etc) • Brand, reputation, • provided indicators of their intangibles – i.e. 'people', 'culture' and 'brand' were noted
IC framework from literature relevant to the property and construction sector	• "I can certainly relate to those aspects [i.e. human, structural, relational capital] and it is interesting to see it put down effectively like this – in the model and on paper. Because you come into a business and you get on with what you do day-to-day without necessarily taking the time to sit back and try to recognise where these elements are. I believe as a management group, sit back and try and structure it and openly identify these sorts of issues." (BP@WC)
Theme: Measuring Intangibles	
Understand intangible value creation with regard to traditional business stakeholders – i.e. clients/tenants	
Intangibles are valued/measured by created indicators that are measurable	
making the intangible tangible via indicators, or changing the discussion to risk and opportunity	
Theme: Managing Intangibles	
IC management is primarily about risk management and strategy	
CSR reporting/sustainability adding new indicators/categories of intangibles to measure and report, but reason for doing so is same as always – reputation, brand, competitive advantage	
Management of intangibles is occurs – without consciously identifying the intangibles	• Referring to weekly operational meetings "so that discussion takes place, which is very much in line with these aspects here (circles IC categories) which you highlighted. So without us I suppose consciously identifying our intellectual capital we discuss it at length"

11.7 Appendix Seven: Phase Two Interviews, QDA Miner Codebook

- **IDENTIFICATION/DEFINITION**
  - business value
  - measure
  - OHS
  - Human Resources
  - nonfinancial risk
  - company values
  - no intangibles in company value but still have intangit
  - HC
  - business relationships
  - reputation
  - systems/procedures
  - relationhips between traditional stakeholders
- **BIOGGRAPHICAL INFO**
  - Job function
  - length of time at company
  - company info
- **SYSTEMS AND TOOLS**
  - ISO 14001
  - procedures to operationalise missing
  - technology
  - people managing people
  - stakeholder engagement plans
  - Greenstar
  - eco footprint calculator
  - metering
- **WHY MANAGE**
  - regulatory risk
  - green building market shift
  - the change manager
  - operational efficiency
  - track project performance
  - industry pressure
  - sustainability
  - pre-qualification for work
  - to grow company
  - first mover advantage/competitive advantage
  - continuous improvement
  - eco-efficiency
  - avoid obsolesence
- **BARRIERS TO MANAGEMENT**
  - alignment between offices
  - cost for SME
  - staff resistant to change
  - no accountability for performance
  - company based metrics
  - focus on financial success of projects
  - culture of industry
  - employee knowledge
  - employee motivation/attitude
  - complexity of bldgs to monitor
- **IMPACT - EVIDENCE OF MANAGING IC**
  - employ staff in roles
  - expand to other areas of company
  - peer recognition/awards
  - conversation happening
  - attracted tenant
  - overcome financial barrier
  - appropriate design solutions
  - tenant retention
  - market shift
  - improved eco-efficiency
- **INTANGIBLE VALUE**
  - link to financial cost
  - brand
  - respond to tenders
  - marketing
  - reducing risk
  - link to gross profit
  - ability to deliver on project
  - benefit to wider society
  - when you see it you get it
  - add to intangible value of client
  - take conservative approach
  - sharing cost and benefit
- **HUMAN CAPITAL**
  - environmental training
  - quality training
  - training
  - value of
  - managing HC in an SME
  - why we do sustainability
  - create teams with operational buliding knowledge
- **PERFORMANCE**
  - interegate the data
- **KNOWLEDGE ECONOMY**
  - evidence
  - protecting IP
- **SUS DEVELOPMENT**
  - SME and lack of resources to invest in
  - HC training people
  - sits between Strategy and Risk
  - changing nature of the business case
  - link between finance and sustainability
  - strategy reflects values
- **OTHER**
  - theory manifesting in practice
  - people most important intangible
  - unconsciously manage
  - entrprenuerial spirit

- methodology
- lack of innovation in bldgs
- difference between retail and commercial

CHALLENGES
- working with GEN Y
- long development cycles

MEASURING INTANGIBLES
- develop indicators to make tangible

RISK
- limits innovation

REPORTING
- GRI

HOW MANAGE
- through SD team

RETAIL
- what a sustainable retail project is

SOCIAL CITIZENSHIP
- part of our culture/values
- sustainable approach to it
- evidence of impact
- identifying the local community
- responsbility to do the right thing
- social performance helping environmental performance
- improving community

BUS RELATIONSHIPS
- impacting the performance of the value chain

STRATEGY
- value chain
- SD related

CORP IDENTITY
- people make the corportate culture