Sustainable Procurement: Pathways of Transition for Australian organisations

Suzanne Grob

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Certificate of Authorship/Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

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Acknowledgements

List of Relevant Publications

Some of the research material reported in this thesis has been published and presented previously. Listed below are the relevant publications and conferences.

Refereed Publications

Grob, S.M & McGregor, I.M. 2005, 'Sustainable organisational procurement: a progressive approach towards sustainable development', *International Journal of Environment, Workplace and Employment*, vol. 1, pp. 280-295.

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Grob, S.M. & Benn, S. 2006, 'Promulgating sustainability through sustainable purchasing: the role of alliances and networks', *Asia-Pacific Researchers in Organizational Studies (APROS)* 11 Proceedings, Royal Melbourne Institute of Technology Publishing 2006.

Peer Reviewed Conference Papers

Grob, S. & Crawford J. 2008, 'Diffusing sustainability: towards a framework for adopting sustainable procurement' *Australian and New Zealand Academy of Management (ANZAM) Conference* Auckland, NEW ZEALAND, 2-5 December 2008.

Grob, S. & Crawford J. 2006, 'Buying with the environment in mind – How do Australian organisations shape up?' *Corporate Responsibility Research Conference*, Dublin, IRELAND, 3-5 September 2006.

Grob, S 2006, 'Actors, 'Alliances Action –The roles played by organisations in setting the scene for sustainable procurement' *Australia and New Zealand Academy of Management (ANZAM) Operations Management Symposium*, Rockhampton, AUSTRALIA, 14-16 June 2005.

Grob, S 2006, 'Designing the kaleidoscope – from the view of the shopping trolley and the planet - making sense of organisational purchasing and sustainability' *Australian Consortium for Social and Political Research Incorporated, (ACSPRI) Social Science Methodology Conference,* Sydney, AUSTRALIA, 10-13th December.

Grob, S & Benn, S, 2005 'Actors, Alliances Action – the roles played by organisations in setting the scene for sustainable procurement' *Asia Pacific*

Researchers in Organisation Studies 11th International Colloquium, Melbourne, AUSTRALIA, 4-7 December 2005.

Grob, S.M & McGregor, I.M. 2004, 'Sustainable organisational procurement: a progressive approach towards sustainable' *Joint Australia New Zealand Society for Ecological Economics and Centre for Full Employment and Equity Conference* Newcastle, AUSTRALIA, December 2004.

Conference Papers – Abstract Refereed

Grob, S 2004 'Sustainability and Procurement: the role of institutions in addressing this delicate balance' *University of Technology, Sydney Cross disciplinary Doctoral Students Conference,* Sydney, AUSTRALIA, August 2004.

Grob, S 2004 'Sustainable Public Procurement' *Association of Pacific Rim Universities Doctoral Students Conference*, Sydney, AUSTRALIA, 9-13 August 2004.

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Abstract

Organisations as discretionary customers exert a powerful influence on sustainability. Sustainable procurement, the subject of this thesis, represents an approach whereby the natural and social environments are explicitly taken into account in purchasing decisions. Guided by transdisciplinarity, this thesis explores interventions to accelerate sustainability considerations in organisational procurement by providing a range of practical and theoretical contributions to this field.

The research findings are underpinned by a framework of strategic management theories and a social-constructivist epistemology. To examine the adoption of sustainable procurement in Australian organisations, this study employs a survey questionnaire and semi-structured interviews, complemented by an arts-based inquiry interpretation of the case studies.

The combined findings reveal that sustainable procurement in most Australian organisations is an optional activity, in its formative stages, practised as environmental purchasing and typically sustainable procurement is introduced as part of organisational sustainability. This is aside from organisations with exposure to global supply chains that also integrate social considerations. Organisations with fewer than 100 people were found to have the highest adoption rates. In alignment with other green purchasing studies internal organisational determinants, including senior management support, and existing sustainability programs and policies, were found to be highly predictive of adoption. Existing formalised purchasing arrangement including policies, contracts with suppliers and strategic partnerships also supported adoption. By contrast frequently reported barriers, including the high cost of sustainable products and the introduction of programs and also lack of staff awareness and organisational size were not found in this study.

Potential loss of reputation, as a form of competitive advantage was found to be the prime motivation for sustainable procurement adoption. In response to maintaining reputation, organisations were seen to frequently form collaborative stakeholder relationships, predominantly with NGOs and partnerships with suppliers, as the platform for innovative products. Use of a diffusion of innovations' framework indicates that sustainable procurement will be diffused as an innovation among Australian organisations surveyed by 2010. This was shown to be supplemented by institutional forces predominantly through supplier performance programs and sustainability frameworks, initially, then through mimetic and coercive forces

between suppliers and their supply chains and industry peers. Mimetic tendencies amongst procuring organisations will also contribute to the institutionalisation of sustainable procurement in Australian organisations.

Overall, this thesis contributes valuable insight to the status and future of sustainable procurement in Australia with findings that are more broadly applicable. It both strengthens the theoretical basis for examination of the sustainable procurement field, and offers practical tools, including a phase model tailored from the corporate sustainability literature to address this important area.

'The social and ethical dimensions of procurement ... unless we can capture those benefits as well we are only getting at the maximum two-thirds of the three-part set that we decided made up sustainable procurement' (interview participant).

Chapter 1.   Introduction

1.1 Background to this research

This research is based on the perspective that the purchase of products and services affect the natural environment and the community. The natural environment delivers the raw materials for creating complex products that surround our lives, homes, workplaces and communities. Products and services exert pressure on the natural and human environment in terms of their raw material extraction, particularly non-renewable resources, their manufacture and processing, packaging, transport and their ultimate disposal or reuse. Corporations produce goods and services and as a society we depend on them. Additionally, in their production, goods influence the welfare, health and safety of employees, suppliers and their communities. Society is also reliant on the planet's natural systems and regenerative processes to provide clean air, water and soil to produce food. The scale of purchasing in organisations means they are significant consumers of products and services (Michaelis 2003).

Whereas individuals buy, organisations across all sectors procure goods and services on a far greater scale. The premise of this thesis is that modifications to *how* and *what* organisations buy, particularly larger ones, are likely to have a profound influence on sustainability. The organisational sector is a considerable consumer that 'commands an increasingly powerful influence on the economy and society' (Green et al. 2000:207). Drumwright (1994: 1) stated:

> ...few would doubt the potential power of organisations to effect social change, by both creating markets for socially responsible products and providing customers with socially responsible alternatives. Decisions about socially responsible organisational buying are at the crux of this potential power.

Collectively and individually, organisations are in a commanding position to contribute towards sustainability and consumption of resources through their procurement choices. Procurement decisions affect sustainability in terms of the type of products purchased and the practices and processes of selected suppliers.

The amount of spending allocated to organisational procurement, especially in large organisations including multinational corporations and governments, is substantial. Private sector spending is 'estimated to be up to 30 per cent of GDP and up to 90 per cent of expenditure on procurement' (Callender & Matthews 2003: 10). Spending on goods and services is similar in the public sector, accounting for typically 15 to 30 per cent of Gross Domestic Product (GDP) (United Nations 2005) and typically 20 per cent of GDP in Organisation for Economic Co-operation and Development (OECD) countries (UNEP 2001). The United Nations has recognised the significance of public procurement as one area where key policies could be used to promote changing unsustainable patterns of consumption and production (United Nations 2005).

Over time, many authors have discussed the relationship between economic growth and ecological sustainability imposed by business and society. Some say this growth is placing the earth's natural systems beyond recovery (Cairncross 1992; Commoner 1972; Daly et al. 1994; Hawken et al. 1999; Henderson 1996; Meadows et al. 1972). A purely economic perspective is inadequate because it overlooks the constraints imposed by the biophysical (natural environment), the growing magnitude of ecological problems and the potential contribution of consideration of the natural environment as a source of competitive advantage and driver for business. The World Wildlife Fund for Nature (WWF) estimates that, based on our current rate of global growth, 'by the mid 2030s we will need the equivalent of two planets to maintain our lifestyles' (WWF 2008: 1).

Understanding consumption and its role in sustainability is integral to sustainable procurement or considering sustainability in procurement decisions. Organisational procurement is a contributor to global consumption because the production, delivery and disposal of goods exert a burden on the earth's life-sustaining systems, its regenerative capacities and its resources, particularly non-renewable resources. This is summarised by Mastny (2003:5):

> Through their purchases, governments, corporations, universities and other large institutions wield great influence over the future of our planet. Nearly every purchase an institution makes, from office paper to buildings, has hidden costs for the natural environment and the world's people.

Organisations and their procurement choices have the capacity to play a part in reducing consumption and lowering our ecological footprint. While sustainable

procurement cannot singularly solve these problems, it offers organisations a practical and demonstrable way to contribute towards sustainability. The act of procurement means that organisations decide with whom they wish to do business and what commodities and services they wish to purchase. Through prudent product and service choices organisations can contribute towards reduction of air and water pollution, waste to landfill, water and energy use and greenhouse gas emissions. Organisations also have the opportunity to support civil societies through ethical supply chains and labour practices that respect the dignity and human rights of employees for equitable pay and safe working conditions and support local communities. Sustainable procurement, as defined in this thesis means buying with the natural and social environment in mind. In current times there are also heightened expectations of organisations' accountability, in particular corporations and government, related to adopting sustainability. Procurement provides one avenue. Krause *et al.* (2009) suggest that 'a company is no more sustainable than the suppliers that are selected and retained by the company' (Krause et al. 2009: 18). Kleindorfer *et al.* (2005) assert that 'we must enlarge our perspective of operations management (supply chains), to include people and the planet, because companies will be expected to do so' (Kleindorfer et al. 2005: 484).

Purchasing 'sustainable products' and services also has the potential to affect the market economy and community. In Australia, as in other countries organisations, particularly governments and large corporations, can play an instrumental role in supporting the market for sustainable products in Australia and more widely. Lamming and Hampson (1996) claim 'that diffusing environmental management techniques backwards and forwards through the supply chain might be a very effective way of developing the general environmental performance of an industry' (Lamming & Hampson 1996: S46). Through organisational procurement sustainability spreads through supply chains (Green et al. 2000; Sarkis 2001b) across organisations and into the community, contributing towards a more sustainable natural environment and socially cohesive and equitable society.

1.1.1 Research window

To address this research window my thesis explores the experiences, approaches and motivations of Australian organisations in their transition towards embedding sustainable procurement practices.

Despite this potentially significant role that the purchasing function can play in spreading sustainability, little research has been carried out to date on sustainable

procurement, particularly in Australia. Most of the research emanates from Europe and the United States, with a strong focus on green or environmental purchasing. In public and corporate Australian organisations the practice of sustainable procurement that incorporates environmental, social and economic consideration into procurement is emerging. This thesis therefore fills an important gap in providing research that examines the adoption of sustainable procurement in Australian organisations.

The Australian context within which these organisations operate should first be appreciated. Australia has a lot of unique sustainability features in terms of biodiversity, but as a country our environmental report card is less than exemplary. As a nation of 21 million people inhabiting the driest continent, our ecological footprint per capita is the fifth largest in the world (WWF 2008: 34). Coupled with this, it is one of the largest producers of waste and amongst the highest producers of greenhouse gas emissions in OECD countries (Australian Bureau of Statistics 2006). Against these stark figures, the introduction of Australia's emissions trading scheme in 2010 is likely to shift market demand towards more sustainable product alternatives. Professor Ross Garnaut, the author of Australia's Climate Change Review, signalled that 'prices of emissions intensive goods and services would rise' (Garnaut 2008: 10). There is also a growing momentum for sustainable products.

> The consumer market for natural, healthy and sustainable products and services in Australia has grown over 25% to $15 billion in 2008 and is expected to reach at least $22 billion by 2010 (Mobium Group 2008: 2).

1.2 Research goals and objectives

The primary aim of this thesis is to examine how and why Australian organisations are integrating sustainability considerations into their procurement decisions towards a broader goal of what it would take to embed sustainable procurement as the routine organisational practice in Australia. This research centres on Australian organisations and the specific research objectives are:

- To determine the current and future level of adoption of sustainable procurement
- To identify perceived drivers and barriers to adoption, and identify which are the critical success factors
- To investigate the role of collaboration with stakeholders and its influence on adoption

- To identify the interorganisational mechanisms and intraorganisational determinants that will accelerate the adoption of sustainable procurement
- To identify incremental steps to progress sustainable procurement in organisations.

I also draw on three UK examples to enhance one component of the work and demonstrate the direction Australian organisations might adopt.

1.2.1 Research focus

This thesis charts the current pathways of transition in Australian organisations introducing sustainable procurement and explores the approaches and techniques employed by corporate and public organisations. It examines the role of purchasing goods and services that do not generate revenue, sometimes referred to as 'indirect spend'. The research focuses on purchasing decisions made in a commercial setting, where products to be considered would include stationery, motor vehicles, furniture, uniforms and information technology equipment and does not include materials and products associated with construction and infrastructure. Furthermore, it does not concentrate on product design, life cycle analysis or other methods used to determine the sustainability of particular products purchased. This thesis focuses on investigating the progression of organisations introducing sustainable procurement, through the perceptions and experiences of procurement practitioners.

Guided by their personal value systems, researchers such as myself, select topics that are congruent with their value systems (Greene 2007; Tashakkori & Teddlie 2003b) Accompanying the research goals, I had personal objectives for my research. In a book on mixed methodology Tashakkori and Teddlie (1998: 30), advise:

> study what interests and is of value to you, study it in the different ways that you deem appropriate, and use the results in ways that can bring about positive consequences within your value system.

Building on my extensive experience in sustainable public procurement, I was motivated to embark on academic research to explore methods to accelerate the implementation of sustainable procurement across the organisational sector, and more broadly the spread of sustainability potentially resulting from procurement. A major research objective was to place myself 'in the shoes of other practitioners'

and understand their experiences, motivations and challenges across a spectrum of organisational types.

My research findings show that organisations in Australia are most often embarking on sustainable procurement as part of corporate responsibility and in response to maintaining their reputation in the community. Sustainable procurement appears to be seen as a tangible demonstration of an organisation's commitment to sustainability, acknowledged by stakeholders, that has the ability to frame its reputation. This research proposes contributions towards the sustainable procurement theory drawing on a range of strategic management perspectives. In addition to theoretical contributions, this research also proposes practical solutions for organisations to incorporate sustainability considerations into their procurement decisions and recommends changes internal and external to Australian organisations to enable this transition. The ultimate aspiration of this research and changes in practices is that sustainable procurement will be a ubiquitous business practice in Australian organisations and, in time, be referred to simply as 'prudent procurement'.

1.3 Transdisciplinary approach

Research problems focused on sustainability, such as changes to procurement practices, are new and require new approaches to research. In the following three sections I outline my methodology, which is based on a foundation of transdisciplinarity and a social-constructivist epistemology. These are predisposed to particular characteristics including self-reflectivity and inventiveness, or the researcher as a 'bricoleur', accepting complexity and plurality in understanding, analysis and interpretation. I applied a pragmatic mixed-methods methodology able to reconcile paradigmatic pluralism while delivering practical responses to accelerate sustainable procurement and contribute towards sustainability. I begin by discussing the application of my transdisciplinary approach to this research.

My research, like many centred on sustainability, has a pragmatic orientation; therefore, I have adopted a transdisciplinary approach. Transdisciplinary research lies in the domain of real-world problems, explicitly addresses societal issues and assists researchers and their collaborators to investigate real-world situations with a notion of creating change within those situations (Balsiger 2004; Horlick-Jones & Sime 2004; Klein 2004; Lawrence 2004; Lawrence & Despres 2004; Ramadier 2004; Russell et al. 2008; Wickson et al. 2006). Max-Neef (2005: 15) defines this new way of engaging with research beyond a methodology: 'Transdisciplinarity is

more than a new discipline or super-discipline, it is actually, a different manner of seeing the world, more systemic and holistic'.

This thesis addresses the problem of the degradation of natural and human resources caused by an organisation's procurement decisions and practices. Robinson (2008) suggests that transdisciplinary studies have a dual responsibility to society and academia, and that issues-driven sustainability must be an amalgam, amenable to both audiences (Newell 1998; Robinson 2008). Simultaneously, my research contributes towards theory building in sustainable procurement and the 'consequential output' (Wickson et al. 2006) is a practical guide for organisations to implement sustainable procurement. At the same time, this thesis provides an example of new transdisciplinary methodologies for sustainability research.

While there is a burgeoning interest in sustainability and research is gaining momentum, I assert it would be difficult to justify that 'sustainability' is an established discipline. The research subject of sustainable procurement, like many transdisciplinary studies straddles many recognised disciplines. Klein (2004) asserts environmental problems exemplify complexity, spreading across 'the domains of different disciplines and sectors' (Klein 2004: 519). This research incorporates knowledge from several disciplines, primarily business, design, law, social sciences and environmental science, which shape responses to sustainable procurement. These disciplines contribute towards component fields of organisational culture, product design, manufacturing processes, scientific research and development, legislation and policy. While my research draws on literature across these disciplines, theoretically it is informed by a combination of strategic management theories, including institutional theory, diffusion of innovations theory, the natural resource based view of the organisation and stakeholder theory.

Transdisciplinary research typically consults a variety of actors, including 'the know-how of professionals and lay-people' (Lawrence 2004: 489), and recognises that creating change involves 'influencing the actions and behaviours of multiple societal actors' (Russell et al. 2008: 463). This research draws heavily on the day-to-day experience of procurement practitioners supplemented by academics and industry leaders as my research participants, who collectively possess important knowledge for bringing about effective sustainable change.

Introducing sustainable procurement as the normative organisational practice is a multidimensional challenge that requires the co-operation of multiple actors and

resources, including but not limited to change agents within and outside organisations, product designers and legislators, to orchestrate change. The next section describes the worldview I bring to this thesis in developing the research approach and in interpreting data and information.

1.4 Epistemology adopted – social constructivism

It would be difficult to deny that most scholars approach research with a set of preconceived notions about the construction of knowledge. This may be explicitly stated or implied through their selection of methodologies. Després *et al.* (2004: 475) suggest, 'the mediation space in transdisciplinary research includes, amongst other elements a definition of epistemological positions and the combination of research methods'. Therefore, as a transdisciplinary researcher, it is imperative that I articulate my worldview. Worldviews are 'the constellations of belief, values and concepts, that give shape and meaning to the world a person experiences and acts within' (Norton 1991: 75).

My research is guided by a social-constructivist epistemology; it is my lens to interpret data and apply meaning to my research findings. Crotty (1998: 8) describes a constructivist worldview below.

> There is no objective truth waiting for us to discover it. Truth or meaning comes into existence in and out of our engagement with the realities of the world. There is no meaning without a mind. Meaning is not discovered, but constructed.

I interpret social constructivism as a mode of understanding where experiences and events are filtered by human engagement, through exchanges between the object and the subject; where understanding and meaning is interpreted in the mind and knowledge is constructed. In their assertion of the social construction of reality, Berger and Luckmann (1966: 211), state; 'that the object is society as part of a human world, made by men, inhabited by men, and in turn, making men, in an ongoing historical process'.

Two layers of meaning are present in my research: the research participants and my interpretations and interactions as the researcher. This research did not undertake empirical studies of the balance sheets, auditing the types and volumes of products purchased or undertaking a detailed spend analysis. By contrast, the research centred on organisations as social settings, where the research participants were employees, as the primary sources of information. This was

achieved by filtering the practice of sustainable procurement through their experience, perceptions and insights 'in the form of multiple intangible mental constructions' (Denzin & Lincoln 1998: 206). Miles and Huberman (1994: 8) suggest 'interpretation comes via the understandings of group actions and interactions, where meanings are made by the social actors and by the researcher'. Layered on this social environment and my constructivist worldview, I also bring my own preconceptions, judgements, experience and reflections as a researcher, which are expanded on in the following sections.

1.4.1 Research bricoleur

To complement a transdisciplinary approach and social-constructivist worldview I have also adopted the role of a research bricoleur. Schwandt (2007: 26), draws parallels between the bricoleur and a transdisciplinary approach, describing the product of the bricoleur's toils 'as a kind of necessary and productive insecurity about confining qualitative inquiry to disciplinary boundaries'.

Before presenting my interpretation and application of the term 'bricoleur' it is useful to examine its derivation and definitions used by several key authors. The term is drawn from Levi-Strauss (1966: 17), where bricoleur translates as a 'jack of all trades or a kind of professional do it yourself person'. Denzin and Lincoln (1994, 1998, 2000) describe several types of bricoleurs, but chiefly the role of an interpretative bricoleur as an inventor with 'few tools, and little by the way of appropriate parts' (Denzin & Lincoln 2000: 1061) is most pertinent to my conceptualisation. They state:

> ...the product of the interpretive bricoleur's labor is a complex, quilt like bricolage, a reflexive collage or montage - a set of fluid, interconnected images and representations. This interpretive structure is like a quilt, a performance text, a sequence of representations connecting the parts to the whole' (Denzin & Lincoln 2000: 6).

Crotty (1998: 51) expands on the interpretative aspects by advocating multiple ways of understanding unconstrained by predictable norms. He states:

> that research in the mode of the bricoleur requires that we are not straight jacketed by the conventional meanings we have been taught to associate with the object, instead inviting us to approach the object in a radical spirit of openness to its potential for new or richer meaning'.

My own interpretation and application of the term bricoleur rests on the inventiveness aspects of the term that invites imagination and creativity to the research process. Crotty (1998: 50), expands on their description, stating it is 'the notion of a person making something new of a range of materials that had previously made up something different'. This suggests the researcher is an artisan, resourceful and inventive, a type of research alchemist. I epitomise the role of the interpretive bricoleur through the construction of interpretative models, which are described in greater detail in Chapter 5. My own definition is 'the bricoleur is a resourceful assembler, acting with conscientious intent, employing inventiveness and ingenuity to construct assemblages that engage audiences in multiple ways of understanding and interpretation'.

Applied in the context of social constructivism and transdisciplinarity, the bricoleur accepts paradox and confluence, unconstrained by methodological traditions to answer questions that deliver workable societal improvements. In response I have applied a unique combination of theories and methodologies to illuminate solutions to organisational procurement. Another defining characteristic of these methodological underpinnings is the reflexive researcher, and my application is outlined below.

1.4.2 Reflexive researcher

Transdisciplinary researchers engaged in social inquiry, especially social constructivists, are naturally inclined towards self reflectivity. Robinson (2008: 79), suggests a key role of the transdisciplinary researcher 'is how to acknowledge and adjudicate among contradictory or competing claims'. One means to manage this ambiguity and competition is to be self-reflective. I approached my research with my 'own frames of reference, values, beliefs, assumptions etc. that have shaped the conceptualisation of the problem' (Wickson et al. 2006: 1053), which is discussed in the following.

The range of experiences I brought to my research acted as a frame of reference and reflection, to analyse data and develop concepts and models. These include tertiary study and positions as an architect, an artisan, strategic planner, a policy adviser and various management roles. Robinson (2008) suggests a hallmark of transdisciplinary research is a personal connection to the research material, centred on real world issues that are raised by personal interest or a desire to create change before moving into scholarly research; both of these were fundamental to my research.

In concert with my previous experience, I had a 'prolonged engagement' (Lincoln & Guba 1985) with public sustainable procurement, initiated by an extensive international study tour in 2002 that provided an excellent introduction to international initiatives. Since then I have played an instrumental role in implementing public sustainable procurement policy and projects across Australia. This knowledge and familiarity with the issues and key players has contributed markedly to my research as a self-reflective journey.

My relationship with interview participants took on several roles as part of the qualitative component. I had an established relationship with many of the research participants as peers. Together, as a collegiate group across all sectors, we were striving to promulgate sustainable procurement more widely. At the same time I was implementing sustainable procurement in the public sector, others, notably participants from private sector organisations, were implementing this practice at a faster rate, which explains their dominance in the qualitative research component. Contextually, I was a stranger in a strange land: yet collectively, my research participants and I were linked as change agents with a shared language, common issues and challenges, albeit in different settings. This 'common ground' equipped me with insight and empathy, yet distance; a sectoral partition removed the threat of competition, and prevented me from 'going native' (Lincoln & Guba 1985).

During the qualitative phase, my understanding and interpretations were filtered through my earlier and lived experiences, in exchange with the research participants' experiences as a self-reflective process synthesising issues across multiple dimensions. At times I was forced to reflect deeply on my close association with the subject matter and my experience juxtaposed with the information I was receiving in some of the interviews. This resulted in seeking verification from other data sources, including publicly available reports to substantiate interviewees' claims.

From the inception of my research, I also kept a reflective diary, 'a kind of diary in which the investigator, on a daily basis, records a variety of information about self (hence the term reflective) and method' (Lincoln & Guba 1985: 327). It delivered a vehicle to voice, question and record the emerging themes, and assumed the role of a mental jotting pad, a repository of my thoughts surrounding the validity of the qualitative data collected, where I wrote and discussed some responses in light of my experience and knowledge.

Finally, the most tangible expression of self-reflection was the development of collages, or reflective artefacts, that I used to engage the audience in other forms of interpretation, analytic understanding and self-expression, which are detailed in Chapter 5. The next section outlines the methodology and methods applied to this research guided by transdisciplinarity and a social-constructivist epistemology.

1.5 Methodology and methods

Transdisciplinary research is characterised by an interpretation of epistemologies in the development of methodology, creating 'novel or unique methodologies tailored to the problem and its context' (Wickson et al. 2006: 1050). While there is no single method exclusively recommended for transdisciplinary research, there is broad agreement that methods should respond to the problem issue, frequently leading to pragmatic or solution-oriented research across disciplines (Després et al. 2004; Horlick-Jones & Sime 2004; Lawrence 2004; Wickson et al. 2006). Robinson (2008: 74) asserts, that problem-driven research 'gives rise to new methods and tools, which combine theory and practice in innovative ways that become a kind of integrating framework'.

I selected a mixed-methods design for my study because it was congruent with a transdisciplinary approach and my worldview as a social constructivist. Lawrence (2004: 489) notes that 'transdisciplinarity is a way of achieving innovative goals, enriched understanding and a synergy of new methods'. Although I view the world as a social constructivist, I recognise that paradigms (Kuhn 1970), worldviews, epistemological stances and shared beliefs 'help to describe inquiry practice: they do not prescribe it' (Greene 2007: 72). Correspondingly, in my application of mixed methods, I accept epistemological pluralism, recognising that individual methods have associated epistemological stances.

Several authors have declared that mixing of paradigms, while mixing methods, is incommensurable (Lincoln & Guba 1985; Morse 2003) and that selection of method is of secondary importance to the research paradigm and choice of methods is intrinsically related to a paradigmatic stance. Patton (1988: 113) states that 'seldom do actual studies exemplify all the ideal characteristics of either paradigm; there is a lot of real world space between the ideal-typical endpoints of paradigmatic conceptualisation'. Reichardt & Cook (1979) state that, 'there is nothing to stop the researcher, except tradition, from mixing and matching the attribute of two paradigms to achieve the combination which is most appropriate to the research problem and settings at hand'. Additionally, in agreement with Greene

(2007: 56), I contend there are shades of grey to this argument, where 'differences in paradigms are not dualisms, but rather form continuous dimensions, along which empirical inquiry can vary'.

I was initially unfamiliar with social science research methods and therefore unencumbered by predispositions or preference to any paradigmatic or methodological tradition from an individual perspective and also from my institute. Mixed methods resonated with me as a logical and practical extension of transdisciplinarity and my worldview.

Organisations as research contexts have their own unique characteristics that suggest a predilection towards mixed-methods studies. Hart (1995: 1008) suggests natural resource based organisational studies 'will require both methodological flexibility and patience'. Compton and Jones (1988: 72) state that it is 'not a mutually exclusive decision between quantitative and qualitative methodology. In reality, it is very difficult to study organisations without using both sorts of methods'. I resolved that, to accelerate the progression of sustainable procurement in Australian organisations, my research required both text and numbers, therefore recommending a mixed-methods design. My application of mixed-methods methodology is outlined in the next section.

1.5.1 A mixed methods methodology

This research mixes both quantitative and qualitative methods in one inquiry, which is referred to as 'mixed methods' (Journal of Mixed Methods Research 2008; Tashakkori & Teddlie 2003a). The purpose of my mixed-methods design was 'to extend the breadth and range of inquiry, by applying different methods and combinations of methods for different inquiry components' (Greene et al. 1989: 259).

There are now several typologies for mixed-methods designs. I selected a pragmatic mixed-methods design practice (Datta 1997; Greene 2007; Greene & Caracelli 1997, 2003; Morgan 2007; Patton 1988; Tashakkori & Teddlie 1998) because it was congruent with my methodological stance, accepts paradigmatic pluralism (Greene 2007; Morgan 2007), is outcome focused (Maxwell 1996, 2005; Maxwell & Loomis 2003; Tashakkori & Teddlie 1998, 2003a) and reflects actual research practice that has important social consequences (Tashakkori & Teddlie 1998: 26-27). My research is prospective and has a practical orientation; it

recommends mechanisms to accelerate the implementation of sustainable procurement in organisations.

Like transdisciplinarity, there is also a paucity of studies and frameworks for mixed-methods research. Bryman (2006: 21) states that 'the relative absence of well-known exemplars of mixed-methods research makes this exercise particularly difficult, as it means that scholars have few guidelines to draw on when writing up their findings'. To describe the relationship between each method I apply a framework developed by seminal authors in this methodology (Greene et al. 1989). Onwuegbuzie and Johnson (2006: 48) suggest the resultant validity in mixed methods combines 'inferences from quantitative and qualitative parts of the study into the formation of meta-inferences'. I apply an abbreviated version of Greene *et al.*'s (1989) template to describe the association between each method in my design, which is summarised in Table 1.

Characteristic	Refinement	Details
Methods	Different	Survey questionnaire employed a quantitative method
		Semi-structured interviews employed a qualitative method
Phenomena	Different	Survey examined Environmentally Sustainable Purchasing (ESP)
		Interviews applied the term sustainable procurement
Paradigm	Similar	Each method was conceptualised under a social-constructivist epistemology, however each method was executed with respect to its paradigmatic tradition
Implementation : Independence	Independent	Results from quantitative method influenced qualitative method to a small degree
Implementation : Timing	Sequential	Overlap in data collection was coincidental
Study	One study	Two research components

Table 1 Relationship between each method, adapted from Greene et al. (1989)

As outlined previously, I employed quantitative and qualitative methods to draw on 'different' diverse data sources and approaches. Greene *et al.* (1989) state that paradigms are similar, if as a set of methods they 'were conceptualised, designed and implemented within the same epistemological framework'. As previously outlined in Section 1.4, 'paradigmatically' the entire study was guided by a social-constructivist worldview. Therefore, while the methods are 'different', the 'paradigm' is assigned as similar.

Under one entire study I carried out the methods in a sequential order, with a large degree of autonomy, examining different phenomena. The quantitative component was confined to environmentally sustainable purchasing, while the qualitative component was sustainable procurement, so the phenomena are classified as 'different'. For convenience the methods were implemented 'sequentially', with a small overlap in time. I analysed the survey data while I started conducting interviews. It is unlikely that the order of methods would have returned different results, as they were conceptualised and executed as separate parts.

Care was taken to execute each method as an 'independent' research component, to respect 'the integrity of their methodological tradition in order to generate defensible results' (Greene 2007: 77). In the next section I outline the ethical considerations that were applied to each research component.

1.5.2 Ethical considerations

This research examines the perceptions of procurement practitioners in their progression of sustainable procurement; therefore, as it involved humans, formal ethics approval to undertake this research is required and the procedures employed to protect individuals and their organisations and ensure anonymity. The ethical considerations adopted as part of this research are detailed in the following.

Ethical considerations were applied to both studies. The quantitative research sample was recruited from members of peak industry bodies in the procurement and sustainability fields in Australia; therefore, the potential field of candidates was initially narrowed. As a routine, I telephoned the manager of the peak body, explaining my research and seeking their approval to use their organisation as a conduit to promote my survey to their member organisations. Following this, I forwarded a letter via email confirming these arrangements. I also attached some sample text that they could either post on their website, or send as a blanket email to members alerting them to the survey and inviting their participation via an email link to the university's secure site for managing surveys. I explained the online survey was visually engaging and estimated it would take participants no longer than 15 minutes to complete. My ethical responsibilities to participants and the contact details of my supervisor and the university's Ethics Manager were listed on the opening screen of the survey.

At the close of the survey, all responses were combined into one file and downloaded as a large Excel file, without any identifying information from

participants, only the categorical information forming part of the responses. From the Excel spreadsheet the data were transferred to Statistical Packages for Social Sciences (SPSS) for analysis and stored electronically on my own computer. In addition to the electronic records, the survey site had a facility to download a view of each response, without identifying the participant or their organisation. A hard copy of each response was retained as record and stored in a locked cupboard. As acknowledgment of my appreciation, I sent Christmas cards to the manager's of each participating peak body, thanking them for promoting my survey. As a condition for promoting the survey one peak body requested that I write a short professional magazine article on the findings, which was published in mid-2006.

For the qualitative research component I was diligent about the interview processes because many of the interview participants were my peers. I had prior working relationships with most of the participants or was introduced via prior relationships. Mindful of my role and responsibilities as a researcher, I applied an identical process to each participant to deliver transparency and equity to the whole sample group, detailed in Chapter 4. I expanded my research subjects beyond public sector and did not interview anyone in my jurisdiction where I was in a position of authority or perceived power. Additionally, aside from the last question, all others were based on organisational experience and not reflective of an individual's achievements or their performance.

With the exception of one multinational organisation, all participant organisations agreed to be interviewed. This company declined, as it is their policy not to give interviews, even for academic research. I responded by thanking them for their timely response and assuring them that I respected their decision not to participate and did not engage with them any further. For very large organisations, the approval process took several weeks, as it frequently required clearance from the legal and public relations departments.

Another issue that arose during the interview phase was the dual roles played by organisations, as suppliers and customers and their close association with one another through these supply chain relationships. Without knowledge of other participant organisations, several interviewees frequently raised issues about other participants. I needed to analyse these comments carefully in light of my own experience and knowledge and where possible seek clarification. There were also a few instances, when the interviewee stopped the audio recorder and asked to

remove a prior comment. I respected their wishes, erasing it, and did not include the detail in the transcripts.

As this is an emerging field with few players, I took great care in selecting verbatim comments that could not identify participants and individual organisations, particularly given there were four organisations from one industry sector represented. Every effort was made to keep the data anonymous, including the identity of individuals and organisations and information that may identify an organisation with a unique approach or attribute. As previously described, each case was allocated a code from the time of transcription, without any identifying information. Together with all associated memos and notes, these were stored on a stand-alone computer and all hard copies of data were secured in a locked cupboard accessible only to me.

To acknowledge the time and commitment of the interview participants I gave each a small gift to the value of approximately $A15 each, with significance to sustainability including a calendar or diary accompanied by a thank you note. This next section gives an overview of the six chapters that follow this introductory chapter.

1.6 Outline of the thesis

This thesis contains seven chapters, in addition to a bibliography and appendices. Table 2 displays the research questions and the focus of each chapter. This introductory chapter establishes the context for this research, its broad objectives and underlying methodological applications. Chapter 2, the literature review, examines the gap in the current literature and development in sustainable procurement theory. It proposes a theoretical framework composed of management theories, to explain the emergence of sustainable procurement through institutional theory, diffusion of innovations (DoI) theory, natural resource based view (NRBV) and stakeholder theory. This chapter charts the progression from green organisations, to green purchasing, to green sustainable procurement, to identify specific perspectives of adoption to be explored in addressing the main research question.

> *What would it take to embed sustainable procurement as a routine organisational practice in Australia?*

Chapter 3 describes the aims, method, data collection and data analysis techniques applied to the quantitative research component before reporting on the results of the survey questionnaire. The survey tests seven hypotheses drawn from international studies in the green purchasing literature. It also examines the influence of characteristics such as size, industry sector and country of ownership on adoption as well as the influence of internal processes and policies on purchasing arrangements. The rest of the chapter investigates sustainable procurement as an organisational innovation, by utilising DoI theory. This chapter reports on the current and predicted state of this practice, the stages of implementation and the attributes of sustainable procurement that will influence its rate of adoption as an innovation.

Chapter 1	Introduction and methodological issues	What are the contextual setting, aims and methodological underpinnings of this research?
Chapter 2	Literature review	Where is this research situated in the context of the literature?
		What are the current gaps in the literature that this research will fill?
		What theories will be applied to explain this research?
Chapter 3	Methods and findings for quantitative study	Where are Australian organisations along the path of sustainable procurement adoption?
		Are drivers and barriers to adoption raised in international studies applicable in Australia?
Chapter 4	Methods and findings for qualitative study	What factors are encouraging or preventing adoptions?
		Who are the stakeholders that contribute towards adoption?
Chapter 5	Arts-based inquiry interpretation of qualitative case material	What is the contribution of individual case perspectives as a collection to the understanding of adoption?
Chapter 6	Discussion of results	How do these research findings compare with the literature?
Chapter 7	Conclusion	How can organisations embed sustainable procurement?

Table 2 Outline of chapters

The next chapter focuses on the qualitative research component. It opens by describing the aims, method, data collection and data analysis techniques applied to the seventeen semi-structured interviews. Chapter 4 then presents how sustainable procurement is understood and practised by most organisations, based on interview material with leading practitioners. The chapter summaries the key motivations for adoption and the influence of internal factors, including senior management commitment; cost of sustainable products and introducing programs; staff awareness and organisational knowledge and corporate systems and performance requirements placed on suppliers in sustainable procurement, raised

by interview participants. The last part of the chapter reports on sustainable procurement from a stakeholder theory perspective, identifying the dominant stakeholders and the roles they play in collaboration and influencing adoption. It concludes by presenting a collaboration framework, documenting the key relationships between procuring organisations and stakeholders that contribute towards adoption.

An arts-based interpretation of the qualitative case material, as a discrete study, is presented in Chapter 5. The chapter commences with an overview of arts-based inquiry as a form of qualitative research and an emerging technique in organisational studies. The application of collage, as an expressive medium and the procedure employed, is explained before presenting photographs of my interpretative art works, accompanied by short vignettes that represent the 17 case studies in the qualitative research component.

Chapter 6 synthesises the findings of the previous chapters and discusses them in relation to the theoretical framework. It discusses the adoption of sustainable procurement across Australian organisations as a cohort by applying institutional theory and DoI. Within individual organisations, internal factors that contribute towards adoption are then discussed through the application of the green purchasing literature, natural resource based theory and DoI. Key stakeholders and the stakeholder culture of organisations adopting sustainable procurement is also presented by applying stakeholder theory models. This chapter closes by presenting a phase model for sustainable procurement, integrating the findings of previous chapters to document the path to excellence in sustainable procurement performance, informed by a previous model by Dunphy *et al.* (2003, 2007).

Chapter 7 clarifies the contribution of this research towards the development of theory and practices in sustainable procurement. It details individual theoretical perspectives and recommendations useful for embedding sustainable procurement as a routine organisational practice in Australia. The chapter concludes with a discussion of the research limitations and opportunities for future research.

Chapter 2, the literature review opens by establishing the gap in the literature that this thesis will fill in the sustainable procurement literature and its antecedents.

'Through their purchases governments, corporations, universities and other large institutions wield great influence over the future of our planet. Nearly every purchase an institution makes, from office paper to buildings has hidden costs for the natural environment and the world's people' (Mastny 2003: 5).

Chapter 2. Literature review

Sustainable procurement is an emergent literature and accompanied by immature theoretical development. To examine the adoption of sustainable procurement in Australian organisations I apply established strategic management theories in combination with the green purchasing literature to present the contribution of my research towards the development of sustainable procurement theory. This theoretical research framework includes institutional theory (DiMaggio & Powell 1983; Meyer & Rowan 1999), diffusion of innovations theory (DoI) (Rogers 2003), a natural resource based view (NRBV) (Hart 1995) and stakeholder theory (Clarkson 1995; Donaldson & Preston 1995).

I established several process parameters to identify the gap in the current literature and demarcate sustainable procurement as the primary research subject. All material was narrowed to scholarly writing in the form of journals and books and to a lesser extent reports and policies and in English. The review commences in 1994 with the release of one of the first articles articulating socially responsible buying (Drumwright 1994) and spans the time period up until 2009 and includes the release of several literature reviews on sustainable supply chains (Carter & Rogers 2008; Kleindorfer et al. 2005; Seuring & Müller 2008; Srivastava 2007).

This review of literature focuses on sustainable procurement and the range of terms applied to describe this practice. The extant literature reveals that terms such as purchasing social responsibility (Carter 2004, 2005), integrated supply chain management (Seuring 2004), and more recently sustainable supply chain management (Carter & Rogers 2008; Seuring et al. 2008) are used interchangeably and have similar meaning to sustainable procurement and thus have been included. While related to sustainable procurement, topics such as green supply chains, life cycle assessment, green design, product design, green marketing, reverse logistics and remanufacturing were assigned as peripheral and not germane to this research.

2.1 Research context

This thesis investigates the adoption of sustainable procurement; the experiences, relationships, approaches and motivations of Australian organisations in their transition towards adopting sustainable procurement practices. Before identifying

the gap in the literature that this thesis will fill it is appropriate to begin by contextualising the role of procurement in organisations and the background of sustainable procurement in Australian organisations.

2.1.1 The role of organisational procurement

The procurement role holds an influential position within organisations through the ways it responds to the natural environment (Zsidisin & Siferd 2001). The purview of this function extends from links to a company's environmental policy (Lamming & Hampson 1996), to supply chain relationships (Zsidisin & Hendrick 1998) and more universally as a vehicle to demonstrate sustainability, from product substitution and supplier selection to greening industry (Carter & Carter 1998; Green et al. 2000; Zsidisin & Siferd 2001) leading to the environmental transformation of economies (Green et al. 1996).

This organisational function has changed over time from largely a clerical role focused on vendor selection to one of long term relationships (Cavinato 1991) and strategic outlook (Preuss 2002, 2005b). In a contrary finding Ellram *et al* (2002: 14) in a study of the impact of purchasing and supply management activities on corporate success conclude that no matter how favourably it is viewed within an organisation it is essentially a support process'. Cox *et al* (2005: 39) found that the purchasing function suffers 'from a lack of internal support'.

While some may consign purchasing to a support function (Ellram et al. 2002) the purchasing manager is in a pivotal position to influence the flow of sustainability throughout the supply chain (Lamming & Hampson 1996; New et al. 2002). Purchasing managers are positioned on the periphery of the organisation and interact frequently with suppliers and other upstream channel members (Preuss 2007b). Carter and Jennings (2002b: 37) assert that purchasing managers are in unique position to contribute to sustainability, primarily through their interface with stakeholders which include 'customers, suppliers and regulatory agencies'. A purchasing manager's decisions and behaviour influences 'how the firm is viewed by suppliers and others outside organisations' (Carter 2000: 192). Maignan *et al.* (2002: 641) state that while corporate social responsibility (CSR) has been acknowledged at the firm level most business leaders are 'still uncertain about the implications of this concern for the purchasing function'. Carter and Rogers (2008: 361) claim that 'supply chain professionals are in an outstanding position to influence sustainability practices'. In combination, the function of organisational procurement and purchasing managers are critical to sustainable procurement

implementation. In the next section I discuss the setting for sustainable procurement in Australian organisations.

2.1.2 Sustainable procurement in Australia

The major exponents of sustainable procurement in Australia are local government and selected corporate organisations and overall the literature reports sustainable procurement as an immature practice.

Local government programs were the initial catalysts for green purchasing in Australia. Approximately ten years ago, local government introduced green purchasing projects focused on recycled products that mirrors progression in other countries (Westcott 1998). In 2000, the Victorian Government established ECO-Buy as a green purchasing program with an extensive data base of environmentally preferable products in addition to buyer and supplier mentoring programs (ECO-Buy 2008). The International Council for Local Environmental Initiatives Australia / New Zealand (ICLEI A/NZ) undertook a green purchasing pilot project between 2002 and 2003 with ten local councils across Australia (Good Environmental Choice Australia 2004).

Several other government initiatives have also supported the introduction of green and sustainable procurement. Australia's own eco label was established in 2004 with the launch of Good Environmental Choice Australia (Johnson 2004; Stephens 2006). In 2007, the Australian and New Zealand Government Framework for Sustainable Procurement was released to guide implementation in state and territory governments (Australian Procurement and Construction Council 2007). This document establishes a single policy framework for all government instrumentalities in Australia and New Zealand.

Corporate organisations have also pursued sustainable procurement, concentrating on supply chain relationships with a focus on policy development and supplier assessment processes. In 2005, the National Australia Bank co-hosted a Green Procurement Forum with Telstra and Qantas, bringing together over 100 procurement professionals to initiate the green procurement dialogue in corporate in Australia (National Australia Bank 2005). In 2004, the Westpac Banking Corporation introduced a Sustainable Supply Chain Management Policy and Guidance Note to screen suppliers for their performance in social, ethical and environmental issues management (Keating et al. 2008; Westpac 2006). Aside from some earlier examples from local government (Russel 1998) there is no

scholarly research investigating Australian organisations implementing sustainable procurement.

2.2 Research gap

Sustainable procurement in Australian organisations is in its formative stages and while there are some organisations pursuing green purchasing the practice of sustainable procurement is not widespread. This research examines mechanisms and approaches to accelerate adoption as part of organisations' contribution towards sustainability.

My research addresses several gaps in the current sustainable procurement literature. Few studies examine sustainable procurement incorporating both environmental and social criteria in a single study, few studies apply a framework of established management theories, no studies examine corporate and public organisations in Australia as one nationally unique study, and few studies recognise that sustainable procurement forms part of CSR. Cumulatively this research addresses these deficiencies in the current literature, to realise contributions towards theory development as well as practical outcomes that are likely to lead to further adoption of sustainable procurement. These research gaps are discussed in greater detail in the following section.

There are very few sustainable procurement scholarly studies from Australia. A large portion of the literature emanates from the United States, the major exponents being Carter and his co-authors, and to a lesser extent Sarkis and his co-authors (mainly focused on green supply chains) (Carter 2004, 2005; Carter & Carter 1998; Carter & Dresner 2001; Carter & Ellram 1998, 2003; Carter & Jennings 2004; Carter & Jennings 2002a, 2002b; Carter et al. 2000; Carter & Rogers 2008; Carter & Narasimhan 2000; Drumwright 1994; Min & Galle 1997, 2001). This is supplemented by literature from the United Kingdom, which includes some formative studies examining the social aspects (Green et al. 1996, 1998, 2000; Poulter & Coulton 2002; Preuss 2005b, 2007a, 2009; Walker & Preuss 2008; Wycherley 1999), some in Germany (Klassen & Angell 1998; Seuring 2004), and to a lesser extent examining supplier relationships in South East Asia (Rao 2002, 2005; Rao & Holt 2005). These are supplemented by green supply chains articles centred on China and Asia by Zhu and her co-authors (Zhu et al. 2008). Barriers and drivers to green purchasing (Gunther & Scheibe 2006) and supply chain management (Preuss 2005a; Walker et al. 2008) have been studied in other geographic settings and have also been included in this review.

Furthermore, there has not been a major shift from green or environmental to sustainable procurement encapsulating environmental, economic and social dimensions. Few existing studies examine environmental and social dimensions in a single study. Recent studies confirm the prevailing dominance of environmental issues (Carter & Rogers 2008; Seuring & Müller 2008). Seuring and Muller (2008: 1699) attest that 'the integration of the three dimensions of sustainability are still rare'. More recently, Krause *et al.* (2009: 21) state that while there has been 'progress in terms of environmental and economic issues, significant progress is generally lacking in societal and cultural issues'. This research examines sustainable procurement that encapsulates a triple bottom line perspective (Elkington 1997).

Along with a growing body of sustainable procurement studies, many scholars have continued to highlight the lack of accompanying theoretical development. As early as the late 1990s authors of environmental purchasing studies labelled theoretical progress as exploratory (Carter & Ellram 1998) and formative (Bowen et al. 2001; Sarkis 2001b; Zsidisin & Siferd 2001), suggesting more academic work is required (Green et al. 2000). Zsidisin & Siferd (2001) suggested 'integration of established theories into environmental purchasing research is needed'. Immature theory was again raised by Kleindorfer *et al.* (2005: 489), asserting that 'we are only beginning to understand and map the territory for sustainable operations management'. Most recently, Seuring and Muller (2008: 1706) conclude 'that a theoretical background is often missing' and suggest examination from a strategic management perspective.

Acknowledging these theoretical shortcomings and recommendations, I explain the path of sustainable procurement literature by applying existing management theories to establish my theoretical framework, illustrated in Figure 1. The management theories include institutional theory (DiMaggio & Powell 1983; Meyer & Rowan 1999), diffusion of innovations (DoI) (Rogers 2003), a natural resource based view (NRBV) (Hart 1995) and stakeholder theory (Clarkson 1995; Donaldson & Preston 1995). My review of literature reveals that no scholars have applied this combination of theories to explain the implementation of sustainable procurement. In addition, I apply DoI theory (Rogers 2003) to examine the potential diffusion of sustainable procurement as an innovation across Australian organisations.

The antecedents of the sustainable procurement literature originate with green supply chains and green and sustainable organisations literatures. Green and

sustainable procurement studies form part of the broader green and sustainable organisations or CSR literatures respectively. Sustainable procurement supports the CSR business model by substituting products and selecting sustainable suppliers (Carter & Carter 1998; Green et al. 2000; Zsidisin & Siferd 2001) that ultimately can lead to environmentally and socially transformed economies (Green et al. 1996; Union 2001; United Nations Commission on Sustainable Development 2003).

Organisations implement CSR in a variety of ways, giving priority to different activities and programs. Sustainable procurement is one pathway in an organisation's repertoire of responses to their corporate sustainability objectives. Carter and Jennings (2004) suggest that 'researchers should acknowledge the interrelatedness of the dimensions of purchasing social responsibility (PSR) within a broader framework of social responsibility'. Sustainable procurement is one avenue available for organisations to implement CSR.

Several authors have applied the management theories in the framework and combinations of them to sustainability studies. The natural resource based view has been used in many studies (Gupta 1995; Klassen & McLaughlin 1996; Russo & Fouts 1997) including sustainable business practices (Fowler & Hope 2007), an Australian study of manufacturing firms (Menguc & Ozanne 2005) and more recently by Moon (2007) to demonstrate the relationship between CSR and sustainable development. Institutional theory (DiMaggio & Powell 1983) has been applied recently to explain explicit and implicit CSR (Matten & Moon 2008) and the institutional determinants of CSR (Campbell 2007), ecologically sustainable organisations (Jennings & Zandbergen 1995) and environmentally legitimate firms (Bansal & Clelland 2004). Institutional theory has also been combined with NRBV in sustainable development studies (Bansal 2005) and applied in combination with stakeholder theory to explain corporate governance (Aguilera & Jackson 2003). Stakeholder theory has also been applied to studies of corporate social performance (Clarkson 1995; Wood 1991).

Overall, there are few 'innovation studies applied in the business and environment and environmental management literatures' (Berkhout & Green 2002: 227). These authors say that 'greater awareness and interaction between research in management of innovation, environmental management, corporate social responsibility and innovation and the environment will be fruitful' (Berkhout & Green 2002: 230). There has also been limited application of DoI theory to

sustainability studies (Beise & Rennings 2005; Yaw 2005), being more commonly associated with technological innovation (Kim & Srivastava 1998).

Another observable omission in the sustainable procurement literature is the absence of combined studies investigating corporate and public organisations in one study (Walker et al. 2008). Government programs by federal and state authorities in the USA and Europe have shaped the path of sustainable procurement (Case 2004; Erdmenger 2003). The progress under way in Britain implementing the Sustainable Task Force recommendations and results of a recent survey of OECD countries (DEFRA 2006; OECD 2007) confirm the contribution of public programs. Collectively governments have the capacity to create markets for more sustainable products and services (DEFRA 2006; Erdmenger 2003; Preuss 2007a; United Nations 2005). My research examines the path of sustainable procurement in both public and corporate organisations.

My research is nationally distinct: it centres on Australian organisations, as a group and as individual units adopting sustainable procurement. Several authors recommend defining boundaries for CSR studies (Clarkson 1995; Matten & Moon 2008; Wood 1991). It is framed at the organisational and institutional level by stakeholders (Aguilera & Jackson 2003; Wood 1991). Just as CSR is nationally contingent and the institutional framework of a country determines the key structural features of the firm (Matten & Moon 2008), sustainable procurement is influenced by institutional and societal settings (Aguilera & Jackson 2003).

This research addresses the gap in the current sustainable procurement literature and contributes towards the development of sustainable procurement theory and new knowledge by:

1. Theorising sustainable procurement through the lens of strategic management theories
2. Conceptualising sustainable procurement beyond environmental considerations to include social issues in a single study
3. Framing sustainable procurement in corporate and public organisations in one study.

Complementing this contribution towards theory development, as a transdisciplinary researcher into 'practical solutions to real world problems' (Max-Neef 2005; Robinson 2004), I also propose a model detailing practical steps for

organisations adopting sustainable procurement in the concluding section of Chapter 6.

Before introducing my theoretical framework, I discuss some definitions of sustainability and sustainable procurement by seminal authors before presenting my own definition of sustainable procurement.

2.2.1 Defining sustainability and corporate social responsibility (CSR)

Sustainable development and sustainability are highly contested terms (Matten & Moon 2008) open to a wide variety of meanings and ambiguity; therefore, I outline some of the interpretations that proliferate before establishing my application of the terms for this thesis. In 1987, Dr Gro Harlem Brundtland introduced the best-known definition of sustainable development, which is now widely accepted as the basis for any discussion of issues related to sustainable development. Brundtland defined it as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987). Australia's National Strategy for Ecologically Sustainable Development 1992 (NSESD) defines ecologically sustainable development (ESD) as 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased' (NSESD 1992).

Over time definitions of sustainability and corporate social responsibility have evolved, responding to different settings and requirements. CSR responds to issues beyond economic, technical and legal requirements (Davis 1973) as business, natural and societal cases (Dyllick & Hockerts 2002) that affect different social groups (Sethi 1995) and as a 'total responsibility' perspective (Waddock et al. 2002).

Corporate social responsibility extends organisations' responsibilities beyond the environment to include social, ethical and governance issues. Carroll (1979) suggests that social responsibility definitions should 'address the entire range of obligations business has to society including economic, legal, ethical and discretionary categories of business performance' (Carroll 1979: 499). Bansal (2005) suggests that organisations must apply the three principles of environmental integrity, corporate social responsibility and economic prosperity to their operations in order to express sustainable development. Moon (2007) claims CSR is orientated towards strategic purposes (legitimacy, responsibility for

externality, competitive advantage), substantive content (economic, legal, ethical, discretionary), and approaches deployed depending on which stakeholders polices are directed. Recently, Dahlsrud (2008) isolated five constant themes in CSR definitions which include social, environmental, economic, stakeholder and voluntariness dimensions.

In this thesis, I apply the descriptor 'sustainable' to include social, environmental economic and stakeholder considerations when referring to organisations, supply chains and procurement. When discussing solely environmental considerations I apply 'environmental' or 'green' to organisations and procurement. When referring to 'social' factors it includes ethical purchasing and socially responsible supply chain practices including fair trade and organic products, the fair and equitable treatment of employees in purchasing organisations and employees in supplier organisations, in their supply chains and in the communities in which they operate.

2.3 Definitions of sustainable procurement

This section discusses definitions of sustainable procurement and its predecessors. Table 3 charts the progression of sustainable procurement definitions from key authors in the field and the focus of their definitions, environmental, social, economic stakeholder and additional criteria. It commences with Drumwright in 1994 and concludes with Carter and Rogers in 2008, incorporating definitions drawn from scholarly journals, government and multilateral groups. Aside from one Australian definition from the Australian Procurement and Construction Council (2007), these definitions are predominantly international examples. In agreement with Carter and Rogers (2008), my review shows that most definitions consider 'sustainability from an ecological perspective, without explicit incorporation of the social aspects of sustainability' (Carter & Rogers 2008: 363). The paragraphs below explain in more detail the evolution in sustainable procurement terms.

Sustainable procurement is a new literature and as Gladwin *et al.* (1995) note, 'definitional diversity is to be expected during the emergent phase of any potentially big idea of general usefulness' (Gladwin et al. 1995: 876) and this is equally applicable to the evolution in sustainable procurement. Early definitions of sustainable procurement and its variations set the foundation for theory development, from green to a more multifaceted approach to include combinations of environmental, social, ethical and economic elements. Procurement definitions are frequently underpinned by the concept of value for money or economic considerations and this is most pronounced in government definitions. 'Value for

money requires a comparative analysis of all relevant costs and benefits of each proposal throughout the whole procurement cycle' (Commonwealth of Australia 2008: 10). While most of the definitions presented in the following imply the inclusion of economic considerations or value for money, this is made explicit in sustainable procurement government definitions (Australian Procurement and Construction Council, 2007; DEFRA 2006, UNEP 2001).

Authors have applied a range of terms to describe sustainable procurement such as supply chain management, logistics, purchasing and procurement interchangeably to present their own customised interpretations, which is indicative of an emerging scholarly literature in its formative stages (Carter & Rogers 2008; Kuhn 1970).

Drumwright (1994) established the initial definition of 'socially responsible organisational buying' grounded on social issues, incongruent with the prevailing concerns of the time which centred on waste reduction and pollution control addressing environmental or a NRBV (Hart 1995). Towards the beginning of 2000 environmental issues dominated purchasing and definitions adopted an efficiency perspective that concentrated on resource and waste reduction, product reuse, and recycling (Carter & Carter 1998; Carter & Ellram 1998; Carter et al. 2000; Min & Galle 2001; Zsidisin & Siferd 2001). Consistent with a NRBV (Hart 1995) and acknowledging over consumption of resources as a contributor to unsustainable development (Shrivastava 1995), Erdmenger (2003) proposes a life cycle approach in his definition of 'eco procurement' (Erdmenger 2003).

From a strong environmental base, definitions expanded by incorporating additional features. Following the release of a special issue of *Greener Management International* in 2003, attention was directed to social and ethical issues related to supply chains (Wehrmeyer 2003). Aspects of ethical purchasing include supporting smallholder commodity growers of products such as tea, coffee and cocoa (Blowfield 2003), contributing to local employment (Fossgard-Moser 2003), purchasing organic commodities such as cotton (Goldbach et al. 2003; Kogg 2003), supporting home workers (Freeman 2003) and purchasing fair trade labelled goods (Auroi 2003; Courville 2003). Ochoa *et al.* (2003) noted a growing support and recognition for a broader and more robust definition of sustainable procurement that integrates social and ethical standards into production processes. It was not until the mid-2000s that the three pillars of sustainability, (economic, environmental and social) received collective attention and acceptance in the purchasing literature. Maignan *et al.* (2002) directly acknowledged stakeholders'

issues in their definition of socially responsible buying, and recently Seuring and Muller (2008) also made reference to stakeholders. Carter and Rogers (2008) also acknowledge engaging suppliers as part of improving transparency (Carter & Rogers 2008). Carter and Jennings (2002a) introduced 'logistics social responsibility' which included the elements of environment, diversity, human rights, safety, philanthropy and the community as a precursor to 'purchasing social responsibility' (Carter 2004; Carter & Jennings 2002b). Purchasing social responsibility incorporates activities relating to the environment, diversity, human rights, philanthropy and safety (Carter & Jennings 2002b: 40). Diversity includes purchasing from minority business enterprises (Carter et al. 1999). Human rights issues include monitoring for no sweet shop and child labour and paying a living wage. Philanthropy includes volunteering at local charities and donations to philanthropic organisations. Safety includes ensuring suppliers' locations are operated in a safe manner and ensuring the safe, incoming movement of products to the buyers' facilities (Carter 2004; Carter & Jennings 2004; Carter & Jennings 2002a, 2002b). Building on this wider perspective Carter and Rogers (2008) expand sustainable supply chain management to include transparency and risk management. These definitions started to articulate the inclusion of a broader range of concepts based on earlier CSR advocates (Carroll 1979; Davis 1973).

Concurrent with evolving definitions in the scholarly literature, public authorities in the early 2000s began to define sustainable procurement. These definitions reinforce the enabling aspects of the practice, commencing with the United Nations Environmental Program (UNEP 2001). Following this the UK Government and the Australian Ministerial Procurement Council established national sustainable procurement implementation frameworks (Australian Procurement and Construction Council 2007; DEFRA 2006).

Wolters (2003) was one of the first authors to coin the term 'sustainable supply chain management' and this was reinforced recently (Carter & Rogers 2008; Seuring & Müller 2008). This demonstrates a maturing definitional viewpoint, analogous to the sustainable organisations literature referencing stakeholder theory and the NRBV (Clarkson 1995; Freeman 1984; Hart 1995; Sharma & Vredenburg 1998). At the same time these authors acknowledge the role of purchasing in relation to organisational goals, stakeholders requirements and competitive advantage (Carter & Rogers 2008; Seuring & Müller 2008).

Definition	Author	Focus of definition
Socially responsible organisational buying is 'that which attempts to take into account the public consequences of organisational buying or bring about positive social change through organisational buying behaviour'	(Drumwright 1994: 1)	Social purchasing
Purchasing social responsibility is 'the involvement of purchasing managers in socially responsible activities'	(Carter & Jennings 2002b: 38)	Social purchasing
Socially responsible buying is 'the inclusion in purchasing decisions of the social issues advocated by organisational stakeholders'	(Maignan et al. 2002:642)	Social purchasing Stakeholder theory
Ethical sourcing is where 'a company at one part of the supply chain (typically a brand owner, retailer or other Western company with a public profile) takes responsibility for the social and/or environmental performance at other stages of the chain, especially for that of primary producers'	(Blowfield 2003: 16).	Social and environmental purchasing
Purchasing social responsibility is 'purchasing activities that meet the ethical and discretionary responsibilities expected by society'	(Carter & Jennings 2004: 151)	Social purchasing
Green supply is 'the way in which innovations in supply chain management and industrial purchasing may be considered in the context of the environment'	(Green et al. 1996: 188)	Environmental purchasing
Environmental purchasing is 'the purchasing function's involvement in activities that include reduction, recycling, reuse, and substitution of materials'	(Carter & Carter 1998)	Environmental purchasing
Reverse logistics is 'a process whereby companies can become more environmentally efficient through recycling, reusing and reducing the amount of materials used'	(Carter & Ellram 1998: 85)	Environmental purchasing
Environmental supply chain management is 'the purchasing function's involvement in activities that include reduction, recycling, reuse, and the substitution of materials'	(Carter & Narasimhan 2000: 6)	Environmental supply chain
Green purchasing is 'an environmentally conscious purchasing practice that reduces sources of waste and promotes recycling and reclamation of purchased materials without adversely affecting performance requirements of such materials'	(Min & Galle 2001: 1223)	Environmental purchasing
Environmental purchasing 'is the set of purchasing policies held, actions taken, and relationships formed in response to concerns associated with the natural environment. These	(Zsidisin & Siferd 2001: 69).	Environmental purchasing

Definition	Author	Focus of definition
concerns relate to the acquisition of raw materials, including supplier selection, evaluation and development; suppliers' operations, in-bound distribution, packaging, recycling, reuse, resource reduction, and final disposal of the firm's products'		
Environmentally conscious purchasing is 'the process of formally introducing and integrating environmental issues and concerns into the purchasing'	(Handfield et al. 2002: 72)	Environmental purchasing
Eco procurement 'encompasses all activities that aim to integrate environmental considerations into purchasing processes, from the identification of the need, through the selection of an alternative, to the provision to the user'	(Erdmenger 2003: 11)	Environmental purchasing
Sustainable procurement is 'the process in which organisations buy supplies or services by taking into account: • the best value for money considerations such as, price, quality, availability, functionality, etc. • environmental aspects ("green procurement": the effects on the environment that the product and/or service has over its whole lifecycle, from the cradle to the crave) • the entire life cycle of products social aspects: effects on issues such as poverty eradication, international equity in the distribution of resources, labour conditions, human rights'	(UNEP 2001).	Value for money Environmental Social
Sustainable procurement 'is a process whereby organisations meet their needs for goods, works and utilities in a way that achieves value for money on a whole of life basis in terms of generating benefits not only to the organisation, but also to society and the economy, while minimising damage to the environment'	(DEFRA 2006: 10)	Value for money Environmental and social procurement
Sustainable procurement 'means that when buying goods and services organisations practicing sustainable procurement will consider: • strategies to avoid unnecessary consumption and manage demand; • minimising environmental impacts of the goods and services over the whole of life of the goods and services; • suppliers' socially responsible practices including compliance with legislative obligations to employees; and • value for money over the whole-of-life of the goods and services, rather than just initial cost'	(Australian Procurement and Construction Council 2007: 5)	Environmental and social procurement

Definition	Author	Focus of definition
Sustainable chain management is 'working towards enhancing the social and environmental performance as well as the economic performance (quality) of the processes that are necessary to grow, process, transport and sell a product'	(Wolters 2003: 7)	Environmental and social supply chain
Green supply chain management is 'integrating environmental thinking into supply chain management, including product design material sourcing and selection, manufacturing processes, delivery of the final product to consumers as well as end of life management of the product after its useful life'	(Srivastava 2007: 54)	Environmental supply chain
Sustainable supply chain management is 'the management of material and information flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e. economic, environmental and social, and stakeholder requirements, into account'	(Seuring et al. 2008: 1700)	Environmental and social supply chain Stakeholder theory
Sustainable supply chain management is 'the strategic, transparent integration and achievement of an organisation's social, environmental and economic goals in the systematic coordination of key interorganisational business processes for improving the long term economic performance of the individual company and its supply chain'	(Carter & Rogers 2008: 368).	Environmental and social supply chain

Table 3 Definitions of sustainable procurement

2.3.1 Definition of sustainable procurement adopted in this thesis

Like many authors, my definition builds on green procurement to incorporate a wider social perspective and connects with organisational objectives and stakeholder considerations, which resonates with several recent definitions (Australian Procurement and Construction Council 2007; Carter & Rogers 2008; Seuring et al. 2008). Many organisational theorists suggest that sustainability programs must be integrated within corporate structures (Hart 1995; Shrivastava 1995) and sustainable procurement should be seen as part of organisational operations and performance (Carter & Rogers 2008). As a strategic organisational function (Preuss 2002, 2005b) I propose that sustainable procurement forms part of an organisation's strategy and management systems to address societal problems and the disruptions to the natural environment through two distinct dimensions that complement each other: the products purchased and the selection of suppliers (Bowen et al. 2001; Preuss 2005b; Seuring et al. 2008); in essence

sustainable procurement centres on prudent choices, the products and suppliers an organisation selects.

Fundamental to any definition of sustainable procurement is acknowledging that all forms of purchasing contribute towards consumption and consequently towards the degradation of the natural environment and depletion of non-renewable resources. The most desirable solution from a sustainable procurement perspective is not to purchase at all and pursue alternative strategies to meet an organisational need such as sharing equipment, leasing or refurbishing existing goods. Consequently, from a definitional perspective there needs to be a clear recognition of product impacts and life cycle considerations. This extends from raw material extraction, manufacture, transport, to ultimate disposal or reuse and the health, safety and equitable treatment of employees and communities associated with the manufacture and use of the products. My own definition is:

> Sustainable procurement is where organisations respond to their organisational objectives by engaging with stakeholders in the selection of suppliers, products that represent value for money and apply processes that respect the integrity of the natural environment and societal responsibilities to the community.

This section has examined and appraised the evolution in terms used to describe sustainable procurement and its antecedents and concludes with my own definition. This serves as a point of reference for the discussion of sustainable procurement framed by management theories outlined in the next section.

2.4 Theoretical framework

As discussed previously, a lack of theoretical development has accompanied the growth in sustainable procurement studies (Carter & Rogers 2008; Seuring & Müller 2008; Zsidisin & Siferd 2001). Before finalising my theoretical framework I appraised a number of theories for potential application, including transaction theory analysis, drawn from logistics and supply chain management literature (Grover & Malhotra 2003), actor network theory (Callon 1996) and ecological modernisation theory that rose to prominence in the early 2000s with the release of a special issue of *Geoforum* (Buttel 2000; Mol 2000).

There were some precedents for applying ANT and EMT to sustainability research, however, these studies mainly examined change programs from an historical perspective and the influence of broad brush factors. By contrast, sustainable

procurement was in its formative stages of implementation and over the course of my candidature it became apparent that introducing sustainable procurement often formed part of the path to corporate sustainability; therefore, a logical starting point was management theories. In addition, applying a range of theoretical perspectives drawn from the management literature allowed me to examine influencing factors within and between organisations, and as evidenced in the literature review. These theories include institutional theory (DiMaggio & Powell 1983; Meyer & Rowan 1999), DoI (Rogers 2003), NRBV (Hart 1995) and stakeholder theory (Clarkson 1995; Donaldson & Preston 1995). Together these theoretical complementarities present a framework to explain organisational elements pertaining to individual organisations that influence adoption, using natural resource based theory as a foundation in concert with mechanisms that spread the practice between organisations, explained by diffusion of innovations and institutional theories, as illustrated in Figure 1.
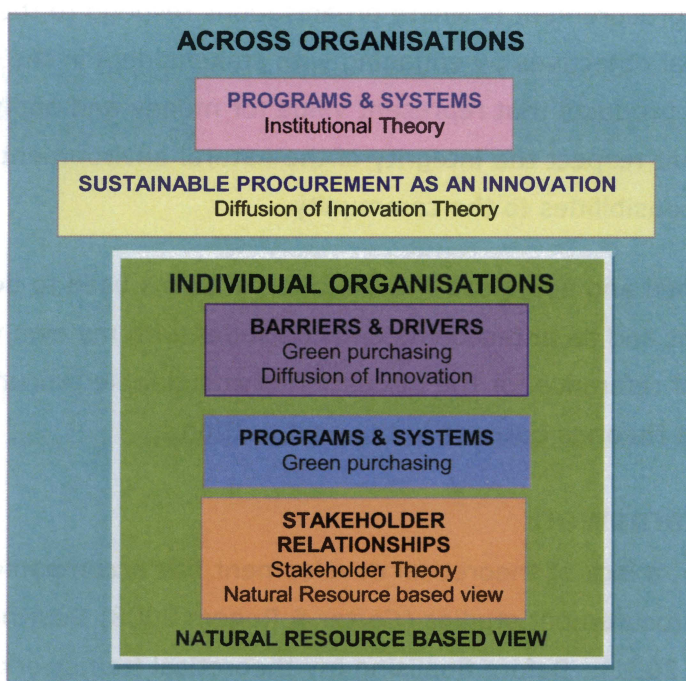
Figure 1 Theoretical framework for sustainable procurement

I now discuss the theories that will be applied to address the main research question, which asks *what it would take to embed sustainable procurement as a normative organisational practice.* To shed light from the literature on this question several sequential steps and a variety of theories mentioned above follow (see Figure 1). To begin I apply institutional theory to explain the mechanisms and programs that spread sustainable procurement across organisations as a group. DoI theory explains the current state of this practice and the timetable for the likely diffusion across Australian organisations as a routine practice. The next step is to

identify what is preventing and encouraging sustainable procurement adoption. To examine the barriers and drivers I discuss the green purchasing literature in conjunction with the attributes of sustainable procurement as an organisational innovation, again applying DoI. I apply NRBV and stakeholder theory to examine organisations motivations to adopt sustainable procurement. Stakeholder theory is applied again to identify and explore the influence and role played by stakeholders in this practice. I commence by outlining natural resource based theory. Drawing on the previous theories I discuss phase models for sustainable organisations to explain the incremental steps to embed sustainable procurement.

2.5 Interorganisational influences on adoption

2.5.1 Institutional theory

Institutional theory explains homogenisation amongst organisational types and why organisations mimic others in the quest for legitimacy. This theory provides one explanation of why, when one organisation in a sector adopts corporate sustainability, it is conceivable that through mimetic processes others will imitate. Consequently institutional theory can also be used to elucidate the proliferation of sustainable procurement across organisations. A brief outline of institutional theory follows before discussing examples in CSR literature that use this theory.

The concepts behind institutional theory originate with Myer and Rowan (1977). However, the seminal authors who shaped and refined the notion of mimetic tendencies of organisations were DiMaggio and Powell (1983) and their three key concepts are most frequently referenced by authors applying this theory. Meyer and Rowan (1977: 340) explain institutionalised organisations by stating that 'organizations are driven to incorporate the practices and procedures defined by prevailing rationalised concepts of organizational work and institutionalised society. Organizations that do so influence their legitimacy and their survival prospects, independent of the immediate efficacy of the acquired practices and procedures'.

Institutional theory has several unique characteristics and is particularly useful in classifying similar organisations into groups for research and identifying mechanisms that spread practices like sustainable procurement between organisations. Building on this principle DiMaggio and Powell (1983: 147) argue that 'bureaucratisation and other forms of organisational change occur as the result of processes that make organisations more similar without necessarily making them more efficient'. They attest similar organisations 'constitute a recognised area of institutional life: key suppliers, resource and product consumers, regulatory

agencies and other organisations that produce similar services or products' (DiMaggio & Powell 1983: 148). Defining an organisational field such as suppliers and regulators focuses attention on an entire group as a unit of analysis.

DiMaggio and Powell (1983) state that institutional isomorphic change occurs through three mechanisms:

1. Coercive isomorphism that stems from political influence and the problem of legitimacy
2. Mimetic isomorphism resulting from standard responses to uncertainty
3. Normative isomorphism associated with professionalization.

'Coercive isomorphism' results from both formal and informal pressures exerted on organisations by other organisations on which they are dependent and by the cultural expectations in the society within which organisations function (DiMaggio & Powell 1983). Coercive pressures may be felt as force, such as regulatory imposts, like product take-back legislation for electronic and electrical equipment (European Union 2002) or as invitations to join in collusion, such as public purchasing programs. The most frequent form of coercive isomorphism in sustainable procurement is the compliance requirements placed on suppliers.

'Mimetic isomorphism' occurs when organisations model themselves on other organisations in times of uncertainty, such as poorly understood or ambiguous goals. The modelled organisation may be unaware of the modelling or may have no desire to be copied; it merely serves as a convenient source of practices that the borrowing organisation may use (DiMaggio & Powell 1983). Voluntary instruments and codes centred on sustainability are forms of mimetic isomorphism that have a moderating effect on the adoption of sustainable procurement. Alliances and networks supporting adoption also encourage organisations to adopt mimetic sustainable purchasing practices.

'Normative pressures' also deliver isomorphic organisational changes that derive from educational institutions that establish professional norms reinforced by professional networks. Educational institutions specialising in procurement and sustainability as well as professional procurement-based networks such as the Chartered Institute of Purchasing and Supply, Australia (CIPSA) assist the spread of sustainable procurement through normative pressures.

In the following sections I discuss these three isomorphic mechanisms (coercive, mimetic and normative) and the mechanisms and instruments that spread sustainable procurement across organisations.

2.5.2 Coercive isomorphic influences

Several coercive instruments and mechanisms influence the spread of sustainable procurement. In addition to legislation (Porter & Van der Linde 1995), policy frameworks aimed at improving sustainability performance in organisations within a sector have spread sustainability. Another means of enforcing sustainability is down the supply chain from the procurer to the supplier, imposing sustainability standards as part of the contracting process. These three coercive mechanisms, namely regulation, public procurement policies and programs and supplier assessment programs are discussed below.

2.5.2.1 Regulation

Several authors have suggested that regulation would lead to greater proliferation of environmentally innovative products (Porter & Van der Linde 1995) and consequently stimulate sustainable procurement programs. Walton *et al.* (1998) suggest that environmental issues are being embedded in an organisation's strategy due to the regulatory conditions and accountability. Min and Galle (2001) found organisations that take environmental regulatory compliance more seriously were likely to be undertaking green purchasing. In response to pollution control and waste reduction legislation the supply of recycled products grew rapidly in the US in the 1990s. Campbell (2007) proposed that corporations are more likely to act in socially responsible ways the more they encounter strong state regulation, collective industrial self-regulation, NGOs and other independent organisations that monitor them, and a normative institutional environment that encourages socially responsible behaviour (Campbell 2007). Zhu and Sarkis (2007: 4352) found 'manufacturers facing higher regulatory pressures tend to better implement green purchasing and investment recovery'. Carter and Jennings (2004) found that government regulation was not a significant driver of sustainable procurement (Carter & Jennings 2004). These findings are drawn from international studies, whereas regulation in Australia is distinctively different.

While organisations are subject to environmental regulations governing waste, hazardous material and pollution, overall sustainable procurement is not legislated in Australian organisations, but there are a few exceptions. Federal government agencies are mandated to implement sustainability under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and some state

government agencies are required to implement an environmental management system (EMS). These requirements are likely to result in agencies' adopting sustainable procurement, but this is not a certainty.

2.5.2.2 Public procurement programs

Public procurement policies mandating departments to adopt green and sustainable procurement have been significant conduits of coercive isomorphism, changing purchasing behaviour in public agencies and the sustainability of suppliers to governments. Public procurement has received growing attention as a policy instrument to promote greener products in the United States, Canada, Austria, Denmark, Finland, the Netherlands, Sweden and Switzerland (Li & Geiser 2005), gaining momentum towards the end of the 1990s and underpinned by a strong waste reduction focus advocating the purchase of recycled products (Erdmenger 2003; Mastny 2003; Russel 1998). However some question that 'the full potential of green purchasing has not yet been reached' (Ochoa et al. 2003: 25).

Waste reduction legislation like the *Resource Conservation and Recovery Act* (RCRA) in the USA called for an increase in the federal government's use of recycled content and other environmentally preferable products in 1976 and, by 1998, 47 states and more than 500 local governments had adopted buy-recycled policies (Case 2004). Japan started activities in 1980 with an eco-labelling scheme culminating in the establishment of the Green Purchasing Network and in 2001 eventuating in a green purchasing mandatory directive for all national departments (Erdmenger 2003). Coercive directives such as Japan's mandatory green purchasing policy are likely to send a strong message to other sectors to adopt sustainable procurement as a result of mimetic behaviour.

From a waste reduction focus, efforts to promote green public procurement internationally were reinforced in 2002 when the Organisation for Economic Co-operation and Development (OECD) Council recommended that governments should take concrete steps to 'improve the environmental performance of public procurement' (OECD 2002). A review of this directive reports that only seven member states demonstrated an 'advanced level' of environmental purchasing performance (OECD 2007: 22). In 2002, Britain broadened its procurement agenda beyond green to sustainable procurement recommending all agencies develop a sustainable procurement policy by January 2005 (Poulter & Coulton 2002). This was recently strengthened with a pledge by the UK Government to be amongst the leaders in sustainable procurement in the European Union by 2009 (DEFRA 2006). Murray (2000) draws attention to the strategic contribution purchasing can make to

local government suppliers in delivering environmental stewardship through education, supplier awards and selection of environmentally preferable products.

Government procurement programs are important sources of isomorphism stimulating mimetic behaviour within and potentially across sectors outside government. Their collective substantial spending has far-reaching influences to support and encourage more sustainable product alternatives in creating a more sustainable economy (Erdmenger 2003; Green et al. 1996). As national governments adopt sustainable procurement programs this has the potential to provide impetus for other levels of government and other sectors including corporations to mimic theses programs and processes and spread sustainable procurement.

2.5.2.3 Supplier relationships

Supplier relationships can be strong forms of isomorphic coercion. Aside from regulation and government programs, coercive isomorphism is also channelled through supplier relationships, where procuring organisations place contractual requirements on suppliers as part of the contracting process, frequently as standardised conditions (Callender & Matthews 2003).

Supplier assessment programs have contributed to the greening of suppliers (Rao 2002, 2005; Wycherley 1999) and the spread of corporate social responsibility by coercive isomorphic pressures (DiMaggio & Powell 1983). Noci (1997) argued that supply chain management is the most advanced stage of green management and recommends identifying supplier environmental performance indicators and formally measuring and selecting suppliers. Preuss (2005b: 129) noted that 'if supply chain managers were serious about the environmental performance of their company and its products then environmental credentials of suppliers should emerge as one criterion to influence supplier selection'. Suppliers are evaluated and accredited through rating systems as part of a sustainable purchasing policy to determine sustainability performance (Green et al. 1998; New et al. 2002; Noci 1997) and customised to individual sectors and procurement initiatives (Rimmington et al. 2006).

As part of the supplier assessment process, organisations typically require suppliers to attain third party certification accreditation to ISO 9001 series for quality management. Environmental management assurances are now becoming frequent and in some cases are mandatory (Darnell et al. 2008). Matten and Moon (2008) claim compliance with environmental standards, including ISO 14000 and Eco-

Management and Audit Scheme (EMAS), applied through the supply chain imposes coercive isomorphism on a range of organisations. Imposing sustainability requirements on suppliers has implications down the supply chain to suppliers' suppliers and subsequent tiers (Preuss 2005b) and ultimately these are likely to become minimum organisational standards.

Applying assessment programs to suppliers can have other attendant benefits to purchasing organisations that also support sustainable procurement adoption and assist purchasing managers. Carter and Jennings (2002b: 48), found that 'increased involvement by purchasing managers in socially responsible activities lead to improved trust in and increased supplier performance'. Bowen *et al.* (2001) suggested that implementing an environment-related supplier program may help purchasing managers manage risk and felt they had the capabilities in purchasing to improve the environmental performance of suppliers (Bowen et al. 2001).

There is a range of approaches to implementing supplier assessment programs. Rao and Holt (2005) suggest green purchasing strategies revolve around two components: the evaluation of suppliers' environmental performance and mentoring to assist suppliers improve this performance (Rao & Holt 2005: 901). A critical element to note however in relation to this study is the small sample size, making it difficult to generalise these findings across regions. Preuss (2005b: 125) suggested when 'the buyer requires environmental issues in addition to quality and price of the supplier their relationship can become a facilitator for interorganisational learning'. In a recent survey of OECD national governments few reported that they mandated suppliers to have an EMS or restricted product selection to only eco-labelled (OECD 2007: 12). These findings show that organisations are facilitating the transfer of sustainability in a co-operative and supportive manner through supplier assessment programs and through interorganisational learning and mentoring, as opposed to sanctioning suppliers for non-conformance.

In the absence of regulation, the coercive forces placed on suppliers through assessment programs are the most powerful of three mechanisms to spread sustainability through sustainable procurement. Sustainable procurement and formalised supply chain assessment programs exist in some corporations (Australia and New Zealand Banking Group Limited 2008; Westpac 2005), but this is not widespread in Australia. While many authors claim that regulation is a conventional path to sustainability and innovation (Beise & Rennings 2005) and supply chain coercion (Matten & Moon 2008), another way to examine the spread of sustainable

procurement is through mimetic behaviour as a source of organisational legitimation.

2.5.3 Mimetic isomorphism

Voluntary programs and systems act in tandem with coercive instruments to spread the introduction of sustainable procurement. Institutional theory is increasingly being used to describe the spread of corporate sustainability (Aguilera & Jackson 2003; Campbell 2007; Jennings & Zandbergen 1995) and some of these themes overlap with the introduction of sustainable procurement programs (Zhu & Sarkis 2007) Organisational sustainable procurement is spread by mimetic tendencies through frameworks, systems and alliances.

2.5.3.1 Influence of corporate sustainability frameworks

There are several voluntary frameworks and systems that encourage organisations to implement CSR. Increased self regulation and voluntary initiatives, instruments and reporting frameworks such as the Global Reporting Initiative (GRI) have contributed to homogeneity in organisational forms (Matten & Moon 2008). Several authors have highlighted codes of practice for ethical sourcing including the Base Code of the Ethical Trading Initiative (ETI), International Labour Organization (ILO) conventions and SA 8000 (Blowfield 2003; Preuss 2009; Roberts 2003). These types of codes are one mechanism used by companies to guarantee that products purchased meet specific environmental and social standards (Roberts 2003). Courville (2003: 104) suggests that these sustainability tools 'should strive towards greater harmonisation, at least in terms of the methodologies used for indicator development, measurement, verification and reporting'.

By adopting these voluntary instruments organisations differentiate themselves from their peers and as part of this process frequently review their procurement activities for alignment with CSR objectives. Preuss (2009: 739) found that 'most organisations instigated an ethical sourcing code for competitive advantage as a differentiation strategy'. As discussed in Section 2.5.2.3, these frameworks and instruments are also used as conformance criteria in supplier assessment programs. Sharma (2000: 691) found 'that in an industry subject to strong institutional pressures, companies do exercise strategic choice by undertaking voluntary environmental strategies that go beyond conformance to environmental regulations and common industry practices'. Through mimetic tendencies organisations in the same industry sector adopt similar frameworks and systems, which precipitate sustainable procurement adoption as a framework condition. Environmental management systems are other forms of mimetic isomorphism.

2.5.3.2 Corporate environmental management systems

Before adopting sustainability frameworks, organisations frequently implement a corporate EMS as a compliance standard and a verification of a commitment to environmental sustainability. As far back as the early 1990s Lamming and Hampson (1996) identified British Standard 7750 as a contributing factor to the promulgation of green supply chains and environmental purchasing. The introduction of the European Union's EMAS and the International Standards Organisation's (ISO) 14000 series have been an influencing factors in environmental policies, indicating preferences for green products and suppliers (Green et al. 1996; Handfield et al. 2005; Klassen & Angell 1998; Rao 2005; Sarkis 2001a, 2001c; Walton et al. 1998). Several authors coined the phrase total quality environmental management and variations to combine environment and quality management systems (Hart 1995; Lamming & Hampson 1996; Shrivastava 1995). Rao (2002) concluded that in South East Asia, greening of the supply chain was starting, especially in leading ISO 14000 certified companies. Chen (2005) found that environmental purchasing is an effective tool in controlling pollution externalities and provides a positive effect on the implementation of ISO 14001 environmental management and to green purchasing into the framework. As discussed in Section 2.5.2.3 frameworks and systems are also forms of coercive isomorphism imposed on suppliers. Linking stakeholder and institutional theory, Roberts (2003: 163) found 'that companies are more likely to implement codes if external stakeholder pressure to do so is strong and external concerns are related to the company's core business and environmental strategy'. Based on these studies it can be deduced that the institutionalisation of environmental management systems as a minimum corporate standard of performance results in a growth of environmental purchasing.

2.5.3.3 Role of alliances and networks

Mimetic tendencies leading to the adoption of sustainable procurement amongst organisations are disseminated by sustainability programs and alliances. As part of the path towards corporate responsibility organisations are frequently made aware of their procurement and supply chain responsibilities through these instruments. Matten and Moon (2008) cite mimetic processes, including membership of business alliances such as the United Nations Global Compact and Dow Jones Sustainability Index, which seek to institutional practices across member organisations and alliances with government networks to foster sustainable business practices. In Australia there are several examples of organisations joining alliances with environmental non-government organisations (ENGO) to assist their progression in sustainable procurement. The Buy Recycled Business Alliance (BRBA) is a non-

profit organisation formed to promote the purchase and use of recycled content products and alliance members commit to produce recycled products as well as purchase recycled products (Buy Recycled Business Alliance 2008). In Canada, the Corporate Environmental Innovation Initiative is a partnership-based government initiative designed to help accelerate innovation and to improve the environmental performance of companies bringing together industry, finance sector academics, NGOs and other departments. The program demonstrates 'a growing awareness of the role of government leadership and intervention to support and reward corporate social responsibility in the market system' (Moffat & Auer 2006: 599). The value of these collaborative forms of mimetic isomorphism is that they are frequently facilitated by third parties, NGOs or government to assist organisations that may be competitors and peers to change to more sustainable practices including procurement.

Collaboration within and across sectors is equally applicable for implementing successful sustainable procurement. A recent OECD report recommended greater intergovernmental and intragovernmental co-ordination would lead to more effective and efficient greener public purchasing programs by member countries (OECD 2007). Preuss (2007a: 364) suggests that local authorities in the UK could 'explore opportunities for sharing know-how with other buying organisations, across the public and private sectors'.

Innovation networks are also becoming more prevalent (Bessant & Tidd 2007; Foster & Green 2000; Von Hippel 2005). Innovation networks 'build links outside the organisation to implement innovations for sustainability' (Bessant & Tidd 2007: 337) and 'innovation communities can increase the speed and effectiveness with which users and also manufacturers can develop and test and diffuse their innovations' (Von Hippel 2005: 10). Foster and Green (2000: 289) suggest that 'the flow of information and the signals between these different groups is perhaps more important than the links themselves'.

Mimetic isomorphism influences organisations to adopt sustainable frameworks and practices such as sustainable procurement as a form of legitimacy amongst their peers, which in turn makes organisations audit their purchasing polices and procedures for compliance. As part of this process, alliances and networks facilitated by third parties support the introduction of sustainable procurement.

2.5.3.4 Normative sources of isomorphism

Sustainability is also diffused through educational and professional network influences that establish standards of organisational practices embedded in educational institutions and augmented by professional networks and trade associations (Campbell 2007). In Australia, the CIPSA delivers training courses in socially responsible procurement as part of members' ongoing professional development. In a study of manufacturing firms, Preuss (2005b) notes the role of industry associations, such as the Institute of Supply Management (ISM) in the US and the Charter Institute of Purchasing and Supply (CIPS) in the UK in disseminating information and promoting awareness of environmental issues around supply chain issues.

In summary, some of the institutional instruments that lead to the isomorphism among organisations in the spread of sustainable procurement have been outlined. These include the coercive effects of regulation, public procurement programs and supplier assessment. Sustainability frameworks and instruments act as coercive and mimetic forces in the diffusion of sustainable procurement, while networks or organisations and professionals also contribute to adoption. The practice of sustainable procurement in Australian organisations is predominantly a voluntary organisational response leading to the following research questions.

> *How is sustainable procurement spread amongst Australian organisations?*
> *What are the institutional mechanisms at play that lead towards the diffusion of sustainable procurement?*

This section has discussed some of the isomorphic influences that contribute towards the spread of sustainable procurement across organisations. Innovation theories can also explain the spread of sustainable procurement from one organisation to another. Abrahamson and Rosenkopf (1993) suggest that the sheer number of organisations adopting an innovation can cause bandwagon pressure, prompting other organisations to adopt an innovation because non-adapters fear appearing different from other adopters, which is similar to institutional theory. However, a point of departure is competitive bandwagons where organisations fear non-adoption may jeopardise performance (Abrahamson & Rosenkopf 1993). The next section outlines the contribution of several theorists to the organisational innovation and sustainability literature before detailing DoI theory.

2.5.4 Innovation and sustainability

Several theorists have argued that innovative approaches are integral to addressing sustainability (Hall & Vredenburg 2003; Mol & Sonnenfeld 2000; Porter & Van der Linde 1995; Preuss 2007b; Pujari et al. 2003). Porter and Van der Linde (1995: 121) were amongst the first to suggest 'policy makers and business leaders look to environmental innovation as a method of gaining productivity benefits'. Berkhout and Green (2002: 227) state that 'technological and organisational innovation stands at the heart of most popular policy discourses about sustainability'. Hall and Vredenburg (2003: 63) attest sustainable innovations are special cases, because there are 'additional interacting pressures from social and environmental concerns that make it more complex than conventional market-driven innovation'. Schumpeter (1980) proposed that economic development is driven by innovation through a dynamic process in which new technologies replace the old, a process he labelled 'creative destruction'.

There has been a paucity of studies applying innovation to sustainability research. Berkhout and Green (2002: 230) advocate 'greater awareness and interaction between research in management of innovation, environmental management, corporate social responsibility and innovation and the environment will be fruitful'. Fowler and Hope (2007: 36) concluded 'that companies would be best served by viewing sustainability as a continual process of organisational innovation'. Preuss (2007b: 532) found 'evidence that in terms of technological innovation, purchasing is able to make a contribution to ecological innovation'. Sustainable procurement has the potential to contribute towards wider diffusion of sustainable innovation.

Sustainable procurement can be interpreted as an organisational innovation. The OECD defines an organisational innovation as the 'implementation of an organisational method that has not been used before in the firm and is the result of strategic decisions taken by management' (OECD & Eurostat 2005: 51). In this context sustainable procurement is an innovation because it is a novel approach to purchasing and takes into account sustainability criteria in product and supplier selection. The innovation users of sustainable procurement are the organisations and employees that von Hippel (2005: 3) suggests 'can expect to benefit from using a product or a service'.

Against this backdrop of sustainability and innovation, I examine sustainable procurement as an organisational innovation by applying DoI theory (Rogers 2003)

to complement institutional theory, to explain the diffusion of sustainable procurement across organisations.

2.5.5 Diffusion of innovations theory

To explain sustainable procurement as an organisational innovation I selected diffusion of innovation (DoI) theory. While its application so far to sustainability studies is limited, Rogers (2003), a seminal author, delivers tools and frameworks that give a useful insight into the success factors in adoption. It can be also applied retrospectively and prospectively to examine future adoption and it complements the application of institutional theory. Rogers is the main exponent of DoI and the most widely referenced, with up to 5000 diffusion publications in 2003 covering subjects from technological innovations, heath policies, consumer products and educational innovations (Rogers 2004). There are several precedents for applying DoI in the environmental sustainability area including, adopting cleaner technologies in hotels (Yaw 2005), fuel efficient cars and wind energy (Beise & Rennings 2005), and community-based social marketing (McKenzie-Mohr & Smith 1999), but most studies explore innovations of technological products (Kim & Srivastava 1998; Robertson & Gatignon 1986).

As previously described sustainable procurement is an organisational innovation and the social system is Australian organisations. Rogers (2003: 5) defines an innovation as 'an idea, practice or object that is perceived as new by an individual or other unit of adoption that is communicated through certain channels over time amongst members of a social system'. Rogers (2003) has a number of tools that examine an innovation in detail and its rate of adoption, which are described below. These include the types of innovation decisions, predicting the rate of adoption, classifying adopter categories, the stages of implementation and characteristics of organisational innovativeness.

2.5.5.1 Types of decisions

According to DoI the rate of adoption of an innovation is influenced by the degree of choice associated with implementing the innovation. Rogers (2003) identifies three main types of innovation decisions including optional, collective and authority and a mixture of all three. Authority innovation decisions diffuse more quickly than optional or collective decisions. Individual optional innovation decisions are generally adopted more rapidly than when an innovation is adopted by a group like an organisation, where it is complex and often characterised by collective innovation decisions and authority innovative decisions (Rogers 2003).

> *What types of decisions are mostly frequently associated with sustainable procurement in Australian organisations and how does this affect the rate of adoption?*

2.5.5.2 Rates of adoption

DoI is particularly useful to explain the diffusion of an innovation over time, including retrospectively and prospectively across a system or group of organisations. Examining the rate of adoption of an innovation over time, the frequency distribution of the number of mean adopters per year can be displayed by a normal bell curve. However, the cumulative number of adopters of an innovation over time typically forms an S-shaped curve. Rogers (2003) claims the S curve is innovation specific and system specific, describing the diffusion of a particular new idea amongst the member units of a specific system. Initially, there is a few adopters per unit of time followed by a take-off in the rate of adoption as the opinion leaders decide to use the innovation. Von Hippel (1986: 796) refers to Rogers' innovator category as 'lead users' and separates them for special attention as a 'forecasting laboratory' because 'lead users who have real life experience with novel products are in a position to provide accurate data on needs related to future conditions'. Over time there is a decrease in the rate of adopters, as the number of remaining potential adopters falls. The curve begins to level off after half the individuals in a social system have adopted and once interpersonal networks become activated.

No previous studies have investigated the current state of sustainable procurement implementation across a range of Australian organisations. By identifying the current state of sustainable procurement implementation in organisations, it establishes a baseline for planning the progression of sustainable procurement and customising interventions. This thesis addresses the following research questions in this area.

> *What is the current state of sustainable procurement in Australian organisations?*
> *Based on DoI, when will the critical mass of organisations adopt sustainable procurement as an organisational innovation?*
> *Over time what is the likely trajectory of this practice in Australian organisations?*

2.5.5.3 Stages of adoption

As well as examining adoption projections, innovation adoption process can be divided into stages. Klein and Sorra (1996) conceptualize innovation use as a continuum, ranging from avoidance of the innovation (nonuse) to meagre and unenthusiastic use (compliant use) to skilled, enthusiastic and consistent use (committed use). Rogers (2003) proposes two main stages including initiation and implementation which contains five of implementation stages, set out in Table 4. These stages provide a finer granularity in the pre-adoption stages than proposed by Klein and Sorra (1996) and are more accommodating of an innovation in its early phase of diffusion. Peterson *et al.* (2007) applied a modified version of Rogers' stages of implementation framework and found adoption was accelerated by program champions and collaborative efforts among stakeholders (Peterson et al. 2007).

INITIATION
1. Agenda setting occurs when there is a gap between the organisation's expectation and performance, triggering the innovation process.
2. Matching then occurs where the innovation is planned to meet the performance gap.
IMPLEMENTATION
3. Redefining and restructuring to accommodate the innovation in the organisation, during which both the innovation and the organisational processes change.
4. Clarifying occurs as the innovation is implemented and gradually becomes clearer to the organisation's members.
5. Routinisation of the innovation is incorporated into the normal activities of the organisation.

Table 4 Stages of innovation of adoption (Rogers 2003)

By classifying what stage of implementation of the sustainable procurement innovation process organisations are at, from early agenda setting to an established routine practice, it is instructive to recommend actions to progress organisations through each stage and embed sustainable procurement as standard practice.

> *At what stage of the sustainable procurement innovation implementation process are the majority of Australian organisations?*

While it is useful to identify stages within the implementation process and classify adopters into categories the specific characteristics that will encourage future and sustained adoption of sustainable procurement are also fundamental to this thesis. The next section discusses the attributes of an innovation and how these influence its rate of adoption.

2.5.5.4 Attributes of innovation

In addition to frameworks that project the diffusion across a system there are equally characteristics or attributes of an innovation that influence its rate of adoption. Rogers (2003) found the rate of adoption of an innovation is explained by five groups of variables: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability and (5) observability. The following definitions of the five attributes are sourced from Rogers (2003). Relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes. The degree of relative advantage is often expressed as economic profitability, social prestige and other benefits. Compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences and the needs of potential adopters. Complexity is the degree to which an innovation is perceived as relatively difficult to understand and use. Trialability is the degree to which an innovation may be experimented with on a limited basis. Observability is the degree to which results of an innovation are visible to others. Faster rates of adoption are perceived by individuals as having greater relative advantage, compatibility, trialability and observability, and less complexity (Rogers 2003). In a study examining users' perceptions of information technology, Moore & Benbasat (1991) added a sixth attribute, 'voluntariness'. The authors defined this as 'the degree to which use of the innovation is perceived as being voluntary or of free will' (Moore & Benbasat 1991). Taking into account the previous discussion of the influence of voluntary and mandatory programs, 'voluntariness' is worthy of consideration as an additional attribute. This model identifies the specific enablers associated with sustainable procurement as an innovation to support its diffusion across Australian organisations.

There are very few sustainability studies that apply or empirically test DoI and this presents a significant gap in the literature. There is an opportunity to test the attributes of innovation for sustainable procurement sequentially, which leads to the following questions.

What factors influence the adoption of sustainable procurement as an innovation in Australian organisations?

Are these factors consistent with those contained in Rogers' (2003) attributes of innovation model?

2.6 Intraorganisational influences on adoption

The next part of this review examines the influence of intraorganisational features and relationships managed from within individual organisations that affect adoption. In combination with Rogers' (2003) attributes of innovation that influence the rate of adoption the green purchasing literature has also raised a number of drivers and barriers that affect the adoption of sustainable procurement. In this section I give a brief outline of the green purchasing literature and then discuss some of the most frequently cited drivers and barriers raised in this literature and put forward the research questions that I will address in this thesis.

2.6.1 Green purchasing literature

Green purchasing demonstrates how organisations implement Hart's (1995) NRBV theory. This theory delivers manufacturers of sustainable products a financial incentive to contribute towards sustainable procurement, sustainable supply chains and sustainable development through the provision of green products (Hart 1995).

Towards the end of the 1990s many studies focused on waste reduction with key areas including resource reduction, product reuse and recycling (Carter & Carter 1998; Carter & Dresner 2001; Carter & Ellram 1998; Min & Galle 1997). Min and Galle (1997) found that purchasing had a significant effect on environmental performance through source reduction strategies including recycling, reuse and waste elimination (Min & Galle 1997). Early green procurement pioneers in the private sector include the Body Shop International and B&Q, the hardware chain, both in the United Kingdom and focused on supplier performance aspects (Green et al. 1996; Lamming & Hampson 1996; Wycherley 1999).

Sarkis and his co-authors were some of the first to focus on methods to deliver greener products, through greener manufacturing and supply chains. Sarkis and Rasheed (1995) suggested that the three Rs of environmentally conscious manufacturing are reduce, re-manufacture and reuse/recycle (Sarkis & Rasheed 1995). From an emphasis on waste the concept of closed loop supply chains (Sarkis 2001c) began to emerge, reverse logistics (Carter & Ellram 1998; Stock 1992) and procurement of 'environmentally friendly products, especially those made from recycled materials' (Sarkis & Rasheed 1995: 19). Sarkis (1998) proposed a framework for 'environmentally conscious business practice' including design for the environment, total quality environmental management, life cycle analysis, green supply chain management and ISO 14000 standards. He draws

attention to the alignment of both products and suppliers in the ability 'to locate environmentally friendly materials and vendors' (Sarkis 1998: 162).

Effective sustainable procurement strategies require sustainable suppliers and the supply of sustainable products (Preuss 2005a; Sarkis 1998; Seuring & Müller 2008). Hart's (1995) NRBV theory posits that manufacturers of sustainable products will differentiate themselves against their competitors, leading to improved financial performance. He also advocated product stewardship principles based on environmental approaches such as a life cycle assessment approach, design for the environment, supplier take-back, extended producer responsibility and design for disassembly. He suggested the competitive advantage for green products might be achieved through competitive pre-emption (Hart 1995). Walton *et al.* (1998) identified materials used in product design for the environment, and product design processes as proactive approaches to environmentally friendly supply chains. Kleindorfer *et al.* (2005) suggest closed loop systems deliver dual rewards through savings from redundant labour-intensive product recovery programs and gains for sustainability in reducing waste and resources associated with virgin materials. Additionally leasing offers a sustainable alternative to purchasing a product and so does the concept of product service systems (Manzini & Vezzoli 2003), which both dematerialise the product offering. To support the introduction of sustainable procurement, sustainable products are an essential prerequisite, as are incentives for suppliers and manufacturers to deliver more sustainable product and service alternatives. The next section examines some other incentives and obstacles to adoption in the green purchasing literature.

2.6.2 Drivers and barriers to adoption

This section discusses some of the barriers and drivers to sustainable procurement adoption including organisational size, cultural dimensions, including leadership support and training, the perceived cost of implementing programs and the financial performance of the organisation as a result of introducing sustainable procurement. An outline of each of these follows before discussing in detail the organisational attributes that engender the introduction of sustainable procurement.

2.6.2.1 Organisational size

Organisational size as a predictor of adoption of programs within organisations has been the focus of studies in the environmental and sustainability literature. The literature suggests that larger organisations (based on purchasing budget and number of employees) are more likely to have spare resource capacity or

organisational slack to implement new programs, such as sustainable procurement. Additionally, larger organisations may be more willing to invest in sustainability programs as a means of differentiating themselves and seeking legitimacy (Hart 1995; Hart & Milstein 2003).

Klassen and Angell (1998: 189) found organisational size based on the number of employees was 'only marginally significant with larger firms having the economies of scale for environmental management'. Min and Galle (2001) found adoption of green purchasing is positively related to annual purchasing, but in a comparison between adoption and the number of employees it was not significant. Carter and Jennings (2004) found an insignificant relationship between firm size and purchasing for social responsibly, which could have been attributable to their sample of predominantly medium to large sized organisations. Most recently Zhu *et al.* (2008) found that firm size had a statistically significant relationship with the adoption of green supply chain management practices, but green purchasing was at a similar implementation level amongst all manufacturing organisations surveyed. These mixed results suggest that over time the influence of organisational size has lessened and this may infer that other factors act in combination with size to encourage adoption.

Several scholars have drawn relationships between organisational slack (Bourgeois 1981), organisational innovativeness and environmental programs in large organisations. Examining organisational innovativeness Rogers (2003: 411) suggests that 'size may be a surrogate for several other organisational dimensions, including total resources, slack resources, those available to deploy to an activity, employees technical expertise and organisational structure'. Aragon-Correa (1998) found that firm size had a major impact on the amount of training relating to the natural environment, postulating that larger organisations had more resources to deploy to this activity. Sharma (2000: 692) found a significant effect of organisational size on environmental strategy 'may be due either to the greater capacity or greater slack larger companies have to absorb the risks and unpredictability associated with voluntary environmental strategies, or to these companies' higher visibility (and hence, higher external scrutiny)'. Hart (1995: 999) proposed that pollution prevention should afford an opportunity for a 'sustained competitive advantage through the accumulation of tacit resources embedded in large numbers of people'. These studies suggest a preference towards sustainability adoption in large organisations of more employees with diverse skills. An organisation's size with respect to maintaining a good reputation

has also been linked to the adoption of environmental initiatives. Larger organisations have external pressures to protect their environmental credibility and reputation for acceptable performance (Russo & Fouts 1997). Hall (2001) found that large high-profile firms are under pressure from a wide range of stakeholders to improve environmental performance compared with smaller firms. He draws links between the associated risks of large firms' exposure to environmental risk. Preuss (2005b: 138) also found exemplary environmental activities were undertaken primarily by large corporations and those 'currently in the public limelight over their environmental performance'. Rogers' (2003: 409) found that 'organisational size has consistently been found to be positively related to its innovativeness, with larger organisations more innovative'. Henriques and Sadorsky (1999) found that size is an important variable in the early stages of sustainable organisations. Pressures and incentives to adopt sustainable procurement differ in respect to organisational size and may be related to the maturity of existing corporate sustainability programs.

2.6.2.2 Senior management support

Senior management commitment to an organisational program has been found by many authors to be pivotal to its success (Dunphy et al. 2000; Dunphy et al. 2003). The literature reveals senior management commitment to sustainable procurement is motivated by a range of influences. Drumwright (1994) identified policy entrepreneurs, akin to business entrepreneurs as the instigators of socially responsible buying. Policy entrepreneurs are prime influencers who shepherd the process, 'researching the issues and alternatives, recruiting supporters and countering resistance primarily from supervisors and middle management; however they were never purchasing professionals' (Drumwright 1994: 13). Incumbents in this role have 'a zeal rooted in personal commitment involving a complex and often difficult process of moral reasoning' (Drumwright 1994: 4). Green *et al.* (2000) delineated three roles that were significant in the success of green purchasing including green procurement champion, green procurement campaigner and the green procurement careerist. The first was in an organisational position to affect change, compared with the campaigner who 'had an interest in stimulating activity but lacked organisational status to effect change' (Green et al. 2000: 219). This role bears strong resemblance to Drumwright's policy entrepreneur, however while Green *et al.* (2000) found them to lack organisational power Drumwright suggests that change was orchestrated through collaboration and organisational networks. The green careerist is motivated by other personal or organisational agendas and not necessarily a personal commitment to environmental issues. These green

manager typologies are useful to identify which of these types of managers is the most effective for sustainable procurement adoption.

Min and Galle's (1997) research ranked a lack of management commitment as the fourth most recorded obstacle to green purchasing, out of nine suggestions. Clearly, without support from organisational leadership, sustainable purchasing, like any change program, is condemned to fail. It has been suggested that sustainability requires special leadership qualities which Drumwright (1994) likened to policy entrepreneurs. Hanson & Middleton (2002) labelled them 'eco leaders' singling out examples of vendor managers who administer sustainable procurement programs, like British pioneers B&Q, the hardware retailer (Hanson & Middleton 2000; Wycherley 1999). In a similar finding by Murphy *et al.* (1994), researching logistics and hazardous and solid waste, they found commitment from senior management and integrating the environment into any decision most effective for incorporating environmental issues (Murphy et al. 1994). Carter and Ellram (1998: 90) identified that 'the success of reverse logistics was affected by a sincere commitment to environmental issues and successfully implemented ethical standards, and the existence of policy entrepreneurs who make a strong commitment and take responsibility for organisational adoption of an environmentally friendly philosophy'. Henriques and Sadorsky (1999: 97) found senior managers in sustainable organisations were willing to use 'management systems and/or policies to encourage a corporate environmental ethic (Roome, 1992) via their communications and their environmental practices'. These findings highlight the overlap between a manager's personal commitments to sustainability and their alignment with organisational goals.

Organisational leaders also can be found to create a culture that is conducive to sustainable procurement implementation. In a logistics study, Carter and Jennings (2002a: 167) suggest that management can influence socially responsible outcomes 'by shaping an organisational culture that encourages characteristics, such as embracing the desire to be a good citizen'. Further they suggest that even in less receptive organisations the individual initiatives of managers who support logistics social responsibility (LSR) can result in successful implementation, suggesting that when recruiting for managers to take charge of LSR personal values alignment is critical. Carter and Jennings (2004) revealed that top management leadership and support does indeed have a direct effect on whether purchasing managers implement PSR, and have a significant mediating effect on PSR through people orientated organisational culture. These findings suggest that senior

management has a role in supporting an organisational culture that is receptive to introducing sustainable procurement.

There are also particular leadership attributes for introducing innovations, such as sustainable procurement. Schumpeter (1980) places great emphasis on the individual entrepreneur to bring about innovative change by creative destruction. Rogers (2003: 414) also advocates that the presence of an innovation champion contributes to the success of an innovation. Again these roles are akin to Drumright's policy entrepreneur. Rogers (2003) concludes that 'innovation champions come in all ages, with varying degrees of formal power and with different abilities' (Rogers 2003: 417). Howell and Higgins (1990) found that champions tended to be risk takers, more innovative and more influential with others. They suggest that it is the 'people skills' of persuasion and negotiation that singles them out. Anderson and Bateman (2000: 567) recommend environmental champions should 'present the environmental issue like any other business issue, emphasizing its financial impact and using formal and businesslike language and protocol, appeal to the aspirations of superiors and build coalitions of respected employees'. Klein and Sorra (1996) suggest that the decision to adopt an innovation is typically made by senior organizational managers, signalling use by employees. Associated with voluntary environmental strategies Sharma (2000) suggested managers required creative problem solving and innovation (Sharma 2000). Managers leading the introduction of innovations appear to possess personal attributes such as risk taking and people-orientated skills.

2.6.2.3 Staff awareness

To ensure an effective organisational transition to sustainable procurement, it is likely that staff will need to be trained in revised procedures. Aragon-Correa (1998) found that firm size had a major impact on the amount of training relating to the natural environment, postulating that larger organisations had more resources to deploy to this activity. Min and Galle (1997, 2001) suggest that education and training programs should accompany comprehensive policies (Min & Galle 1997, 2001). Gunter and Scheibe (2006) include knowledge as one of the five domains in a self-evaluation tool to identify hurdles to green procurement. ECO-Buy in Australia, a case previously discussed, has an extensive awareness program, yet lack of staff awareness is repeatedly raised as a barrier to implementation in yearly surveys of members (ECO-Buy 2005, 2008).

The NRBV of the firm predicates competitive advantage on the internal capabilities of staff. Several theorists have stressed the importance of training for voluntary

programs. Sharma (2000) suggests there is wide ranging variance in voluntary environmental strategies and several theorist draw strong links to training and voluntary programs. Russo and Fouts (1997: 538) suggested that voluntary environmental strategies required 'significant employee involvement, cross disciplinary co ordination and interpretation and a forward thinking managerial style'. Hunton-Clarke *et al.* (2002: 55) suggest that organisations 'must focus on information provision and improving individuals' awareness through relevant training, guidance and specialist support and must place the emphasis on how to consider the environment, rather than why it is important'.

2.6.2.4 Cost of programs

For an organisation the investment in sustainable procurement programs needs to be considered in light of overall financial gain. The cost of introducing sustainable procurement programs has been raised as a barrier to implementation. Min and Galle (1997) reported the high costs of environmental programs was an obstacle to green purchasing, as was a lack of systematic methods to measure benefits and costs. In a follow-up study Min and Galle (2001) identified the cost of establishing green purchasing programs as a deterrent, particularly in small firms of fewer than 500 employees. Bowen *et al.* (2001) also noted the high cost of implementing programs and the allocation of resources as barriers. This is in contrast to assertions by Porter & Van der Linde (1995), Sarkis (1998), Shiravastava (1995), Hart (1995) and Hart and Milstein (2003) advocating green organisational strategies and cost reduction through resource efficiencies contributed to competitive advantage. These studies show that the cost of introducing programs may be a perceived barrier to implementation.

2.6.2.5 Summary of drivers and barriers

In conclusion, the literature surrounding these internal determinants is limited geographically to studies from the US, the UK and Europe, with none from Australia, aside from ECO-Buy, which is limited to local government in one state (ECO-Buy 2005, 2006, 2008) and a single study of a commercial organisation (Keating et al. 2008). There is a gap in the literature from an Australian organisational perspective to examine the internal factors that may encourage or prevent implementation of sustainable procurement in Australian organisations which leads to the following research question.

> *Do the drivers and barriers to adoption raised in the green procurement literature hold for Australian organisations?*

This section has outlined some of the drivers and barriers to adoption raised in the green purchasing literature. In the next section I outline Hart's natural resource based view which proposes that organisations adopting sustainability will be rewarded through competitive differentiation, suggesting an additional motivation for sustainable procurement adoption.

2.7 Natural resource based view (NRBV)

Hart (1995) reorientated Barney's (1991) resource based view of the organisation based on competitive advantage through differentiation, to introduce the 'natural resource based view of the firm' as an alternative theory that responds to the natural environment (Hart 1995).

The primary contribution of this theory is that it gives organisations a motive related to financial performance and sustained competitive advantage by integrating aspects of the natural environment into their internal and external domains. I apply this theory as the theoretical base to describe several other theories that form my framework.

This theory is composed of three interconnecting and path-dependent strategies: pollution prevention, product stewardship and sustainable development. Each underlying strategy is rooted in costly-to-copy firm resources and capabilities and incorporate the internal and external organisational domains as illustrated in Figure 2. Enhancing these competitive advantages Hart (1995) recognises that the 'external (legitimacy based) orientation may reinforce and differentiate the firm's position through the positive effects of a good reputation' (Hart 1995: 999).
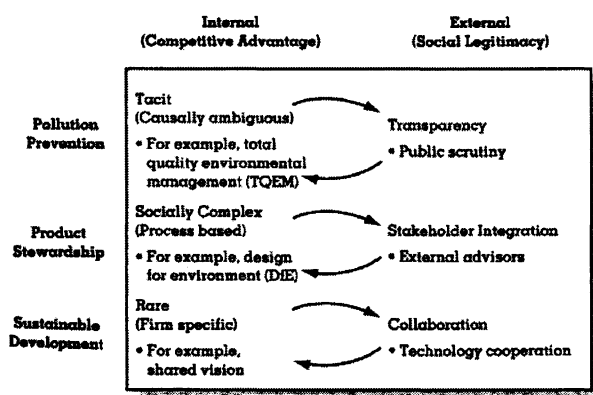
Figure 2 Sustained Competitive Advantage **(Hart 1995: 999)**

Hart (1995: 992) suggested that through 'pollution prevention companies realise significant savings; resulting in a cost advantage relative to competitors'. This concept was a forerunner to eco-efficiency and meant that efficient use of resources

and waste minimisation will return cost savings to manufacturers. Essentially pollution prevention is achieved through gaining environmental efficiencies analogous to total quality management 'requiring extensive employee involvement and continuous improvement' (Hart 1995: 992) and adopting environmental management systems and producing public reports on resource consumption and emissions to be transparent and gain societal legitimacy. For sustainable procurement this means that companies are encouraged to develop products with lower embodied resources, for example from recycled materials and reduced water and energy in their production and use. The incentive for sustainable products is savings gained from reduced inputs and more efficient and environmentally attuned processes.

Hart's (1995) second strategy, product stewardship, incorporates several methods and techniques that reduce the environmental burden of products during design and development. These include applying a life cycle analysis (LCA) to products, extended producer responsibility and design for the environment (DfE), and describes early concepts of product service systems (Manzini & Vezzoli 2003). Additionally he recommends integrating 'the perspectives of key external stakeholders, environmentalists, community leaders, the media and regulators into product design and development' (Hart 1995: 1001). Hart advocated that organisations with well-performing cross-functional management would implement product stewardship more quickly. By applying product stewardship tools, manufacturers would build reputation and differentiate products by establishing the firm as an early mover in new green product domains (Hart 1995). For sustainable procurement, product stewardship is critical, as it ensures the supply of sustainable products to purchase, thereby supporting the market for sustainable alternatives.

Hart's (1995: 1002) strategy of sustainable development 'is fostered by a strong sense of socio-environmental purpose'. To abate environmental degradation and socio political disintegration, he advocated firms should support developing nations by contributing towards 'social and economic development, while simultaneously ensuring the integrity of ecological systems' (Hart 1995: 997). In an effort to achieve this goal, organisations accumulate rare and firm specific resources and develop a shared vision of the future and focus on new sustainable technologies and products that differentiate them from their competitors (Hart 1995). This highlights the role of sustainable innovation in product development working in collaboration with developing economies. Applied to sustainable procurement this strategy incorporates the societal responsibilities associated with purchasing and

would include auditing supply chains and product labels validating fair labour practices such as fair trade. In addition, a long term vision for sustainable procurement and strategy would form part of a sustainable development strategy.

2.7.1 Motivations for adoption

The prime legacy of Hart's (1995) NRBV is that it delivers a compelling motivation for organisations to pursue sustainability, which could also be transferred to sustainable procurement. By minimising waste and resource inputs costs will be lowered and, in the process of engaging with stakeholders to produce green products, organisations will achieve a competitive advantage (Hart 1995). Building on Hart's (1995) premise of sustained competitive advantage several authors found environmental strategies (Russo & Fouts 1997), environmental management practices (Gupta 1995; Klassen & McLaughlin 1996) and best practice environmental techniques (Christmann 2000), and a natural environmental orientation (Menguc & Ozanne 2005) led to enhanced financial performance. Dunphy *et al.* (2003: 51) suggest 'it has become very costly to operate companies which are not socially responsible'. Adopting an efficiency approach to sustainability can involve value-adding and innovation based activities to complement cost savings and competitive advantage (Dunphy *et al.* 2007).

Several studies have also tested the relationship between organisational financial performance and sustainable procurement adoption. Building on research by Klassen and McLaughlin's (1996) study, Carter *et al.* (2000) found a significant link between environmental purchasing and firm performance (Carter et al. 2000; Klassen & McLaughlin 1996). Bowen *et al.* (2001) suggested that product based green supply initiatives can be effective environmentally and economically. Rao and Holt (2005: 912) found that 'green supply chains would not only achieve substantial cost savings, but they would also enhance sales, market share and exploit new market opportunities to lead to greater profit margins and economic performance of the firm'. These examples show a clear relationship between sustainable procurement adoption and enhanced financial performance.

Despite the studies discussed above, it is possible that the motivations for introducing sustainable procurement may not be confined to direct financial gain and may be mediated by other factors. Carter (2005: 187) claims that PSR does not directly lead to improved financial performance in the form of cost reduction, suggesting that 'firms that engage in PSR are not guaranteed to improve firm performance'. Other mediating factors such as organisational legitimacy and

reputation may also motivate adoption (Bansal & Roth 2000; Roberts 2003). In concurrence with Hart (1995), Bansal and Roth (2000) found firms were motivated by competitiveness, legitimation and ecological responsibility to implement corporate environmental initiatives. Pullman *et al.* (2009: 48) found the indirect effects of sustainability practices on performance show some evidence of supporting NRBV. Shrivastava (1995) also drew attention to the advantage of environmental integration, signalling there are reputational rewards by gaining first-mover advantage in their industries, ensuring long-term profitability, establishing better community relations, and improving their image. The studies discussed in this section suggest there is a range of factors that motivate organisations to adopt sustainable procurement, including direct financial gain, legitimacy and reputation which leads to the following research question.

> *Why are organisations motivated to adopt sustainable procurement?*

Several authors have found that organisations with a proactive response to sustainability will also deliver financial gain (Ghobadian et al. 1995) and additionally proactive organisations respond differently to their stakeholders. Hart (1995) acknowledges the 'voice of stakeholders' to attain social legitimacy and consequently reputational gains in developing the sustainable enterprise and introducing sustainable purchasing. Dunphy *et al.* (2003) suggest that 'public opinion often seems only the opinion of activist NGOs, but it is now also the opinion of employees and shareholders' (Dunphy et al. 2003: 51). Sharma and Vredenburg (1998) found environmentally proactive firms demonstrated internal capabilities for stakeholder integration. Henriques and Sadorsky (1999: 96) found 'managers in environmentally proactive firms perceive all stakeholders as important, with the exception of the media, suggesting that proactive firms are already managing their risks and justify their response'. Managing stakeholders and the issues they raise is another motivating factor influencing the introduction of sustainability programs. The next section discusses the contribution of stakeholder theory to this thesis.

2.8 Stakeholder theory

Stakeholder theory offers an alternative view of sustainable procurement, examining the management of an organisation's relationships with its stakeholders (Clarkson 1995: 92) associated with adoption. Hart (1995) proposed stakeholder involvement for socially legitimate organisations. A stakeholder perspective of sustainable procurement as part of corporate social sustainability recognises stakeholders' concerns, which are incorporated into supplier selection and the attributes of products purchased, as well as efforts to improve its relationships with stakeholders.

Freeman (1984: 46) defines stakeholders[1] as 'any group or individual who can affect or is affected by the achievement of the organisation's objectives'. Other authors have also refined and extended this seminal definition to entities 'with legitimate interests' (Donaldson & Preston 1995: 67) and those that 'have, or claim, ownership, rights or interests in a corporation and its activities, past, present, or future' (Clarkson 1995: 106). Another defining characteristic is that 'stakeholders are identified by their interests in the corporation, whether or not this interest is reciprocated' (Donaldson & Preston 1995: 67).

While there are several stakeholder theory typologies, there is general agreement among theorists that the theory is normative at its core, or guided by morals and ethics (Donaldson & Preston 1995; Jones 1995; Jones & Wicks 1999). Donaldson and Preston (1995) proposed a taxonomy for stakeholder theory approaches including descriptive, which is self-explanatory, instrumental and normative. The instrumental approach identifies connections, or lack of connections, between stakeholder management and the achievement of traditional corporate objectives (e.g. profitability and growth). A normative approach 'is used to interpret the function of the corporation, including the identification of moral or philosophical guidelines for operation and management of corporations' (Donaldson & Preston 1995: 71).

Suppliers are key stakeholders in sustainable procurement implementation. Jones' (1995) instrumental theory focuses on the contract (a metaphor for the relationships between the firm and its various stakeholder groups). Jones (1995: 427) proposes 'firms that have long-term relationships with their suppliers will outperform firms that have relatively brief relationships with their suppliers'. Jones

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[1] See Mitchell *et al.* (1997: 858) for a more detailed chronology.

(1995: 423) posits that 'organisations will gain competitive advantage if they are able to develop relationships with their stakeholders, including suppliers, based on mutual trust and cooperation'. These findings demonstrate that trusting long-term supplier relationships will deliver financial gain, which could potentially serve as a foundation for introducing sustainable procurement.

In a further variation, Jones and Wicks (1999) propose a convergent stakeholder theory that combines normative and instrumental elements. Extending this normative posture they assert that organisations have a 'corporate morality' in the same way as individuals, because the reputation of top managers is tested through policies that affect stakeholders and the behaviour of their agents (Jones 1995: 420).

The reactive, defensive, accommodative, and proactive (RDAP) scale developed by Wartick and Cochran (1985) has been applied by several authors in the stakeholder literature. Clarkson (1995) applies this framework to stakeholder management by matching a company's posture or strategy towards the management of stakeholder issues and performance or assumed responsibility for managing stakeholder issues against the four organisational types in the RDAP scale (Figure 3). This scale is useful to classify how organisations respond to individual stakeholders as part of sustainable procurement adoption.

Rating	Posture or Strategy	Performance
1. Reactive	Deny responsibility	Doing less than required
2. Defensive	Admit responsibility	Doing the least that is required
3. Accommodative	Accept responsibility	Doing all that is required
4. Proactive	Anticipate responsibility	Doing more than is required

Figure 3 Reactive-defensive-accommodative-proactive (RDAP) Scale (Clarkson 1995: 109)

Also using the RDAP scale of organisations as a foundation, Henriques and Sadorsky (1999) tested Roome's (1992) and the Hunt and Auster's (1990) model categorising organisations' environmental commitment relative to their perceptions of the relative importance of different stakeholders, regulatory stakeholders, organisational stakeholders (including customers, suppliers, employees and shareholders), community stakeholders (community groups, environmental organisations) and other special-interest groups, and the media. Henriques and Sadorsky's (1999) application of the RDAP scale presents a model for sustainability

studies. It categorises managers' salience of individual stakeholders, which is useful to apply to emergent sustainability practices like sustainable procurement.

2.8.1.1 Role of managers in stakeholder relationships

Managers' salience of stakeholders is likely to influence the importance they attribute to particular stakeholders in the process of sustainable procurement adoption. At the 'centre of a stakeholder model of the firm are managers, because they contract with all other stakeholders' (Jones 1995: 408). Clarkson (1995: 100) stresses it is important 'to distinguish between stakeholder issues and social issues because corporations and their managers manage relationships and issues with their stakeholders and not with society'. Donaldson and Preston (1995: 87) advocate that managers should 'respond to them within a mutually supportive framework, because that is a moral requirement for the legitimacy of the management function'. Henriques and Sadorsky (1999) found a manager's perception of a stakeholder is critical to the manager's view of the stakeholder's importance (Mitchell et al. 1997). They suggest if environmental issues are a priority area, organisations 'may want to hire managers who react positively to stakeholders who represent the values the company wants to espouse and reward them commensurately' (Henriques & Sadorsky 1999: 97). These findings infer that it is likely to be important for managers to represent their organisations' goals in their perception of stakeholders and their issues.

Managers frequently determine which stakeholder is more prominent and therefore warrants more attention from an organisation. Mitchell *et al.* (1997) present a framework of managers' perception of stakeholder saliency, categorising eight types of stakeholders based on stakeholders' possession or attributed possession of: the stakeholder's power to influence the firm, the legitimacy of the stakeholder's relationship with the firm and the urgency of the stakeholder's claim on the firm singularly or in combination (Mitchell et al. 1997).

Extending Mitchell *et al.'s* (1997) typology Jones *et al.* (2007: 137) suggest the manager's stakeholder salience is also influenced by corporate stakeholder culture, because managers' 'interests often diverge considerably, not only from those of the firm but also from each other'. Jones *et al.* (2007: 143) propose a nomenclature of corporate stakeholder cultures defined as the beliefs, values and practices that fall broadly into three corporate cultures: egoist, instrumentalist and moralist, based on a continuum of concern for others that runs from self-regarding to other-regarding.

Stakeholder Attributes			Mitchell et al. (1997) Stakeholder Type	Mitchell et al. (1997) Stakeholder Salience	Stakeholder Culture Type		
Power	Legitimacy	Urgency			Corporate Egoist	Instrumentalist	Moralist
Yes	Yes	Yes	Definitive	High	High	High	High
Yes	Yes	No	Dominant	Moderate	Moderate	Moderate	Moderate
No	Yes	Yes	Dependent	Moderate	None	Moderate	High
Yes	No	Yes	Dangerous	Moderate	High	High	Moderate
Yes	No	No	Dormant	Low	Moderate	Moderate	Low
No	Yes	No	Discretionary	Low	None	Low	Moderate
No	No	Yes	Demanding	Low	None	None	None
No	No	No	Nonstakeholder	None	None	None	None

Figure 4 Comparison of stakeholder salience models, (Jones *et al.* 2007: 150)

Jones *et al.'s* (2007) framework is particularly useful to classify the type of stakeholder culture that organisations adopting sustainable procurement are predisposed to in relation to their salience of individual stakeholders. Organisational stakeholder culture provides another insight into organisational characteristics that may encourage sustainable procurement adoption.

There are several key stakeholders in sustainable procurement adoption. Stakeholders with similar interests, claims or rights can be classified as belonging to the same group including employees, shareholders and customers. There is a high level of interdependence between these primary stakeholders and organisations because they can influence the viability of the organisation (Clarkson 1995: 106). I now discuss some of the primary stakeholders for sustainable procurement

2.8.1.2 Suppliers as stakeholders

Suppliers are key stakeholders in the introduction of sustainable procurement. As previously outlined, suppliers as valued and trusted stakeholders in the supply chain relationship can lead to improved supplier performance (Jones 1995). Carter and Jennings (2002b: 48) found 'increased involvement by purchasing managers in socially responsible activities lead to improved trust in and increased supplier performance'. In combination with enhanced performance from trusting relationships, suppliers are found to be the source of sustainable solutions.

Establishing relationships with suppliers as stakeholders in sustainability problems can also lead to collaborative solutions. Cousins *et al.* (2004: 559) found that 'firms with close organisational links with their suppliers ... tend to be more likely to involve them in environmental initiatives'. Suppliers can assist purchasing organisations in programs and design activities to meet environmental expectations. Walton *et al.* (1998) noted that environmental collaboration in the supply chain may be compromised if there is an unequal balance of power or less

dedication to reducing environmental imposts by suppliers (Walton et al. 1998). Lamming and Hampson (1996: S52) recognised that 'if a collaborative approach is employed in purchasing, suppliers may be able to help customers to understand the environmental effects and their causes in the supply chain'. By engaging with suppliers in a collaborative purchasing relationship there can be improvements throughout the whole supply chain (Rao & Holt 2005). Hall (2001: 116) found that, 'depending on the exposure of the customer firm, there is a risk that the poor environmental performance of a supplier may become the problem of the customer firm'. These studies suggest that establishing collaborative relationships with suppliers and gaining their commitment to sustainable procurement may benefit adoption and that supplier stakeholders may extend beyond primary suppliers into their supply chains.

2.8.1.3 Stakeholders and purchasing managers

For sustainable procurement adoption, purchasing managers are the primary interface with related stakeholders. Carter and Jennings (2002b: 37) assert that 'purchasing managers are in unique position to contribute to sustainability, primarily through their interface with stakeholders, which include customers, suppliers and regulatory agencies'. Purchasing managers are positioned 'on the periphery of the organisation and interact frequently with suppliers and other upstream channel members. The consequences of a purchasing manager's decisions and behaviour 'does influence how the firm is viewed by suppliers and others outside organisations' (Carter 2000: 192). Gonzalez-Benito and Gonzalez-Benito (2006: 1369) reveal that 'the environmental awareness of managers does not moderate the relationship between the perceived environmental stakeholder pressures and the implementation of environmental logistics practices'. Maignan *et al.* (2002) claim 'many leaders have acknowledged CSR, but there is still uncertainty about its application to the purchasing function'. They noted that 'some stakeholders may be motivated to call for increased social responsibility in purchasing, because their well-being is affected by the firm's purchasing activities' (Maignan et al. 2002). Purchasing managers' salience of stakeholders and prioritisation of their issues is critical to sustainable procurement implementation and may also act as the impetus for adoption.

Hall (2001: 115) found 'a clear relationship between the pressures to which firms were exposed and environmental supply chain initiatives'. Consistent with several stakeholder theorists (Jones 1995; Jones et al. 2007; Jones & Wicks 1999; Mitchell et al. 1997), Hall (2001: 116) found there was 'sufficient urgency and legitimacy from either pressure or perceived pressure to allocate environmental resources,

which can be interpreted as a means of reducing risk from external agents and market conditions'. In a study of implementing CSR training across a group of organisations Cramer (2005: 265) found organisations 'felt the need to intensify communication with stakeholders was particularly expressed by those that felt the external pressure to do so'. These studies show that in response to external pressures from stakeholder organisations sustainability-related initiatives, such as sustainable procurement are likely to eventuate.

2.8.1.4 NGOs as stakeholders

Alignment with NGO stakeholders is one means of framing an organisation's reputation contributing towards its legitimacy. Non-government organisations (NGO) particularly environmental NGOs (ENGO), influence consumer behaviour, by bringing an informed understanding of environmental problems and the ability to mobilise media attention (Buttel 2000; Hart & Sharma 2004; Kong et al. 2002). Kong et al. ,(2002) found varying depths of engagement between NGOs and companies. ENGOs are assuming a number of roles and participate in a range of alliance models to encourage purchasing sustainable alternatives (Buttel 2000), which include endorsing products (Mol 2000). NGOs act as monitors of environmental and social standards across the world and have had a major impact on how corporations perceive compliance (Dunphy et al. 2007: 79). Campbell (2007) proposed that corporations are more likely to act in socially responsible ways the more they encounter NGOs, and other independent organisations that monitor them, and a normative institutional environment that encourages socially responsible behaviour. New alliances are being formed around sustainability between "coalitions of opposites" including NGOs and business organisations (Dunphy et al. 2007: 45). NGOs are key stakeholders in sustainable procurement because they can affect organisational reputation and may help to provide specialist advice during implementation.

Hart and Sharma (2004: 8) propose that stakeholder models based on stakeholder salience or powerful stakeholders (Mitchell et al. 1997) do not accommodate fringe stakeholder groups like 'smart mobs that can self-organize on the net in chaotic and unpredictable ways'. They claim that 'fringe stakeholders' at the periphery of an organisations with no direct connection to the organisation's activity can have a significant impact on its ability to execute (Hart & Sharma 2004: 17).

This section has discussed managers' salience of stakeholders and the resulting stakeholder cultures. Sustainable procurement is a distinctive corporate sustainability program. This suggests that there are particular stakeholders and

stakeholder cultures that are more applicable to adoption with leads to the following research questions.

How does managers' salience of different stakeholders contribute towards sustainable procurement adoption?

Based on purchasing managers' salience of different stakeholder groups which organisational stakeholder cultures and postures does this suggest for sustainable procurement adoption?

2.8.1.5 Stakeholders and Innovation

Several sustainability scholars acknowledge that stakeholder engagement forms an integral component of the innovation process (Berkhout & Green 2002; Foster & Green 2000; Hall & Vredenburg 2003; Hart & Milstein 2003; Hart & Sharma 2004; Preuss 2007b). Berkhout and Green (2002: 230) claim 'engagement with a wider set of stakeholders has led to new organisational routines, including CSR which has direct implications for innovation processes'. Connecting with stakeholders extends the pool of knowledge available to users' products or suppliers (Preuss 2007b). Authors have recommended for innovation to engage with fringe stakeholders (Hart & Sharma 2004), secondary stakeholders (Hall & Vredenburg 2003), customers, suppliers and other stakeholders for information about green issues (Foster & Green 2000). Engaging with a variety of stakeholders brings innovative products and practices to organisational sustainable procurement.

2.8.1.6 Reputation and Stakeholders

An organisation's image or brand is frequently framed by stakeholders. Hart (1995: 995) claims there is 'a vast amount of unclaimed reputational space with respect to corporate environmental performance' and by pursing NRBV strategies 'it may be possible for a company to build a differentiated reputation' (Hart 1995: 1006). Carlisle and Faulkner (2004: 144) recognise that 'not all benefits of CSR are tangible and measurable, suggesting that a good reputation can confer differentiation advantages which are difficult to quantify'.

Environmental and social issues in the supply chain raised by NGOs affect the reputation of an organisation and therefore perceived loss of reputation can be a significant driver for sustainable procurement (Maignan et al. 2002; Roberts 2003). Company leaders are beginning to realise that their customers as well as other stakeholders do not make a distinction between the environmental performances of the company and that of their suppliers (Rao 2005). Roberts (2003) claims a company's reputation can be significantly affected by the organisation's

management of sustainability issues outside their direct control including environmental and social issues. In particular, high-profile organisations are vulnerable to stakeholder expectations, particularly high for branded goods (Roberts 2003) and those 'currently in the public limelight over their environmental performance' (Preuss 2005b: 138). Dunphy *et al.* (2003: 97) suggest 'more informed consumers have pushed corporations into a new arena of competing for reputation and for access to the benefits of social capital, such as relationship building with other corporations, suppliers, clients and NGOs'. Sustainable procurement is a potential vehicle for organisations to enhance their reputation and differentiate themselves among their competitors, leading to financial gain.

2.8.2 Stakeholder models of collaboration

Complementing contributions from stakeholder theory the environmental and ethical purchasing literatures have proposed models that identify stakeholders in sustainable procurement. Models proposed by Carter & Carter (1998) and Carter and Ellram (1998) examining interorganisational forces in environmental purchasing and reverse logistics respectively, were adapted from Achrol *et al.* (1983) who based their model on Stern & Reve's (1980) dyadic marketing framework to explain the 'contexts' or environments.

Each of these frameworks identifies settings in which transactions and interrelationships occur between organisational types. Achrol *et al* (1983) identify four environments including input suppliers, output customers, competitors and regulatory. In Figure 5 Carter and Ellram (1998) identify similar environments of suppliers, buyers, competitors and government which includes interest aggregators and consists of 'consumer and lobbying groups, that influence the government and regulatory bodies' (Carter & Ellram 1998: 94).
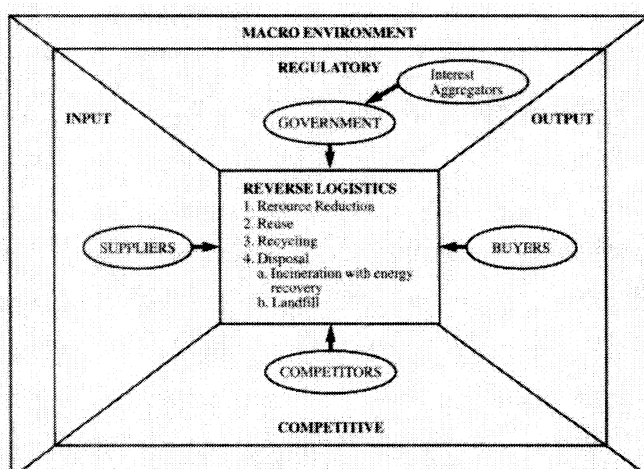
Figure 5 Model of the environmental forces affecting reverse logistics activities (Carter & Ellram 1998: 94)

From the ethical purchasing literature, Roberts (2003) also provides a stakeholder model, proposing four stakeholders segments; authorisers, business partners (which includes suppliers), external influencers and customer groups. More recently Seuring and Muller (2008) identify organisational categories including suppliers, customers, stakeholder and government in sustainable supply chain management. Together with the environmental purchasing models by Carter and Carter (1998) these others are useful in classifying potential collaborators and their role and contribution in implementing sustainable procurement.

While these frameworks provide a base for appraising the stakeholders prominent in sustainable procurement, they appear to neglect the emergence of fringe stakeholders (Hart & Sharma 2004) and NGOs, which, as previously discussed, influence an organisation's reputation. While Carter and Ellram (1998) and Carter and Carter (1998) have included 'interest aggregators' as part of the regulatory sector I would argue this role is far more pronounced, warranting a separate grouping. Roberts (2003) classifies them as special interest groups as part of 'external influencers' and acknowledges them as sources of normative pressure.

In the same way as there are distinct stakeholders associated with sustainable procurement there are also particular collaborative relationships that organisations have with these stakeholders that influence adoption, leading to the following research questions.

> *What types of collaborative arrangements exist between procuring organisations and their stakeholders?*
>
> *How do these collaborative arrangements influence the adoption of sustainable procurement?*

2.9 Phase models for sustainability

This chapter has reviewed the literature from a range of theoretical perspectives to explain sustainable procurement. These include institutional theory, DoI, the green purchasing literature, NRBV and stakeholder theory to form a theoretical framework. In this concluding section, I appraise from the corporate responsibility literature selected models that detail stages of organisational progression in CSR, which could be applied to sustainable procurement. Organisations may proceed in a sequential progression, as set out in stages of implementation of an innovation (Rogers 2003) or may be 'best served by progressing sustainability on all fronts' (Fowler & Hope 2007: 36).

Several models applied to demonstrate the progression in environmental performance serve as a starting point. Roome (1992) identified five broad strategic options: non-compliance, compliance, compliance plus, commercial and environmental excellence, and leading edge. Hunt and Auster (1990), using a different nomenclature, described five categories or stages of corporate environmental management programs: the beginner, the fire fighter, the concerned citizen, the pragmatist and the proactivist. Both authors proposed nomenclatures based on degrees of proactivity in environmental management (Hunt & Auster 1990; Roome 1992). Henriques and Sadorsky (1999) leveraged off these models by proposing profiles based on environmental commitment and the perceptions of the relative importance of different stakeholders. They proposed four environmental profiles: reactive, defensive, accommodative, and proactive. More general classifications were developed in the corporate social responsibility literature (Carroll 1979; Wartick & Cochran 1985) namely the reactive, defensive, accommodative and proactive (RDAP) scale (Carroll 1979). This model was also applied by Clarkson (1995) in Section 2.8 discussing stakeholder culture. Maignan *et al.* (2002) also apply the RDAP scale to propose a continuum for socially responsible buying ranging from reactive to proactive strategies to meet stakeholder issues.

Phase models have also been applied in the sustainable organisations literature. Nattrass and Altomare (1999) applied the natural step to organisations proposing eras of unpreparedness to an era of compliance, then beyond compliance, eco efficiency and the fourth and final era of sustainable development which includes mainstreaming of environmental goals and includes tools such as design for the environmental life cycle assessment. A similar transition path can be envisaged as being needed to facilitate the transition of all organisations to sustainability. Carlisle and Faulkner (2004) propose a four part model, commencing with developing awareness where senior managers become aware and where someone is appointed to oversee policy. The third stage is initial implementation where stakeholders are engaged and measured, culminating in the final stage of mainstreaming which features implementation and monitoring.

In a similar vein to Roome and Henriques and Sadorsky, McIntosh (2002) identifies four types of corporate citizenship which include avoidance, compliance, discretionary and proactive (McIntosh 2002). Building on these previous models Dunphy *et al.* (2003, 2007) propose six phases of organisational change for corporate sustainability. This phase model closely mirrors previous models by

Roome, even in their allocation of titles, including rejection, non-responsiveness, compliance, efficiency, strategic proactivity and the sustainable organization. Hunting and Tilbury (2006) propose another, suggesting to adopt a clear, shared vision for the future, build teams, not just champions, use critical thinking and reflection, go beyond stakeholder engagement, and adopt a systematic approach. Waddock and Bodwell (2007) propose total responsibility management, which includes inspiration, where an organisational vision is formulated and stakeholders are engaged, followed by integration where strategies are formulated and processes and systems are modified to incorporate CSR. The final stage is innovation with organisational systems to monitor results for improvement and external validation. These sustainability phase models provide templates for organisations to introduce sustainable procurement, leading to the following research question.

According to what phases do organisations embed sustainable procurement?

2.9.1 Summary

This literature review has established the relevant gap in the extant literature that this research will address. According to the literature review, this research is well placed to make a significant contribution to the sustainable procurement literature and practice. Few studies have examined sustainable procurement incorporating both environmental and social criteria in a single study, few studies apply a framework of established management theories, no studies have examined corporate and public organisations in Australia as one nationally unique study, and few studies recognise that sustainable procurement forms part of CSR. While there is a growing body of studies, many scholars have noted the lack of accompanying theoretical development.

Acknowledging these theoretical shortcomings and as sustainable procurement forms part of an organisational response to CSR, I have chosen to apply a suite of established management theories to develop a theoretical framework to explore the sustainable procurement literature and put forward a series of questions that this thesis will answer. My theoretical framework is comprised of institutional theory (DiMaggio & Powell 1983; Meyer & Rowan 1999), DoI (Rogers 2003), NRBV (Hart 1995) and stakeholder theory (Clarkson 1995; Donaldson & Preston 1995) and supplemented by the green purchasing literature. This research addresses the gap in the current sustainable procurement literature and contributes towards the development of a sustainable procurement theory. The next section gives a brief

summary of the two methods that will be applied in this research before presenting the results of the quantitative research component in greater detail in the next chapter.

2.9.2 Overview of methods

This thesis applied a mixed-methods methodology detailed previously in Section 1.5.1 of the Introduction. The study has two components, an online survey questionnaire and semi-structured interviews for the quantitative component. In addition, arts-based inquiry was used as a complementary form of analysis to present the qualitative case material. Using both methods gave contrasting viewpoints to investigating sustainable procurement. The survey gathered perspectives of environmental purchasing as a current and prospective activity from a large group of Australian organisations, compared with interviews with lead adopters of sustainable procurement to uncover detailed motivations and experiences. The survey sample included organisations undertaking ESP and those not pursuing it. This contrasted with the qualitative sample, which was purposive. All organisations in this sample were undertaking sustainable procurement in various stages of maturity. The survey examined the concept of sustainable procurement as an innovation in organisations, as an alternative introduction path by testing Rogers' (2003) attributes of innovation, and as part of DoI theory (Rogers 2003).

2.9.2.1 Phenomena under investigation in each method

For the two studies the interpretation and definition of sustainable procurement differed. For clarity the survey was limited to an environmental perspective, while the interviews sought to uncover how organisations were conceptualising sustainable procurement as a triple bottom line approach.

The questionnaire surveyed respondents on their perceptions of environmentally sustainable purchasing (ESP) in their organisations. In the opening screen for the survey, I defined ESP and how environmental purchasing would be applied in an office setting. The instrument was confined to 'environmental' or 'green' purchasing features, because of several contingent factors at the time of the instrument's release. Based on my familiarity with the progression of Australian organisations, the integration of social aspects in procurement was underdeveloped and not fully understood at the time the survey was conducted. Section 2.1.2 in this chapter also confirms that the sustainable procurement literature is immature and dominated by environmental purchasing and supply chain research. Furthermore, the green purchasing literature provided several overseas studies to

compare and contrast with findings from Australian organisations. In the interests of clarity in the mind of the respondents, expediency, and the current literature, I decided to limit the survey to environmental procurement.

By contrast, the qualitative component focused on sustainable procurement as a triple bottom line approach. To explore the advancement of this concept in sample organisations, I forwarded a brief research outline (see Appendix A) to participants which included a definition of sustainable procurement including environmental, social and economic considerations. The intention of the interviews was to gain a more detailed perspective of sustainable procurement and its interpretation, the motivations for adoption, experiences and approaches of organisations. During the interviews I used the term 'sustainable procurement', but left the detailed interpretation of it open to interviewees. Participants approached sustainable procurement from a range of viewpoints and levels of maturity but in alignment with the survey organisations, most were practising environmental procurement.

2.9.2.2 Application of methods and theories

This chapter has discussed how this thesis will fill the gap in the current sustainable procurement literature through the application of a theoretical framework of management theories. Table 5 sets out the research questions raised in this review of literature and which of these theories, namely institutional theory, DoI, NRBV, the green purchasing literature and stakeholder theory, will be applied to explain the adoption of sustainable procurement. It also lists the relevant method and in some cases methods used to answer each of the research questions.

Research question	*Theory*	*Method*
How is sustainable procurement spread amongst Australian organisations?	Institutional theory	Qualitative and quantitative
What are the institutional mechanisms at play that lead towards the diffusion of sustainable procurement?	Institutional theory	Qualitative and quantitative
What types of decisions are mostly frequently associated with sustainable procurement in Australian organisations and how does this affect the rate of adoption?	Diffusion of innovation theory	Quantitative
What is the current state of sustainable procurement in Australian organisations?	Diffusion of innovation theory	Qualitative and quantitative
Based on DoI when will the critical mass of organisations adopt sustainable procurement as an organisational innovation?	Diffusion of innovation theory	Quantitative
Over time what is the likely trajectory of this practice in Australian organisations?	Diffusion of Innovation theory	Quantitative

Research question	Theory	Method
At what stage of the sustainable procurement innovation implementation process are the majority of Australian organisations?	Diffusion of innovation theory	Quantitative
What factors influence the adoption of sustainable procurement as an innovation in Australian organisations	Diffusion of Innovation theory	Quantitative
Are these factors consistent with those contained in Rogers' (2003) attributes of innovation model?	Diffusion of innovation theory	Quantitative
How is sustainable procurement conceptualised by Australian organisations?		Qualitative
Do the drivers and barriers to sustainable procurement adoption raised in the green procurement literature hold for Australian organisations?	Green purchasing literature	Qualitative and quantitative
Why are organisations motivated to adopt sustainable procurement?	Green purchasing literature Stakeholder theory	Qualitative
How does managers' salience of different stakeholders contribute towards sustainable procurement adoption?	Stakeholder theory	Qualitative and quantitative
Based on purchasing managers' salience of different stakeholder groups, which organisational stakeholder cultures and postures does this suggest for sustainable procurement adoption?	Stakeholder theory	Qualitative
What types of collaborative relationships exist between procuring organisations and their stakeholders?	Stakeholder theory	Qualitative and quantitative
Who are the main collaborators in adoption?	Green purchasing literature Stakeholder theory	
How do these collaborative arrangements influence the adoption of sustainable procurement?	Stakeholder theory	Qualitative and quantitative
According to what phases do organisations embed sustainable procurement?	Sustainability phase models literature	Qualitative and quantitative

Table 5 Application of theories and methods to research questions

The next chapter is the first of three results chapters. It discusses the results of the quantitative research component that examines the adoption of environmentally sustainable purchasing.

'No discipline has intellectual precedence in an endeavour as important as achieving sustainability. While the intellectual tools we use in this quest are important, they are secondary to the goal of solving the critical problems of managing our use of the planet' (Costanza et al. 1991).

Chapter 3.   Quantitative Component

Australian organisations have started to implement corporate sustainability programs and Heather Ridout, head of the Australian Industry Group one of Australia's largest multisector peak industry organisations representing 10,000 employers, says that 'corporate social responsibility is no longer something business can safely put on the back burner. It is becoming recognised as an important driver of innovation, a new way of getting into markets' (Lloyd 2006). As one component of corporate social responsibility programs organisations are responding to the challenges of sustainability in their procurement, but the literature review in Chapter 2 reveals this is formative in Australian organisations.

This chapter presents results from the quantitative component of the research, which employed a questionnaire to survey perceptions of environmentally sustainable purchasing (ESP) in Australian organisations. The survey tested several hypotheses and examined sustainable procurement as an organisational innovation. Before presenting the results, the aims, method and data analysis are outlined in the following sections.

3.1 Aims

The primary aim of the quantitative method was to investigate if Australian organisations are incorporating environmental sustainability in their purchasing decisions and to what extent this practice is routine across Australian organisations. The intent was to ensure a larger sample of organisations to an overview of the current implementation of ESP. The survey was confined to environmental aspects, recognising that, at the time of the survey, integration of social criteria in purchasing decisions was immature. The survey also examined the adoption of ESP as an organisational innovation to give an insight into the adoption process by testing a number of Rogers' (2003) DoI theory frameworks.

Additional objectives were to investigate the relationship between the level of adoption of ESP and a variety of organisational, management and employee characteristics, and to explore perceptions of barriers and opportunities to the implementation of ESP identified in international studies. The following research questions were examined by the survey questionnaire.

1. What is the current level of ESP adoption in Australian organisations and how does that vary with organisational characteristics (industry sector, number of employees, purchasing spend and location of head office)?

2. What is the expected rate of adoption of ESP as an organisational innovation?

3. What factors influence the adoption of sustainable procurement as an innovation in Australian organisations?

4. Are these factors consistent with those in Rogers's attributes of innovation DoI model?

5. What are the perceived barriers to, and drivers of, ESP adoption in Australian organisations?

3.1.1 Hypotheses

Seven hypotheses outlined below were drawn from the literature and results of previous surveys investigating green purchasing, in Australia by ECO-Buy and overseas most notably in the United States of America. These hypotheses are outlined below. The literature review in Chapter 2 identified a number of variables (see Sections 2.6, 2.8.2) that influence green purchasing adoption. These include the size of an organisation, the maturity of corporate sustainability programs and the commitment of senior management. Barriers identified from earlier studies include cost of environmentally preferred products as one of the major barriers to progressing existing programs, followed by staff awareness of green products and behavioural change. By comparison senior management support was perceived as an incentive to enhancing environmental purchasing programs (ECO-Buy 2005). Figure 6 displays the seven hypotheses and a description of each follows.

> H1   As the size of organisations increase their level of implementation of sustainable purchasing increases.

This hypothesis draws on Min and Galle's (2001) hypothesis that, as the size of organisations increase, their involvement in green procurement increases. Their findings suggest that organisations with greater numbers of employees had higher levels of green purchasing. It appears likely that the cost and knowledge required

to implement these programs may favour larger organisations with greater financial resources and employees.
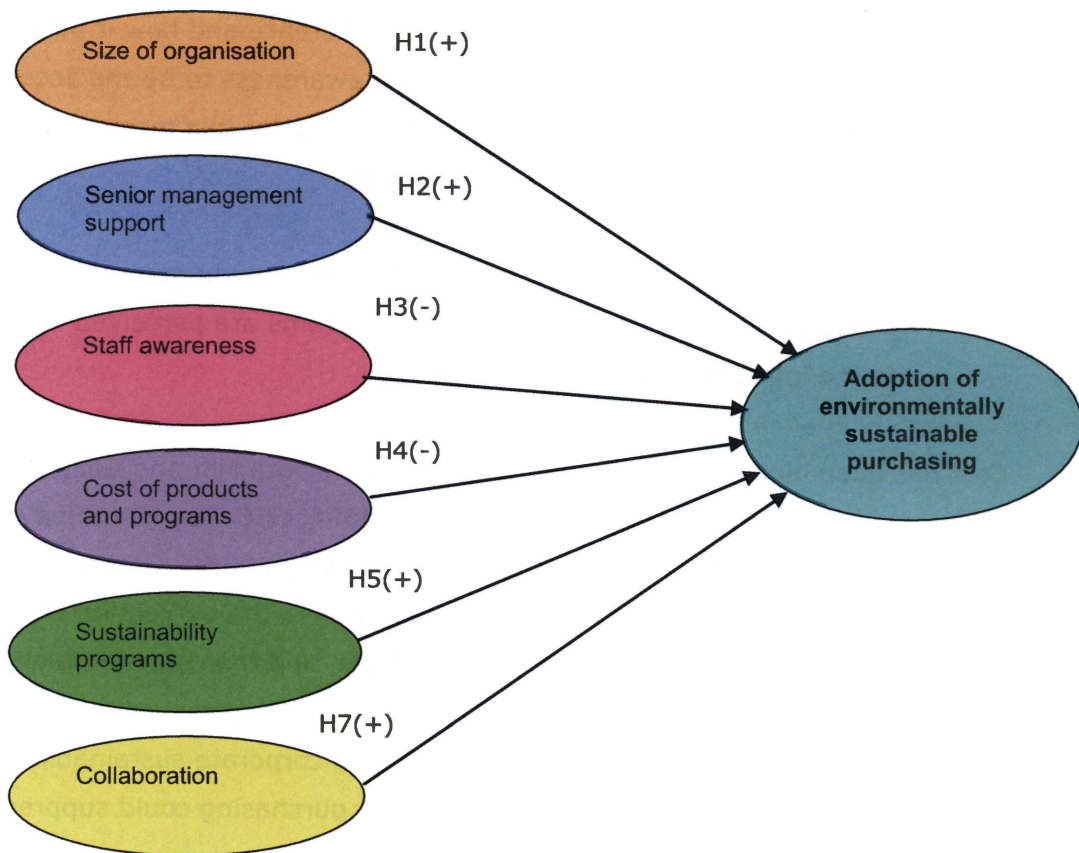
Figure 6 Hypotheses for the adoption of ESP

> H2   A higher level of commitment to sustainability and support by senior management is positively associated with the implementation of environmentally sustainable purchasing programs.

Several other studies have highlighted support from senior management to be a critical success factor in implementing similar programs (Carter & Jennings 2004). Drumwright (1994) examined the impact of social responsibility on organisational buying decisions and concluded that a determinant of success is a skilful policy entrepreneur who shares similar traits with business entrepreneurs (Drumwright 1994). This could be interpreted as commitment and support from senior management to ensure programs are successful and adequately resourced.

> H3   Perceived lack of staff awareness of environmentally sustainable products and a lack of organisational knowledge about environmentally sustainable purchasing practices are barriers to the implementation of ESP.

Introducing a new organisational program is a cultural change process, which requires staff training, embedding in existing systems and monitoring for effectiveness. In this way, implementing sustainable purchasing is no different and its success depends on staff being aware of its existence and how it affects on their work practices. ECO-Buy (2005) reported staff awareness to be the second most reported impediment to green purchasing and this factor had increased over successive surveys (ECO-Buy 2005, 2006, 2008).

> H4   The organisation's costs of introducing environmentally sustainable products and introducing purchasing programs are perceived to be barriers to the implementation of ESP.

Cost has been highlighted as a significant factor by both Min and Galle (2001) and ECO-Buy (2005). In their annual report 2003-2004, ECO-Buy identified cost as the major barrier to purchasing green products (ECO-Buy 2005). Cost can be divided into the cost of sustainable products, which may have the perception of being expensive, compared to less sustainable products, and the cost of implementing the programs, including training and embedding as a routine practice in the organisational culture. Even in organisations with corporate sustainability programs the perceived costs of implementing sustainable purchasing could suppress this activity.

> H5   Organisations with corporate sustainability programs are more likely to implement environmentally sustainable purchasing.

Sustainable purchasing can be regarded as a subset of corporate sustainability prompted by a range of approaches and triggers, including sustainability reporting, introduction of environmental management systems and stand-alone procurement policies. Chen (2005) highlighted the link between implementing an environmental management system and green purchasing in achieving sustainable development. She acknowledged the importance of incorporating green purchasing into the framework of ISO 14000. Coggburn (2004) demonstrated links with green procurement and the management values of effectiveness, efficiency and economy in the American public services, suggesting that it was a useful administrative tool for promoting environmental quality .

> H6   As the size of an organisation increases it is likely environmental sustainability will be a key consideration of supplier selection

Sustainable purchasing depends on being able to source products that meet sustainable criteria. While there is a growing market for sustainable products, large organisations with substantial buying power and market influence may have the ability to influence existing suppliers to supply sustainable products to meet their organisational goals. As the size of an organisation increases, so does their influence on suppliers to provide sustainable products.

> H7   The extent of collaborative arrangements between organisations is positively associated with the level of adoption of sustainable organisational procurement.

Since the 1980s new organisational forms, such as strategic partnerships and networks, have replaced simple market-based transactions and traditional bureaucratic hierarchical organisations. Borrowing from the marketing literature, the new emphasis is on partnership and sharing relationships, with less emphasis on formal contracting (Webster 1992). Non-government organisations (NGO) are playing a more defined role in influencing consumer behaviour by encouraging more sustainable patterns of consumption through network relationships (Maignan et al. 2002). Collaborations can affect the rate of adoption of sustainable procurement.

3.2 Method

3.2.1 Sample and data collection

An online survey questionnaire was selected as the data collection instrument for the quantitative study. This format meant the survey was anonymous and potentially open to all members of peak bodies, which makes it difficult to establish a response rate and a sampling frame. Recruitment of survey respondents was not conditional on their organisation's currently undertaking ESP. In concurrence with the survey aims, the instrument tested the current and expected adoption of ESP and the hypotheses outlined above. In October 2005, I approached 20 peak industry bodies and networks operating in Australia active in the sustainability and procurement fields and invited them to participate in the survey. These peak bodies were selected because their member organisations represented a broad range of organisations across all industry sectors. I was fortunate to have an established rapport with representatives in several of these bodies, which meant they were accommodating and promoted the survey to their members.

The sample population included organisations operating in Australia, with either Australian or foreign ownership, and representing the public, private and not-for-

profit sectors, across all industry segments. Every effort was made to approach and include peak bodies that represented this diversity. The bodies and associations then alerted their members to the survey, either by broadcast emails or posting a message on their websites, with a hyperlink to the secure survey site.

The online survey was hosted by the Institute for Interactive Media and Learning at the University of Technology, Sydney (UTS), which allowed me to monitor the progress of the responses during the opening time. Originally, the questionnaire was held open for six weeks and 312 responses were received up to the end of November 2005. In an effort to capture more responses, this opening time was extended by another month to close before the Christmas break on 23 December. Another 15 responses were received, bringing the total to 327 survey responses. After a review of the 327 survey responses received, 108 were discarded due to the large number of unanswered questions. These included responses where less than 90 per cent of the questions were answered. As a result of the above procedures, a total of 219 useable questionnaires were retained for analysis. This sample represented a wide variety of industry sectors and sizes, with a large proportion being Australian owned (79%), and almost half being located in NSW. I acknowledge this dominance of NSW respondents is a limiting characteristic of the sample.

3.2.2 Questionnaire design

To answer the research questions a survey was developed and composed of 64 questions, distributed over eight sections that centred on particular aspects of environmentally sustainable purchasing practices by organisations (see Table 6). A copy of the survey protocol can be found in Appendix B. Part A obtained categorical information on the respondent's organisation. This included the industry sector, the number of employees, the annual spending on goods and services, whether Australia was the primary country of ownership, and the primary location in the country.

The next six sections contained closed ended questions, using a seven-point Likert rating scale, ranging from 1 = 'not at all' to 7 = 'very much', aside from three yes/no responses and one open-ended question asking the name of collaborating organisations. Part B of the instrument examined the influence systems processes and arrangement on organisational purchasing, including an environmental management system, sustainability reporting and policies and programs. It also examined the extent to which purchasing is influenced by senior management,

supplier relationships and purchasing arrangements. The next part, Part C, explored organisational innovativeness as a way of predicting organisations' predisposition to adopting ESP as an innovative form of purchasing with items proposed by Rogers' (2003) DoI.

Most of the questions in parts D and E explored perceived barriers to and opportunities for ESP adoption, detailed in the earlier section outlining the hypotheses. Items focused on the cost of products and programs, staff and organisational awareness and senior management support. Items predominantly in these two parts corresponded to categories aligned to Rogers' attributes of innovation, which include relative advantage, compatibility, complexity, trialability, observability and an additional item voluntariness (Moore & Benbasat 1991; Rogers 2003), detailed in, detailed in literature review (see Section 2.5.5.4) and in Section 3.3.10. Part D also tested one of the factors included in Rogers' framework, namely the extent to which decisions associated with ESP in organisations were voluntary rather than mandatory. In Part F the focus was on collaborative relationships to progress ESP. Here, respondents were initially asked if they participated in collaborative arrangements, then asked to nominate collaborators against predetermined fields before naming the network or alliance.

The concluding section of the survey, Part H, asked organisational representatives to record the year their organisation commenced or intended to commence phases of sustainable purchasing. The purpose of this section was to predict when the critical mass would adopt ESP and indicate the timeframe for the stages of implementation based on Rogers' (2003) DoI theory.

	Theme of Section	Purpose
Part A	Categorical information on organisations	
Part B	Influence of systems, processes and arrangement on organisational purchasing	Effect of purchasing arrangements on adoption
Part C	Innovativeness of organisations	Theory testing
Part D	Attributes of sustainable purchasing	Testing hypotheses Theory testing
Part E	Organisational purchasing practices and sustainability	Testing hypotheses Theory testing
Part F	Collaboration with other organisations	Affect of collaborative relationships on adoption
Part G	Stages of ESP	Theory testing
Part H	Adoption of ESP	Theory testing

Table 6 Summary of parts in survey questionnaire

3.2.3 Data analysis

Since the survey was administered in an online format, this provided a convenient format to check the progress of the responses. When the survey closed all responses were downloaded from the website hosted by UTS into a Microsoft Excel spreadsheet. Following this, all statistical analysis was carried out using the program Statistical Packages for Social Sciences (SPSS) Version 12. In order to answer the research questions and to evaluate the proposed hypotheses, correlation analysis was used to determine the relationships between relevant variables and the two variables (items 1 and 2 in Table 11) representing the depth and breadth of adoption of ESP respectively. Analysis of Variance (ANOVA) was used to determine the relationships between the level of environmentally sustainable purchasing and characteristics of the organisations measured by ordinal variables with more than two categories. To analyse responses to the one open-ended question in Part D, which focused on collaborator organisations, the names of individual organisations were categorised and frequencies recorded according to their industry sector. The Chi-square test was used to test associations between pairs of variables with ordinal levels of measurement.

In order to examine further the relationships between the level of adoption of ESP and other variables measured in this study, a number of regression analyses were carried out. Since these two variables (items 1 and 2 in Table 11) representing the depth and breadth of adoption of ESP were found to be highly correlated and to have the same pattern of correlations with other variables, they were combined by averaging their z-scores to form a single variable measuring the level of adoption of ESP. Hierarchical regression analyses were carried out with the level of adoption as the dependent variable (DV) and with organisational variables (sector, size and country of ownership) entered in the first step as control variables. In order to provide a more parsimonious solution, the backward elimination option as implemented in the SPSS regression procedure was used to reduce the number of variables in the model. Data reduction was also achieved for this purpose by using Principal Component Analysis of the predictor variables, with component scores being used as independent variables in the regression analyses. The extracted components were rotated to simple structure using the SPSS procedure, Varimax, and root-one criteria and inspection of the scree-plot was used to determine the number of components to be extracted.

3.3 Results

3.3.1 Sample characteristics

The sample selection process described above makes it difficult to accurately estimate the survey response rate. For ethical reasons, the survey was anonymous. Respondents logged on to a secure website and completed the survey without identifying their organisation. The anonymity of the respondents and their organisations may also have contributed to the high number of responses.

Industry sector	N	%	Industry sector	N	%
Agriculture, Forestry and Fishing	6	2.7	Finance and Insurance	4	1.8
Mining	15	6.8	Property and Business Services	7	3.2
Manufacturing	37	16.9	Government Administration & Defence	11	5.0
Electricity, Gas and Water Supply	6	2.7	State Government	18	8.2
Construction	8	3.7	Local Government	48	21.9
Wholesale Trade	13	5.9	Education	8	3.7
Retail Trade	6	2.7	Health and Community Services	3	1.4
Accommodation, Cafes & Restaurants	2	0.9	Cultural And Recreational Services	1	0.5
Transport and Storage	3	1.4	Personal and Other services	4	1.8
Communication Services	10	4.6	Not-for-Profit organisation	9	4.1
N=219					

Table 7 Industry sectors

The organisational characteristics of the survey sample are set out in Table 7 and discussed below. Australian New Zealand Standard Industry Classification (ANZSIC) codes[2] were used to segregate organisations and examine relationships between industry categories and ESP. The highest response was from local government (21.9%), followed by the manufacturing sector (16.9%), state government (8.2%), mining sector (6.8%) and wholesale trade (5.9%). The remainder of all respondents recorded less than 5 per cent in each of the remaining categories. To allow for more manageable analysis of results, the twenty industry sectors were collapsed into four groups comprised of government (33.8%), (made up of government administration and defence, local, state and education), NFP

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[2] http://www.arc.gov.au/apply_grants/anzsic_codes.htm

(4.1%), manufacturing (16.9%) and the all other remaining sectors (45.2%) as shown in Table 8.

Industry Sector	N	%
Government	74	33.8
Not-for-profit	9	4.1
Manufacturing	37	16.9
The remainder	99	45.2
N=219		

Table 8 Industry sector groupings

The Australian Bureau of Statistics (ABS) classifications of businesses were used to describe organisations based on number of employees. Small and medium-sized businesses (SMEs) have fewer than 200 employees. Small businesses have fewer than 20 employees and micro fewer than five employees and medium-sized businesses have between 20 and 199 employees[3]. Organisations with more than 1000 employees, both part and full time represented a third of survey respondents (33.3%) and were the largest segment followed by organisations with 201-1000 employees (22.8%) and organisations with 21-200 employees (18.3%). See Table 9.

The annual spending by organisations on procurement also varied as displayed in Table 10. Slightly less than a fifth of organisations surveyed had annual spending on purchasing goods and services, excluding accommodation and labour costs, in the $10 million to $50 million range. Organisations spending in this range were the most highly represented group of respondents (18.7%) followed by organisations spending in excess of $500 million (14.6%) and organisations spending $100-500 million (13.2%). The survey results revealed that Australia was predominantly the primary country of ownership of respondent organisations (79.0%) followed by the United States of America (6.4%), and the remainder were distributed across a range of countries in Europe and Scandinavia. The highest response was from organisations with their main location in NSW at just less than half (49.3%), followed by Victoria (21.9%) and Queensland (14.6%).

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[3] ABS: Small Business in Australia 2001 [Catalogue no. 1321.0])

Part A of the questionnaire obtained information on the characteristics of the respondent's organisation. This included the industry, the number of employees, the annual spending on goods and services, and whether Australia was the primary country of ownership and the state of New South Wales was the primary location in the country.

Number of employees	N	%
14 employees	21	9.8
5–20 employees	30	14.0
21–200 employees	40	18.7
201–1000 employees	50	23.4
Over 1000 employees	73	34.1
N =219		

Table 9 Number of employees

Range of spending	N	%	Range of spending	N	%
1. Less than $50,000	14	6.6	6. $5–10 million	16	7.5
2. $50,000–$100,000	8	3.8	7. $10–50 million	41	19.3
3. $100,000–$500,000	23	10.8	8. $50–100 million	14	6.6
4. $500,000–$1 million	15	7.1	9. $100–500 million	29	13.7
5. $1–5 million	20	9.4	10. Over $500 million	32	15.1
N = 219					

Table 10 Annual spending on goods and services

Table 11 gives the means and standard deviations of the main variables of the study. For all items, except numbers 3 and 4, participants responded using a 7-point rating scale, ranging from 1 = 'not at all' to 7 = 'very much'. The first two items in this table were used to assess two different aspects of the level of implementation of sustainable purchasing in the organisation. These are, firstly, the extent to which environmentally sustainable purchasing has been implemented across the entire organisation ('depth'), and, secondly, the extent to which environmentally sustainable purchasing is a routine practice in the organisation, ('breadth'). The remaining items listed in Table 11 represent a variety of organisational characteristics, practices and attitudes of managers and participants that could plausibly be expected to be related to the level of implementation of environmentally sustainable purchasing in the organisation.

items	M	s.d.	Correlations Item 1	Item 2
1. Environmentally sustainable purchasing has been implemented across the entire organisation ('breadth of implementation')	3.28	(2.13)	1.00	.912(**)
2. Environmentally sustainable purchasing is a routine practice in our organisation ('depth of implementation')	3.38	(2.06)	.912(**)	1.00
3. Number of employees			-.238(**)	-.278(**)
4. Annual spending on goods and services			-.206(**)	-.245(**)
5. Senior management supports sustainable purchasing practices	4.81	(1.86)	.608(**)	.639(**)
6. There is a commitment from senior management to sustainability	4.46	(1.96)	.484(**)	.518(**)
7. Lack of staff awareness of environmentally sustainable products is a barrier to implementing sustainable purchasing	4.18	(1.89)	-.284(**)	-.312(**)
8. Lack of organisational knowledge about environmentally sustainable purchasing practices is a barrier to implementing sustainable purchasing	4.06	(1.92)	-.402(**)	-.422(**)
9. Environmentally sustainable purchasing forms part of our sustainability program and policies	4.33	(1.88)	.713(**)	.696(**)
10. Introducing environmentally sustainable purchasing is consistent with our organisation's environmental goals and existing programs	5.21	(1.88)	.580(**)	.599(**)
11. Environmental Management System ISO 14001 influences purchasing	3.51	(2.09)	.272(**)	.263(**)
12. Public sustainability reporting e.g. Global Reporting Initiative influences purchasing	3.08	(1.94)	.334(**)	.282(**)
13. Environmental sustainability is a key consideration of supplier selection	4.04	(1.88)	.644(**)	.675(**)
14. The cost of environmentally sustainable products is a barrier to implementing sustainable purchasing programs and policies	3.94	(1.84)	-.066	-.081
15. The cost of introducing environmental sustainable purchasing programs is a barrier to introduction	3.52	(1.77)	-.089	-.089
16. Collaboration with other organisations has assisted the organisation's progress in environmentally sustainable purchasing	3.95	(1.97)	.624(**)	.609(**)

Table 11 Descriptive statistics of main variables and correlations with variables measuring adoption of environmentally sustainable purchasing (ESP) practices.

** Correlation is significant at the 0.01 level (2-tailed).

(There were no correlations significant at 0.05 level)

For all items participants responded using a 7-point rating scale, ranging from 1 = 'not at all' to 7 = 'very much'

3.3.2 Level of adoption of environmentally sustainable purchasing (ESP)

The level of adoption of ESP across organisations was determined by two variables. Variables 1 and 2 in Table 11, representing the breadth and depth of implementation of ESP in the respondents' organisations, can be seen to have mean values below the scale mid-point value of 4 (means = 3.28 and 3.38 respectively). This indicates an overall low level of implementation of ESP in the sample. Responses to items examining the breath and depth of ESP adoption are shown in Figure 7 and Figure 8 respectively.
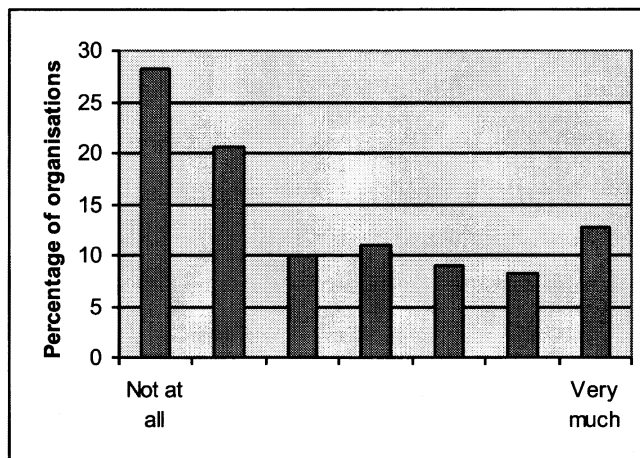
Figure 7 Level of ESP implemented across the entire organisation

Survey results from the majority of organisations indicate that ESP is not an established organisational practice in Australian organisations. Most organisations reported that ESP has not been implemented across the entire organisation and also it is not a routine practice in most organisations (68.9%).
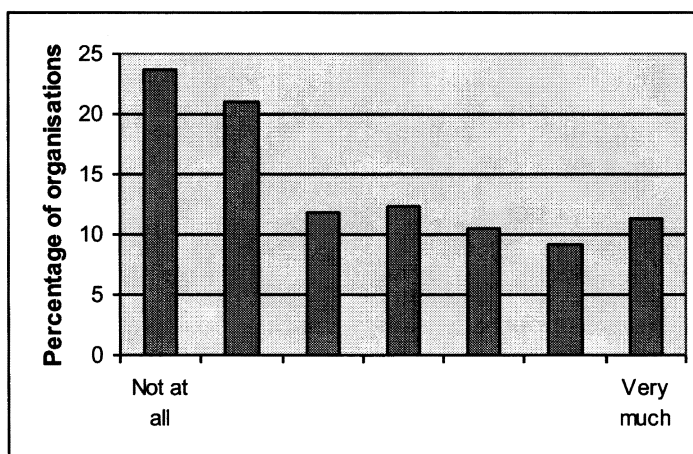
Figure 8 Level of ESP in organisations as a routine practice

3.3.3 Evaluation of hypotheses

The section below evaluates the hypotheses described earlier in Section 3.1.1. Table 11 gives the correlations of the two variables measuring the breadth and depth of ESP (variables 1 and 2 in Table 11) with a number of other variables that are relevant to the testing of the hypotheses listed previously.

> H1   As the size of organisations increase their level of implementation of sustainable purchasing increases.

Organisational size was determined by two variables: the number of employees and the quantity of annual spending on goods and services (items 3 and 4 in Table 11). From Table 11 it can be seen that the two measures of organisational size, item 3: the number of employees, and item 4: the annual spending on goods and services, are both negatively correlated with the two items (1 and 2) used as measures of the level of implementation of sustainable purchasing. The correlations are only small, ranging from -0.206 to -0.278, but are all statistically significant for an alpha rate of 0.01. This hypothesis is therefore not supported. In fact, the opposite trend was observed, smaller organisations were found to have a greater level of implementation of environmentally sustainable purchasing. The relationship between organisational size and other variables is discussed in greater detail in Section 3.3.5.

> H2   A higher level of commitment to sustainability and support by senior management is positively associated with the implementation of environmentally sustainable purchasing programs.

Senior management support and their commitment to sustainability also influence the adoption of sustainable procurement. Positive and statistically significant correlations can be seen in Table 11 between the level of management support (item 5) and the two implementation measures (r's = 0.608 and 0.639 respectively: p's < 0.01), and between the level of commitment (item 6) and the two implementation measures (r's = 0.484 and 0.518, respectively; p's < 0.01). Therefore this hypothesis is supported. An interesting observation, not directly related to P2, is that, as shown in the Figure 9, the highest commitment to ESP was from senior managers in small organisations.
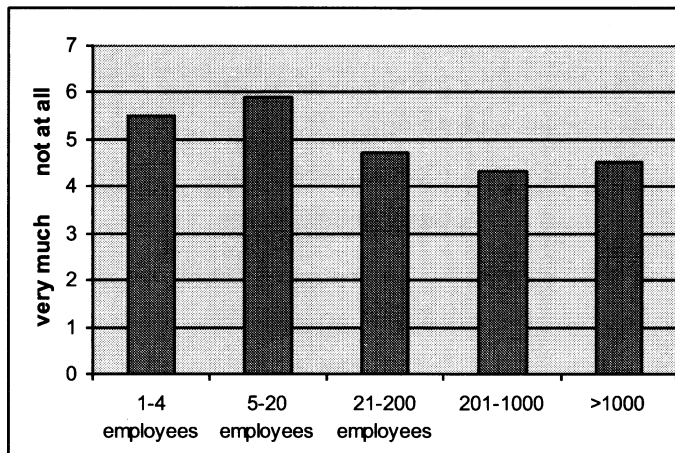
Figure 9 Senior Management support for ESP

> H3 Perceived lack of staff awareness of environmentally sustainable
> products and a lack of organisational knowledge about environmentally
> sustainable purchasing practices is a barrier to implementation.

Together with senior management endorsement of ESP, staff awareness and
knowledge are additionally contributing factors influencing adoption. The mean
ratings for the items relating to the lack of staff awareness (item 7) and
organisational knowledge (item 8) as being barriers to the implementation of ESP
were both just above the scale mid-point of 4.0 (means of 4.18 and 4.06
respectively). This indicates that respondents were, on average, in moderate (but
not strong) agreement with these two factors being barriers to the implementation
of sustainable purchasing. Thus hypothesis three is partially supported.

It is interesting to note that there are consistently negative and statistically
significant correlations between these two items (7 and 8) and the two measures of
the level of implementation. That is, those respondents who perceive that these
factors are greater barriers also report a lesser level of implementation of
sustainable practices in their organisations. This too could be regarded as evidence
that these factors do, in fact, act as barriers to a greater level of implementation,
as stated in hypothesis three.

> H4 The organisation's costs of introducing environmentally sustainable
> products and introducing purchasing programs are perceived to be barriers
> to the implementation of ESP.

Several studies have identified the perceived cost of environmentally sustainable products and the cost of introducing programs as obstacles to ESP adoption (ECO-Buy 2005, 2006, 2008; Min & Galle 1997). Respondents' opinions on the extent to which these costs affected the implementation of ESP were measured by items 14 and 15 in Table 11. Mean ratings for both these items were just below the scale mid-point of 4.0 (3.94 and 3.52 respectively) indicating that, on average, there was not agreement on these costs being important barriers. Therefore this hypothesis is not supported. However, there was a wide variation of opinion on this, as can be seen in the frequency distributions of response to these items, as shown in Figure 10 and Figure 11. Therefore it appears that costs could act as a barrier for a substantial minority of organisations. This hypothesis is not supported.
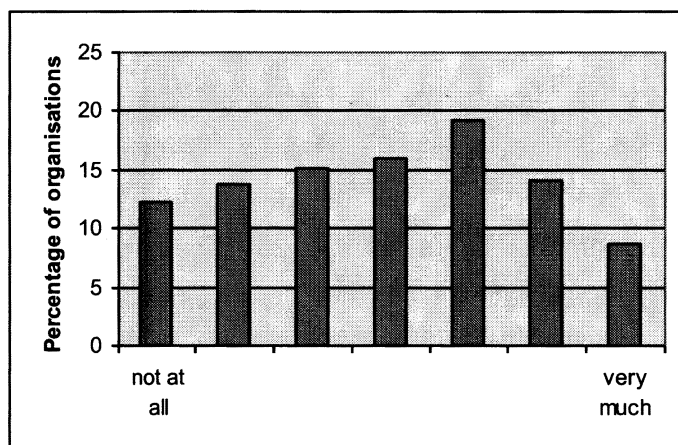
Figure 10 Frequency distribution of responses to item 14 (Cost of products is a barrier to ESP implementation)
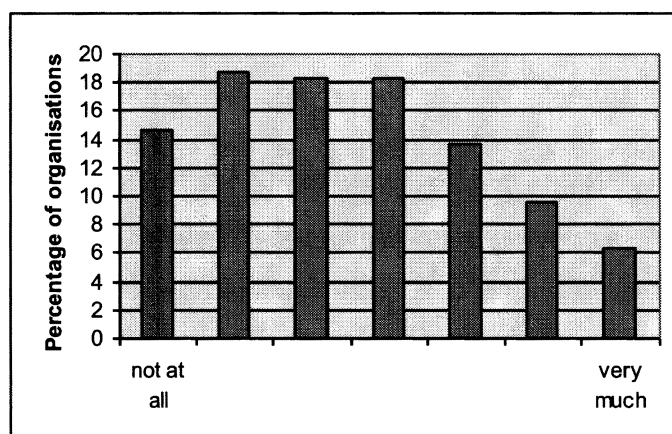
Figure 11 Frequency distribution of responses to item 14 (Cost of introducing purchasing programs is a barrier to ESP implementation)

In summary, survey results show that cost of environmentally sustainable products and costs associated with introducing ESP could act as potential barriers.

> H5   Organisations with corporate sustainability programs are more likely to implement environmentally sustainable purchasing.

As shown in Table 11 this hypothesis is supported as the observed effect between the set of correlations was found to be statistically significant. There are positive correlations between the extent to which ESP forms part of an organisation's sustainability program and policies (item 9) and the breadth of ESP (r = 0.713, p< 0.01) and depth of ESP implementation (r = 0.696, p< 0.01).

To examine the relationship of implementation of ESP with the existence of established sustainability systems and reporting regimes, correlations were examined between implementation and the adoption of systems including an EMS (item 11) and sustainability reporting including Global Reporting Initiative (GRI) (item 12) as influencing factors in purchasing. It is assumed that if organisations are using the GRI they are actively pursing sustainability in their organisation with a high degree of commitment and reporting on their progress. As shown in Table 11 these correlations were positive and statistically significant (r's = 0.272 and 0.263 for item 11, and, r's = 0.334 and 0.282, for item 12; all p's < 0.01). These findings also give support to hypothesis five.

> H6   As the size of an organisation increases it is more likely environmental sustainability will be a key consideration of supplier selection.

Organisational size was also examined for its effect on opinions on whether environmental sustainability was a key criterion in supplier selection. To examine this hypothesis, correlations between item 13 in Table 11 and the two size variables (items 3 and 4) were calculated. These correlations are shown in Table 12 and results do not support this hypothesis. Small negative, but statistically significant, correlations between organisational size represented by the number of employees (r =-0.210 p< 0.01) and annual spending (r =-0.177, p< 0.01) and environmental sustainability being a key criterion in supplier selection.

Item	Correlations	
	Number of employees	**Annual spending on goods and services**
Environmental sustainability is a key consideration of supplier selection	-.210(**)	-.177(**)

Table 12 Organisational size and environmental sustainability of suppliers

** Correlation is significant at the 0.01 level (2-tailed).

Correlations were also calculated to examine the extent to which environmental sustainability as a key consideration in supplier selection is related to the breadth and depth of ESP as an organisational practice. Results shown in Table 11 show positive and statistically significant correlations between the breath ($r = 0.644$, $p< 0.01$) and depth ($r = 0.675$, $p< 0.01$) of ESP implementation and environmental sustainability being a key criteria in supplier selection (item 13).

> H7   The extent of collaborative arrangements between organisations is positively associated with the level of adoption of sustainable organisational procurement.

Correlations calculated between responses examining the extent of collaborative arrangements between organisations (item 16 in Table 11) and the level of adoption of ESP were strong and statistically significant for an alpha rate of 0.01. The results indicate that collaboration between organisations is positively related to the breadth ($r = 0.624$, $p<0.01$) and depth ($r = 0609$, $p<0.01$) of ESP implementation. This hypothesis is supported.

Item	N	yes	no
Is your organisation involved in collaborate arrangements with other organisations to progress sustainable purchasing?		41.5%	58.5%
	217	90	127

Table 13 Participation in collaborative arrangements

To gain additional information about the types of collaboration and the range of collaborators associated with ESP, participants were asked if their organisation had participated in a collaborative arrangement answering 'yes' or 'no', which is displayed in Table 13. The results show that just over 40 per cent of organisations collaborate with other organisations to progress sustainable purchasing. The next section examines the types of organisations acting as partners in collaborative initiatives.

3.3.4 Collaborators in ESP

Survey results reveal procuring organisations collaborate with a range of organisations across several industry sectors. To investigate the characteristics of these collaborators further, respondents that partnered with other organisations were asked to nominate the sector represented by their collaborative partner. The survey provided five predetermined fields: NGO, government department, community group, industry association and not for profit environmental advocate as well as an additional field, 'other', nominated by respondents, set out in Table 14. Assuming organisations had multiple collaborators across several sectors, participants were at liberty to nominate more than one sector, which accounts for the number of responses (186) from the sample size (90).

Type of partner organisation	Frequency (N)	Percentage
Government department	57	30
Non-government organisation	47	24
Industry association	38	20
Community group	19	10
Not-for-profit environmental advocate organisation	18	10
	179	
Other (As nominated by participants)	7	6
Local government	3	
Parent business	1	
Municipal association	1	
Other local businesses	1	
For profit corporate partners	1	
	186	*100*

Table 14 Industry sector of ESP partners

The results show that government departments (30%) were the most frequent partner followed by NGOs (24%), industry associations (20%), with community groups and not-for-profit environmental advocates each accounting for 10 per cent. The remaining group nominated by participants (6%) included local government, parent business, municipal association, other local businesses and for-profit corporate partners.

Classification of collaboration organisation	Frequency	Classification of collaboration organisation	Frequency
Government departments	27	Environmental NGO	4
Federal government department	3		
State government department/	10	Environmental purchasing programs	19
Local government	13	Green purchasing program	14
Regulatory framework	1	Eco labelling organisation	3
		Green procurement network	2
Alliances/programs/associations	13		
International local government alliance	3	Private companies	17
State government sustainability program	2	Australian company	8
Sustainability network	2	Overseas organisation	9
Industry association	6	N = 156	

Table 15 Classification of collaborator organisations

Survey respondents identified numerous individual collaborative partners (156) in sustainable procurement progression. To gain more detail about these partners respondents were asked to name their collaborators. The 80 different collaborator organisations of the 156 responses displayed in Table 15 range across five categories displayed in Figure 12. As a group government organisations were the most frequent partners, followed by environment purchasing programs, private companies, alliances, programs and associations and environmental NGOs. Consistent with the results in the previous section government featured strongly and included local, state and federal government as well as regional groups of local municipalities. Respondents mentioned relatively few companies, which could also be interpreted as suppliers. Individually, a green purchasing program was the most frequent partner recording 14 responses, followed by local government (13 responses), and state government departments (10 responses).

■ Government

■ Private companies

□ Alliances

▣ Programs and associations

■ Environmental NGOs
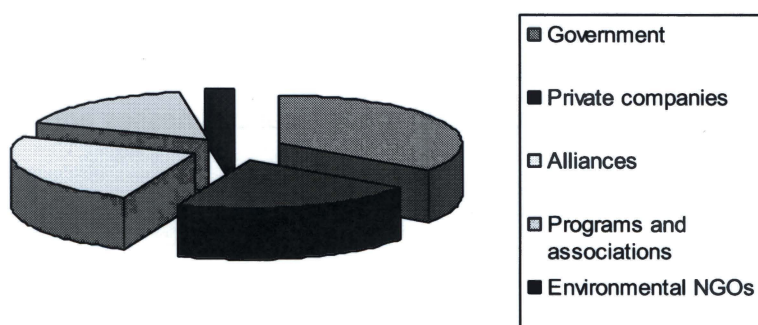
Figure 12 Collaborator groups in the adoption of ESP

3.3.5 The influence of organisational characteristics on adoption

The literature suggests that larger organisations with more organisational slack or available resources were more likely to implement change programs; therefore it was postulated that ESP would be more prominent in larger organisations. However, the results show a reverse tendency. The survey results revealed that smaller organisations characterised by fewer employees and less annual procurement spending achieved the highest levels of adoption. Results previously reported in Section 3.3.3 show smaller organisations have the highest adoption rates in the sample. The correlations are only small, ranging from -0.206 to -0.278, but are all statistically significant for an alpha rate of 0.01. The above correlations represent the overall linear relations between the organisation size and implementation variables. In order to examine whether there are any non-linear relationships between the above sets of variables, the average level of implementation was calculated for each category of the organisational size variables. Industry sector and country of origin are now discussed.
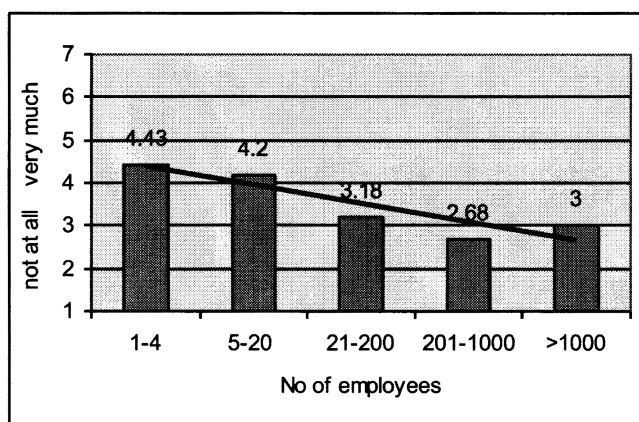
Figure 13 Number of employees and ESP across the entire organisation
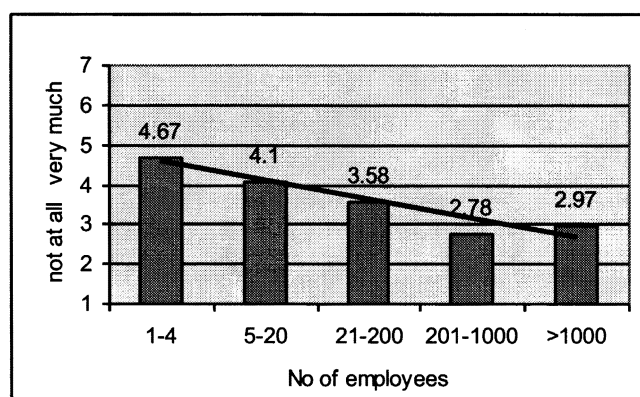
Figure 14 Number of employees and ESP as a routine organisational practice

Based on number the number of employees ESP can be seen to be highest in micro organisations (1-4 employees) with high mean scores (4.43 and 4.67 for items 1 and 2 respectively in Table 11) and in organisations that spent $1-5 million annually on goods and services (means = 4.40 and 4.65). Further, the mean results displayed in Figure 13 and Figure 14 indicates a downward trend in ESP with an increase in employee numbers.
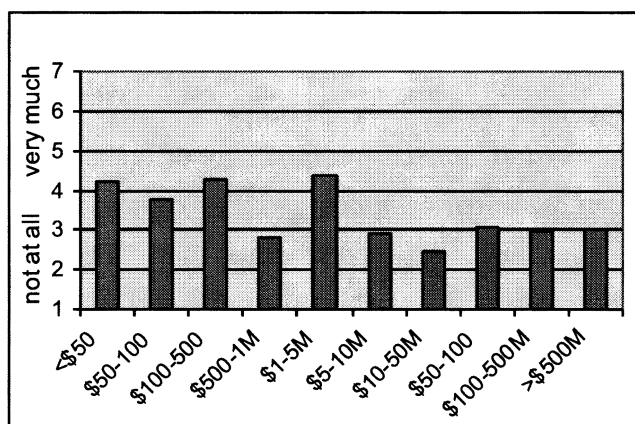
Figure 15 Breadth of implementation of ESP as a function of organisational size (organisational spending)
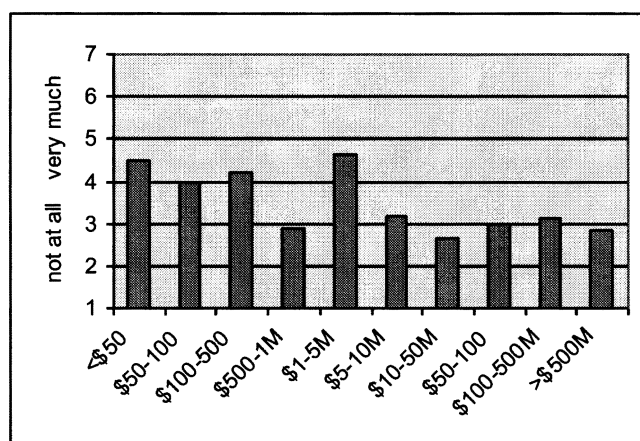
Figure 16 Depth of implementation of ESP as a function of organisational size (organisational spending)

Figure 15 and Figure 16 display the results of examining organisational procurement spending, which were also analysed and revealed implementation of ESP across the entire organisation and as a routine practice were the highest in organisations spending $1-5 million annually on goods and services (means = 4.40 and 4.65 respectively). Organisations spending $10-50 million recorded the lowest scores for breadth of implementation (mean = 2.44) and these were least likely to have ESP as a routine practice. Further, based on mean responses, ESP can be

seen to be highest in micro organisations (means = 4.43 and 4.67 for items 1 and 2 respectively).

Overall, the survey results reveal that an increase in organisational size, based on number of employees and volume of annual spending did not increase the implementation of ESP.

3.3.5.1 Influence of industry sector on adoption

Based on a sectoral analysis of ESP adoption, organisations in the not-for-profit (NFP) sector are leading, while manufacturers exhibit the lowest level of implementation. The NFP sector recorded the highest degree of breadth 4.67 (2.50) and depth 5.33 (2.06) of implementation (see Table 16 and Table 17). The sector labelled 'other' (composed of organisations not in the government NFP or manufacturing sector) recorded the next highest score for depth 3.43 (2.06) and slightly lower for breadth 3.23 (2.07). Within this cohort the breadth and depth of ESP implementation was above the midpoint in the following individual industry sectors, construction, wholesale trade, retail trade, cultural and recreational services, personal and other services. Government organisations recorded relatively low levels of breadth 3.41 (2.10) and depth 3.28 (1.93) of ESP implementation, however manufacturing organisations recorded the lowest scores for breath 2.81 (2.17) and depth 2.95 (2.11).

Industry sector	N	Mean	s.d.
Not-for-Profit	9	4.67	2.50
Government	74	3.41	2.10
Other	99	3.23	2.07
Manufacturing	37	2.81	2.17
Total	219	3.28	2.13

Table 16 Breadth of ESP across sectors

Industry sector	N	Mean	s.d.
Not-for-Profit	9	5.33	2.06
Other	99	3.43	2.06
Government	74	3.28	1.93
Manufacturing	37	2.95	2.11
Total	219	3.38	2.06

Table 17 Depth of ESP across sectors

Although NFP organisations recorded with the highest mean score for the level of implementation, this was based on only nine organisations and so this result should be interpreted with caution. Aside from the small number of NFP organisations that reported high levels of adoption, organisations in the government sector had the next highest levels of ESP adoption across the entire organisations while organisations in the 'other' category showed higher levels of ESP as a routine practice. In conclusion, the findings infer that that ESP programs are being implemented across government organisations, but as yet this is not a routine practice and frequently as an everyday in some units of organisations represented by the 'other' category.

3.3.5.2 Influence of country of origin on adoption

Australian organisations and companies other than American-owned displayed similar results (see Table 18 and Table 19). American-owned companies displayed the lowest levels of ESP adoption for breadth and depth of adoption with means scores of 2.21 and 2.93 respectively. There was not a marked difference in the results examining an organisation's the country of ownership and the breadth of implementation in organisations from countries other than the USA. Scores indicating the depth of implementation were slightly highly for Australian companies (M = 3.40) and those organisations other than US-owned (M = 3.48). It should be noted that Australian organisations made up the largest proportion of the survey respondents (79.0%).

Country of origin	Mean	s.d.
Australia	3.35	2.16
USA	2.21	1.58
Other	3.34	2.21

Table 18 Breadth of ESP and country of origin

Country of origin	Mean	s.d.
Australia	3.40	2.06
USA	2.93	1.98
Other	3.48	2.20

Table 19 Depth of ESP and country of origin

In summary, this section has discussed some of the organisational characteristics that influence ESP adoption. While results show a relatively low level of adoption of sustainable procurement in Australian organisations it was most pronounced in micro organisations with fewer than four employees and in NFP organisations and

lowest in manufacturing organisations. Compared with organisations with head offices in Australia and other countries, US-based organisations recorded the lowest rates of adoption. Typically, organisational attributes including size, industry sector and country of origin are more established organisational characteristics, compared with internal factors guided by executive management decisions and operations. The influence of internal factors such as senior management commitment and staff training which are more flexible to amend and at the discretion of management decisions are discussed in the next section.

3.3.6 The influence of purchasing arrangements on adoption

Results in Section 3.3.3 show that environmental sustainability is a key criterion in supplier selection, and there is a slight trend for smaller organisations to give greater consideration to environmental sustainability when selecting suppliers. The survey findings in this section reveal that respondents perceive that organisational purchasing is predominantly influenced by formalised arrangements, including contracts and strategic partnerships with suppliers and organisational policies and programs. Table 20 shows respondents' mean ratings of the extent to which a number of different factors influence purchasing in their own organisations.

Results reveal that respondents perceive that purchasing is strongly influenced by contracts with suppliers (M = 5.26) and to a strong but lesser extent strategic partnerships with suppliers (M = 4.85) and guided by organisation-wide policies and programs (M = 4.87). There is moderate agreement that purchasing is directed by employee-driven initiatives (M = 4.33) and influenced by a central purchasing department (with a mean score of 4.02, which is just above the scale mid-point of 4). To examine these purchasing features in more depth, Analysis of Variance (ANOVA) was used to examine the influence of the organisational size, determined by the number of employees and the level of purchasing spending measured by ordinal variables.

Item	N	Mean	s.d.
1. Purchasing is influenced by organisation-wide policies and programs	218	4.87	1.81
2. Purchasing is influenced by contracts with suppliers	217	5.26	1.69
3. Purchasing is influenced by strategic partnerships with suppliers	217	4.85	1.81
4. Purchasing is influenced by department /business unit procedures	217	4.82	1.70
5. Purchasing is influenced by employee-driven initiatives	214	4.33	1.71
6. Purchasing is influenced by a central purchasing department	215	4.02	2.13

Table 20 Extent to which formalised activities influence organisational purchasing

3.3.6.1 Influence of organisation-wide polices and programs on purchasing

Means scores show that organisation-wide policies and programs (item 1, Table 20) have a moderate influence on purchasing (M = 4.87). Almost two-thirds of organisations surveyed (59.2%) reported that organisation-wide policies and programs influence purchasing. Organisations with an annual expenditure over $500 million recorded the strongest influence of programs and policies on purchasing (M = 5.38) and the influence of programs and policies on purchasing was lowest in organisations with annual spending of $50,000-$100,000. Results reveal the influence of policies and programs on purchasing increased with a corresponding increase in staff numbers. There was strong agreement that policies and programs influenced purchasing for organisations with more than 1000 employees, with a mean score of 5.19. The influence of supplier relationships, including contracts and strategic partnerships, on purchasing was also examined.

3.3.6.2 Influence of contracts with suppliers on purchasing

Results show respondents perceived that contracts with suppliers (item 2, Table 20) had a strong influence on organisational purchasing. Almost three-quarters (74.2%) of all organisations reported that contracts with suppliers influenced their purchasing, with mean scores consistently above the midpoint of 4. Results show that having the influence of contracts with suppliers on organisational purchasing was relative to organisational size (see Table 21 and Table 22). The influence of supplier contracting was strongest in large organisations with over 1000 employees, with a mean score of 5.62. Contracting was most influential in organisations with an annual spend of between $100–500 million (M = 5.90) and slightly less influential in organisations with an annual expenditure over $500 million (M = 5.81). These results indicate a tendency for supplier contracts to influence procurement arrangements in larger organisations (based on the number of employees and annual expenditure) to have contracts with suppliers.

Number of employees	Contracts			Strategic partnerships		
	N	Mean	s.d.	N	Mean	s.d.
1-4	20	4.20	2.11	20	4.75	2.07
5-20	29	4.83	2.09	29	4.97	2.08
21-200	40	5.10	1.77	40	4.43	2.07
201-1000	50	5.46	1.43	50	4.82	1.63
>1000	73	5.62	1.34	73	4.99	1.62
Total	212	5.24	1.69	212	4.82	1.82

Table 21 Mean responses to the extent to which purchasing is influenced by contracts with suppliers and strategic partnerships and number of employees

Procurement Spend	Contracts			Strategic partnerships		
	N	Mean	s.d.	N	Mean	s.d.
Less than $50,000	13	4.38	2.33	13	4.00	2.35
$50,000–$100,000	8	4.13	2.30	8	4.13	2.10
$100,000–$500,000	23	4.52	1.90	23	4.96	1.99
$500,000–$1 million	15	5.20	1.97	15	4.87	2.10
$1–5 million	19	4.68	2.03	19	4.68	2.001
$5–10 million	16	5.31	1.66	16	4.81	2.11
$10–50 million	41	5.39	1.44	41	4.41	1.94
$50–100 million	14	5.36	1.40	14	5.14	1.46
$100–500 million	29	5.90	1.11	29	5.03	1.35
Over $500 million	32	5.81	1.26	32	5.50	1.30
Total	210	5.23	1.70	210	4.82	1.83

Table 22 Procurement spending and contracts with suppliers and strategic partnerships

3.3.6.3   Influence of strategic partnerships on purchasing

Like contracts, strategic partnerships with suppliers (item 3, Table 20) also influenced purchasing. More than half of organisations (63.1%) responded that strategic partnerships influenced their purchasing arrangements. Mean scores show that the strategic partnerships influenced purchasing most in organisations with an annual expenditure over $500 million (M = 5.50) and in organisations with over 1000 employees (M = 4.99) and with 5-20 employees (M = 4.97). Like contractual arrangements, strategic partnerships influenced purchasing most in large organisations.

3.3.6.4   Influence of autonomy on purchasing

In addition to organisational polices and programs and supplier relationships the degree of autonomy given to centralised departments, business units and employees also influences the setting of organisational purchasing and its predilection to ESP adoption. In combination with these purchasing arrangements the types of decisions associated with ESP, ranging from mandatory to optional, can also influence ESP adoption. These two aspects of purchasing are discussed in the following sections.

3.3.6.5   Purchasing arrangements

Organisational purchasing procedures include business unit, employee driven initiatives and a central purchasing department (items 4, 5 and 6 respectively, Table 20). Results reveal that organisational purchasing is characterised by a degree of autonomy at the business unit and employee level, as opposed to centralised purchasing arrangements. Of these purchasing arrangements, business

unit procedures had the greatest influence on purchasing (with a mean score of 4.82) with over half of respondents (62.7%) recording more than the midpoint 4. To a slightly lesser extent employee-driven initiatives (M = 4.33) and central purchasing departments (M = 4.02) influenced organisational purchasing. Like contracts and strategic partnerships with suppliers, organisational size also appears to influence purchasing arrangements. The influence of business unit practices on purchasing was strongest in organisations of over 1000 staff, with a mean score of 5.29. Employee-driven initiatives were highest in SMEs of 21 to 100 employees (M = 4.62).

3.3.7 Sustainable procurement as an organisational innovation

Given that survey findings show that sustainable procurement adoption in Australian organisations is in its seminal stages, this section discusses mechanisms that may influence the rate of adoption, by examining sustainable procurement as an organisational innovation. I apply several tools developed by Rogers' (2003) DoI theory to explore sustainable procurement as a unique innovation. These include the types of organisational decisions that embody ESP, ranging from optional to mandatory, the stages of implementation including pre-adoption, before applying one of Rogers' (2003) frameworks as a prospective tool to project the potential adoption of sustainable procurement by Australian organisations in the future.

3.3.7.1 Purchasing decisions

In combination with the independence given to business units and employees to conduct their own purchasing activities, Rogers (2003) suggests adoption is influenced by the type of innovation decision (optional, collective and authority). His typology was applied to survey items, and results of the yes/ no answers are displayed in Table 23.

Type of decision	item	Agree	Disagree
Optional	Business units have the freedom to undertake environmentally sustainable purchasing, as long as they meet targets and adhere to policies	91.7%	8.3%
Collective	Staff have the option to purchase environmentally sustainable products	85.3%	14.7%
Authority	Senior management in your organisation mandate environmentally sustainable purchasing	39.4%	60.6%

Table 23 Option to undertake ESP

Results reveal that relatively few organisations mandated ESP and that in most organisations business units and staff had the option to undertake ESP. There was

strong agreement that business units (91.7%) had the freedom to carry out ESP and this was most pronounced in the governmental sector (94.6%) followed by the manufacturing sector (91.9%). The strongest endorsement of business unit discretion to purchase in an environmentally sustainable manner came from SMEs (95.0%) followed by organisations with more than 1000 employees (94.5%). Environmentally sustainable purchasing was mandated by senior management in just over a third of organisations surveyed (39.4%).

Employees in the majority of organisations surveyed have the option to purchase environmentally sustainable products (85.3%). Staff in organisations of 5-20 people have the most freedom to purchase sustainable products (93.1%), followed by staff in micro organisations of fewer than four employees (90.0%). Government-sector staff (90.5%) have the most freedom to purchase sustainable products followed by those in not-for-profit organisations (88.9%). Organisations with annual expenditure of between $100,000-500,000 (100%) and those spending between $50–100 million (100%) have the option to purchase sustainable products. This option was reduced in organisations spending over $500 million (71.9%) and those with an annual expenditure of $50,000–100,000 (75.0%). In summary, the results show that, for most organisations, business units and staff have the option to undertake ESP, while ESP is mandated by senior management in less than 40 per cent of organisations.

3.3.7.2 Stages of implementation

Survey results from the previous section could infer that most organisations are considering ESP as a future pursuit or are in the early stages of introduction. This section examines the sequence of organisational milestones along the path to ESP implementation. I apply one of Rogers' (2003) frameworks that classify the implement of organisational innovations into five successive stages displayed below in Figure 17. Survey questions corresponding with Rogers' stages of ESP in organisations are set out in Table 24.

Initiation		Implementation		
Agenda setting	Matching	Redefining/ restructuring	Clarifying	Routinising
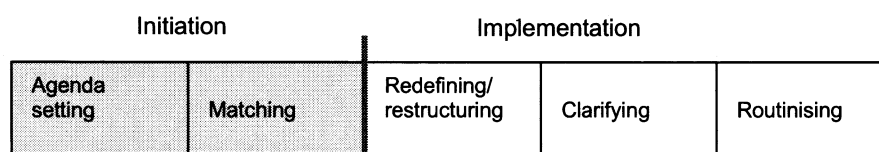
Figure 17 Stages of implementation of an innovation, (Rogers 2003)

Rogers (2003) divides the innovation process in organisations into two main stages: initiation and implementation. Survey results displayed in Table 24 show the majority of organisations are in the initiation phase and have made the decision to

adopt ESP, with means scores of 3.71 (1.99) reported for agenda setting, or perceive a need for the ESP, and a high mean score for matching 5.21 (1.88) or fitting a problem from the organisation's agenda with an innovation (Rogers 2003).

Stage of ESP	N	Mean	s.d.
Agenda Setting – Our organisation has identified a gap between its environmental performance and its purchasing practices	213	3.71	1.99
Matching – Introducing environmental purchasing corresponds with our organisation's environmental goals and existing programs	219	5.21	1.88
Refining – Our organisation has customised environmentally sustainable purchasing models from other organisations to suit our organisation	218	2.97	1.92
Clarifying – Environmental purchasing has been implemented across the entire organisation	219	3.28	2.13
Routinising – Environmental purchasing is a routine practice in our organisation	219	3.38	2.06
Reinventing – Environmental purchasing in the organisation has been reviewed and changed significantly over time	218	3.55	1.93

Table 24 Stages of organisational ESP implementation

The low scores recorded in implementation stages of redefining 2.97 (1.92), clarifying 3.28 (2.23), routinising 3.38 (2.06), reinventing 3.55 (1.93), all with means scores below the mid-point, further demonstrate that ESP is not an embedded practice in Australian organisations. In conclusion this implementation model demonstrates that Australian organisations surveyed are in the adoption (Bessant & Tidd 2007) or initiation phase (Rogers 2003) deciding to adopt ESP and are initiating actions in preparation for its introduction.

3.3.8 Timeframe of adoption phases

The previous section illustrated that most organisations identified strongly with undertaking activities aligned with the matching phase of ESP adoption. This section reports on survey results where respondents were asked to identify what year (either retrospective or prospective) their organisation embarked on a range of milestones corresponding to Rogers' initiation and matching phases (Rogers 2003), which is displayed in Table 25 and discussed below.

Phase	Sample Number	Adoption range in yrs	% of organisations	Peak
Initiation				
Interest	N = 169	2000–2006	(61%)	18 in 2000 and 18 in 2006
Seek information	N = 170	2000–2004	(48%)	21 in 2004
Matching				
First buy sustainable products	N = 168	2003–2005	(36%)	24 in 2004
Trial sustainable purchasing	N =165	2003–2006	(49%)	24 in 2005
First apply sustainable purchasing practices	N = 170	2004–2006	(39%)	27 in 2006

Table 25 Phases in pre-adoption of ESP

Survey responses reported that organisations had implemented, or planned to implement, each of the five stages of ESP over a timeframe from 1950 to 2000. However, as displayed in Figure 18, superimposing the frequency distributions for each of the five stages over one another reveals that a high concentration of organisational initiatives associated with the pre-adoption phases occurred between 2000 and 2006.
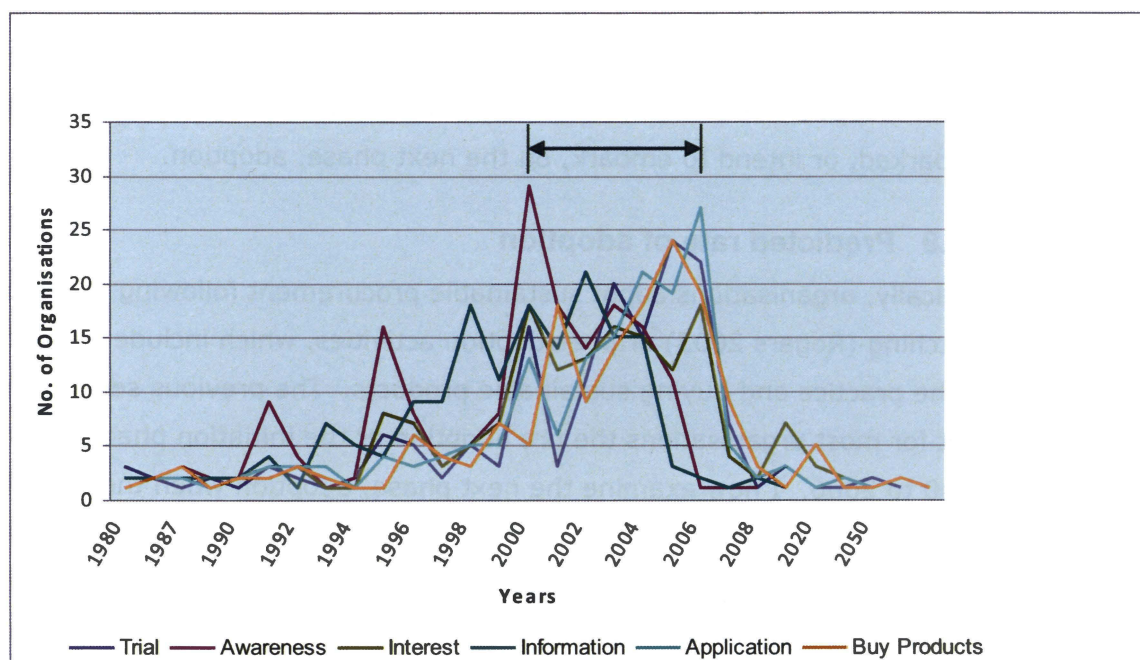
Figure 18 Stages of ESP implementation over time

Applying Rogers' (2003) phases of implementation, most organisations surveyed were undertaking actions in the initiation phase from 2000 to 2006 and in the matching phase from 2003 to 2006. During the initiation phase the majority of organisations (61%) became interested in sustainable procurement from 2000 to 2006 with peaks in 2000 and also in 2006, both with 18 organisations. Most organisations reported seeking information (48%) from 2000 to 2004, with a peak of 21 organisations in 2004.

Activities associated with the matching phase included applying ESP practices, buying sustainable products and trialling ESP. During this phase most organisations first bought sustainable products (36%) from 2003 to 2005, with a peak of 24 organisations in 2004, trialled ESP practices (49%) from 2003 to 2006 with a peak of 24 organisations in 2005 and most reported applying sustainable purchasing practices (39%) from 2004 to 2006 with a peak of 27 organisations in 2006.

Cumulative analysis of the high points when organisations become interested in ESP and subsequently adopted ESP reveals a four to five year delay before adoption (assuming these were the same organisations in the sample).

In conclusion, the majority of organisations surveyed undertook pre-adoption ESP activities from 2000 to 2006. These findings are based on initiatives in the lead-up to ESP adoption, and the next section examines when organisations have embarked, or intend to embark, on the next phase, adoption.

3.3.9 Predicted rate of adoption

Typically, organisations adopt sustainable procurement following a number of matching (Rogers 2003) or pre-adoption activities, which include conducting a trial of the practice and buying sustainable products. The previous section identified that for most organisations the pre adoption or the initiation phase occurred from 2000 to 2006. I now examine the next phase, adoption when the organisations started, or planned to introduce ESP as a retrospective and prospective activity respectively. By applying Rogers' tool as a prospective instrument to the findings it can accommodate organisations that plan to introduce sustainable procurement some time in the future. A way of exploring the future projections of ESP is through the lens of sustainable procurement as an organisational innovation. Again, I apply one of Rogers' (2003) frameworks to examine sustainable procurement adoption, which is discussed below.

This section examines the rate of adoption of ESP as a retrospective and prospective innovation. As part of the survey, respondents were asked to recall or predict what year their organisation adopted or planned to adopt sustainable purchasing as an organisation-wide practice. Table 26 illustrates the distribution of results for organisations adopting ESP, beginning with a few organisations in the 1980s, before rising to a peak in 2006, then followed by a sharp tapering-off in the number of adopting organisations after 2010. These timeframes support findings from the previous section that showed pre-adoption activities ceased in 2006.

Year	Frequency	Year	Frequency	Year	Frequency
1980	2	1998	5	2007	12
1985	2	1999	1	2008	8
1987	1	2000	9	2009	2
1989	1	2001	4	2010	17
1991	3	2002	6	2015	1
1992	1	2003	10	2020	3
1995	5	2004	14	2021	1
1996	3	2005	14	2050	3
1997	1	2006	32	3000	1

Table 26 Organisations adopting ESP over time

The distribution of organisations adopting ESP over time forms a bell curve, as displayed in Figure 19. Rogers (2003) stated that, when the number of individuals adopting a new idea is plotted on a cumulatively basis over time, the resulting distribution is an S shaped curve. Figure 20 displays the cumulative distribution of adoption scores for ESP for 160 organisations (of a potential 219 survey respondents) producing an S shaped curve, confirming that ESP is a successful innovation. While most innovations have an S shaped rate of adoption, there is variation in the slope from innovation to innovation, with steep curves exhibiting rapid diffusion and more gradual with a slope that is relatively lazy (Rogers 2003: 23).
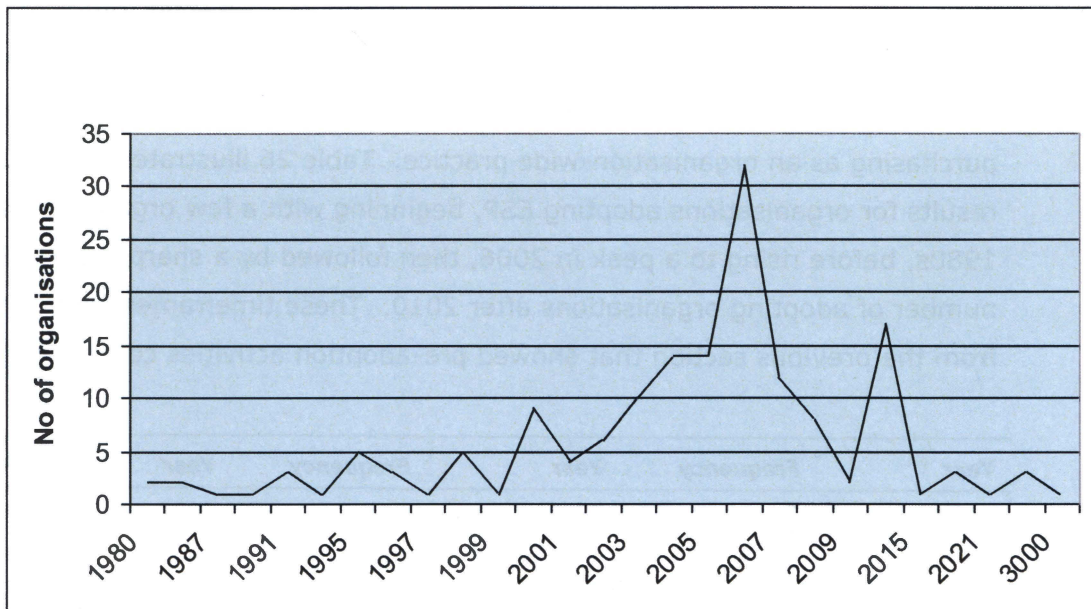
Figure 19 Adoption of ESP

Applying Rogers' (2003) principles to the survey responses helps to identify critical points in the adoption process. The survey responses range from a few organisations commencing in 1980, to a peak in 2006, before levelling off to rise sharply to another peak in 2010. From the period 1980 to 2005 a total of 68 organisations had adopted ESP and, by 2006, adoption then rose markedly to the 112, followed by a cumulative peak of 151 in 2010. Rogers suggests that when the S shaped curve reaches its asymptote the diffusion process is complete. Based on this premise, ESP will reach its saturation point in 2010, when the critical mass of adopters is reached. This implies that sustainable procurement will be successfully diffused as an organisational innovation by 2010 among the sample organisations. After this time there is a gradual levelling-off from 2015 onward as relatively few organisations in the sample adopt ESP. These findings are consistent with those in Section 3.3.8, which identified 2000 to 2006 as the initiation phase.

Having identified the timescale for the implementation of ESP which is predicted to peak in 2010 among sample organisations the next section examines the factors that influence adoption. Again, I apply one of Rogers' frameworks to test if the attributes he identified hold for sustainable procurement as an organisational innovation in Australian organisations.
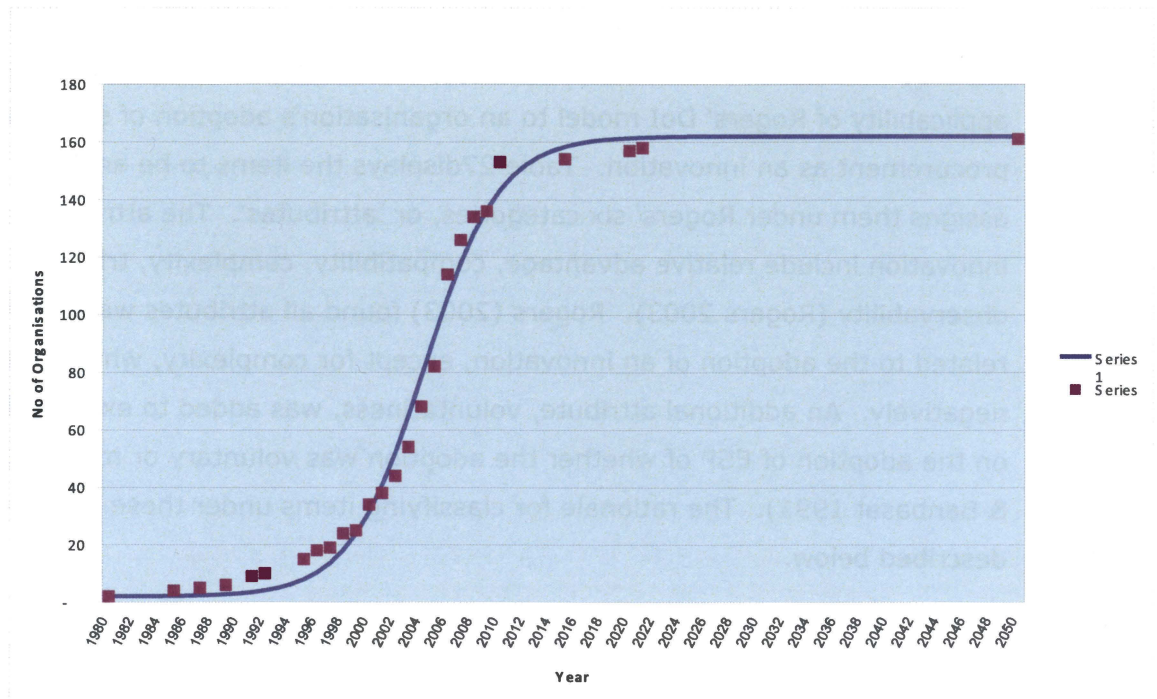
Figure 20 Cumulative adoption of ESP

3.3.10 Attributes influencing sustainable procurement adoption

The rate of adoption of an organisational innovation is influenced by a variety of factors that relate an organisation's setting and the individual features of the innovation. The previous section identified that ESP would be successfully diffused by 2010 and this section examines the attributes that will contribute towards this diffusion. Rogers (2003) proposed that the rate of adoption of an innovation is explained by five groups of variables. In applying Rogers' framework, I analyse what factors influence the adoption of ESP in Australian organisations, and which of these have the stronger influence. I also question if the influencing factors uncovered are consistent with those identified by Rogers (2003) in his DoI model. This section addresses the research questions listed below:

1. What factors influence the adoption of sustainable procurement as an innovation in Australian organisations, and which of these have the stronger influence?

2. Are these factors consistent with those 'attributes' contained in Rogers (2003) DoI model?

3. Are there particular attributes that are more relevant to an understanding of the adoption of innovations for sustainability that have not been emphasised in previous research on the adoption of innovations?

Rogers' classification system (previously described in the literature review, Section 2.5.5.4) was applied to items in the survey questionnaire to evaluate the applicability of Rogers' DoI model to an organisation's adoption of sustainable procurement as an innovation. Table 27displays the items to be analysed and assigns them under Rogers' six categories, or 'attributes'. The attributes of innovation include relative advantage, compatibility, complexity, trialability and observability (Rogers 2003). Rogers (2003) found all attributes were positively related to the adoption of an innovation, except for complexity, which was related negatively. An additional attribute, voluntariness, was added to explore the effect on the adoption of ESP of whether the adoption was voluntary or mandatory (Moore & Benbasat 1991). The rationale for classifying items under these headings is described below.

Six items (4-9, Table 27) were classified as reflecting the attribute of relative advantage. They examine economical profitability dimensions, including the cost of sustainable products, whether they were more expensive or delivered organisational savings and the expenditure associated with introducing ESP programs, prompting that these may be perceived as barriers to adoption. The relative advantage of adopting ESP as a competitive advantage and its potential to increase staff morale was also explored. The compatibility category contained ten items (10-19, Table 27) associated with the sociological beliefs and values of the organisation, including support from management, external support from clients and suppliers and congruence with existing organisational values and sustainability programs. It also included items relating to the lack of staff awareness and organisational knowledge as potential barriers to adoption.

Three items were classified as reflecting the attribute of complexity (items 20-22, Table 27), one examining the practice as being too complex, with the other two focusing on the quality and availability of products. Two items related to trialability, (items 23 and 24, Table 27) examine if organisations had piloted ESP and reviewed their programs over time, inferring that trials were ongoing to improve existing practices. Two items explored observability (items 25-26, Table 27), if sustainable products were visible in the organisation, and whether collaboration with organisations had assisted ESP. *Voluntariness* examined of the extent to which decisions associated with ESP were voluntary rather than mandated by management (items 27-29, Table 27).

	item	M	s.d.	Correlation with level of adoption
1.	Environmentally sustainable purchasing adoption	3.33	2.05	1.00
2.	Environmentally sustainable purchasing has been implemented across the entire organisation	3.28	2.13	.98**
3.	Environmentally sustainable purchasing is a routine practice in our organisation	3.38	2.06	.91**
	Relative advantage			
4.	The cost of environmentally sustainable products is a barrier to implementing sustainable purchasing programs and policies (rev)	4.06	1.84	.08
5.	The cost of introducing environmental sustainable purchasing programs is a barrier to introduction (rev)	4.48	1.77	.09
6.	Environmentally sustainable products cost more to buy (rev)	3.37	1.45	.04
7.	Buying environmental products delivers savings to my organisation	3.03	1.50	.25**
8.	Buying environmentally sustainable products is a means of differentiating our organisation against our competitors	4.13	1.92	.43**
9.	Adopting environmentally sustainable purchasing practices increases the morale of our employees	4.40	1.73	.51**
	Compatibility			
10.	Environmentally sustainable purchasing forms part of our sustainability program and policies	4.33	1.88	.70**
11.	Lack of staff awareness of environmentally sustainable products is a barrier to implementing sustainable purchasing (rev)	3.82	1.88	.31**
12.	Our organisation has identified a gap between its environmental policies and programs and its purchasing practices	3.71	1.98	.10
13.	Lack of organisational knowledge about environmentally sustainable purchasing practices is a barrier to implementing sustainable purchasing (rev)	3.94	1.92	.42**
14.	Our suppliers are encouraging our organisation to purchase environmentally sustainable products	2.89	1.60	.24**
15.	Our customers are encouraging our organisation to purchase environmentally sustainable products	3.59	1.87	.32**
16.	Our CEO is receptive to innovations to improve business performance	6.13	1.25	.15*
17.	Senior management supports sustainable purchasing practices	4.81	1.86	.64*
18.	Buying environmental products is compatible with our organisational values	5.41	1.58	.59**
19.	Environmentally sustainable purchasing practices reflect our organisation's desire to be innovative	4.42	1.91	.71**
	Complexity			
20.	The quality of environmentally sustainable products is a barrier to introducing sustainable purchasing programs and policies	3.09	1.55	.01

21.	The availability of environmentally sustainable products is a barrier to implementing sustainable purchasing programs and policies	3.94	1.77	.14*
22.	It is too complex to consider sustainability in purchasing decisions	3.09	1.66	-.24**
	Trialability			
23.	My organisation has piloted buying environmentally sustainable products	4.45	2.07	.49**
24.	Environmentally sustainable purchasing in the organisation has been reviewed and changed significantly over time	3.55	1.93	.72**
	Observability			
25.	Products that use less resources in their manufacture and use are visible in my organisation	3.90	1.90	.68**
26.	Collaboration with other organisations has assisted the organisation's progress in environmentally sustainable purchasing	3.95	1.97	.61**
	Voluntariness			
27.	Does senior management in your organisation mandate environmentally sustainable purchasing?	0.39	0.49	.65**
28.	Do business units have the freedom to undertake environmentally sustainable purchasing, as long as they meet targets and adhere to policies?	0.92	0.28	.14*
29.	Do staff have the option to purchase environmentally sustainable products?	0.85	0.36	.30**

Table 27 Descriptive statistics of items assigned to Rogers' attributes of innovation and correlations with level of adoption of ESP

*p<0.05; **p<0.01.

For all items, except numbers 27, 28 and 29, participants responded using a 7-point rating scale, ranging from 1 = 'not at all' to 7 = 'very much'. Items 27 to 29 were recoded to take into consideration 'yes' and 'no' responses

The two items measuring the breadth and depth of adoption of ESP (items 2 and 3 in Table 27) were highly correlated (r = 0.98), and inspection of the correlations of the two component items with the other variables in the study showed that they had almost identical relations with these other variables. This was confirmed using a Repeated Measures ANOVA analysis, with the two items being used to define the two levels of a within-subject factor. Only two of the 26 predictor variables had statistically significant, but weak, interactions with this factor. Therefore, these two items were combined to form a single adoption variable 'environmentally sustainable purchasing adoption' (item 1 in Table 27), which was treated as the dependent variable in the subsequent data analysis.

Table 27 shows the means and standard deviations of the main variables in the study. The level of environmentally sustainable purchasing adoption (item 1) can be seen to have a mean value below the scale mid-point value of 4 (mean = 3.33).

This indicates an overall low level of implementation of ESP in the sample. There was not strong agreement that the cost of products (item 4) nor the cost of introducing programs (item 5) were barriers to adoption, with mean scores just above the mid-point (means = 4.06 and 4.48 respectively). (These items were reverse coded). However, respondents did not agree that buying environmental products delivered organisational savings (mean = 3.03). The mean ratings revealed moderate receptiveness by respondents to adopting sustaining purchasing practices including support from senior management (item 17), piloting ESP (item 23) and a desire to be innovative (item 19), with mean scores just above the mid-point (means = 4.81, 4.45 and 4.42 respectively). CEO receptiveness to innovations to improve performance (item 16) was very strong (mean = 6.13).

The relationships between the dependent variable, environmentally sustainable purchasing adoption (item 1 in Table 27), and 26 independent variables (items 4 to 29, Table 27) were first examined using bivariate correlations and these are also shown in Table 11. Several items (numbers 4, 5, 6, 11 and 13 in Table 27) that examined potential barriers to ESP were reverse coded so that, for all predictor items, higher scores would be expected to be associated with higher levels of adoption.

Positive and statistically significant correlations can be seen in Table 27 between the level of adoption of ESP and many of the other variables. The highest corrections, all above 0.7, were with the review of ESP (item 24), forming part of sustainability programs (item 10) and the organisation's desire to be innovative (item 19) (r's = 0.72, .70 and 0.71, respectively; p's < 0.01).

To further investigate the prediction of the level of adoption of ESP, hierarchical regression was carried out. Due to the large number of predictor variables, the backwards elimination procedure was used to reduce the number of items in the regression model. A reduction in the number of predictor variables for the regression analyses was also achieved though factor analysis of the responses to the 26 independent variables, with the factor scores also being used as independent variables in regression analyses for the prediction of the level of adoption of ESP. The Principal-Component method of extraction was used, and the solution rotated to simple structure using the Varimax procedure as implemented in the SPSS (Version 14) statistical package. Root-one criterion suggested that seven factors could be extracted, and this solution is shown in Table 28.

The first factor is most strongly defined by items reflecting the relationship between ESP and the organisation's attitudes, values and other practices (items 1-12 inclusive). Therefore, this factor has been labelled 'values'. The second factor reflects barriers to ESP relating to the cost of the products (items 13 and 14) and of an ESP program in general (item 15) and has been labelled 'cost'. The third factor is defined by the relationship between ESP and staff awareness (item 16), organisational knowledge (item 17) and (negatively) with a lack of congruence with organisational programs (item 18). This factor has been labelled 'knowledge'.

Items associated with the perceptions of products define the fourth factor: quality (item 19), availability (item 20) and the complexity associated with incorporating sustainability into purchasing decisions (item 21), and this factor has been labelled 'products'. The fifth factor is defined by support for ESP by suppliers (item 22) and customers (item 23) and has been labelled 'external support'. The sixth factor is defined primarily by just one item, measuring perceptions of the chief executive officer's (CEO's) receptiveness to innovation for business improvement (item 24). It also had a minor loading of 0.43 from item 11 (whose major loading of 0.60 is on the first factor), which measures opinions of whether ESP is a means of differentiating the organisation from competitors. It has therefore been labelled 'CEO innovation'. The seventh factor is most strongly defined by items reflecting the extent to which business units (item 25) and staff have the option of sustainable purchasing (item 26), and has been labelled 'purchasing options'.

The results of hierarchical regression analyses to investigate the relationship between the level of ESP adoption and the other variables measured in the study are shown in Table 29. Models 1 and 2 represent hierarchical regression of the level of adoption on individual items. In the first step, the control variables were entered into the equation. These control variables comprised the industry sector (represented by dummy variables 1 to 3), the number of employees in the company (item 4), the annual spending on purchasing goods and services (item 5) and the country of ownership (represented by dummy variables 6 and 7).

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	h2
1. Desire to be innovative (19)	.81	-.01	.09	-.03	.20	.24	.05	.761
2. Compatible with org values (18)	.79	-.04	-.05	.09	-.04	.18	.12	.687
3.ESP reviewed over time (24)	.78	-.07	.12	.06	.08	-.08	.11	.689
4. Part of policies and programs (10)	.77	-.04	.17	-.04	.23	.06	.02	.468
5. Piloted products (23)	.76	-.13	-.06	-.03	-.04	-.07	.14	.631
6. Products with less resources (25)	.75	.14	.09	-.03	.16	.00	.07	.499
7. Senior management support (17)	.73	.02	.18	.09	.12	.24	.13	.686
8. Collaboration (26)	.70	-.06	.09	.11	.27	-.17	.14	.831
9. Increases morale (9)	.69	.09	-.04	-.04	-.03	-.04	.12	.500
10. Mandated by senior management (27)	.60	.16	.09	.05	.25	.22	-.03	.851
11. Competitive advantage (8)	.60	-.10	-.06	-.11	.14	.43	-.21	.764
12. Delivers organisational savings (7)	.41	.29	-.29	.23	.20	.16	-.12	.666
13. Products cost more (6) (rev)	.00	.82	-.08	.00	.02	-.06	.02	.779
14. Cost of products is a barrier (4) (rev)	-.05	.81	.21	-.23	-.04	.06	-.01	.665
15. Cost of programs is a barrier (5) (rev),	.02	.74	.22	-.25	-.10	.12	-.04	.689
16 Staff awareness (11) (rev)	.20	.08	.88	-.10	-.06	.00	-.07	.766
17 Lack of org. knowledge (13) (rev)	.31	.14	.85	-.01	.04	.05	.02	.785
18. Gap between programs & ESP (12)	.38	-.13	-.49	.21	.17	-.16	.07	.670
19. Quality of Products (20)	-.04	-.20	.01	.84	.17	.11	.06	.541
20. Availability of products (21)	.23	-.22	-.17	.71	-.17	.00	.07	.621
21. Complex to consider ESP (22)	-.23	-.03	-.18	.48	.06	-.31	-.35	.661
22. Encouragement from suppliers (14)	.18	-.10	-.06	.06	.84	-.05	.01	.625
23. Encouragement from customers (15)	.30	.02	-.05	-.01	.74	.13	.07	.637
24. CEO is receptive to innovations (16)	.10	.09	.08	.05	.04	.86	.07	.507

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	h2
25. Optional for business units (28)	.09	-.06	-.15	.12	.00	-.02	**.77**	.644
26. Optional for staff (29)	.23	.03	.06	-.08	.08	.06	**.64**	.481

Table 28 Principal component analysis: rotated component matrix

Factor 1: Values; Factor 2: Cost; Factor 3: Knowledge; Factor 4: Products; Factor 5: External Support; Factor 6: CEO Innovation; Factor 7: Purchasing Options.

h2 =communalities; factor loadings greater than 0.40 are shown in bold type.

Figures in brackets refer to the item numbers in Table 27

Rev indicates items that have been reverse coded

	Model 1	Model 2	Model 3
Control variables [b]			
1. Dum_industry_government	.09	.04	.02
2. Dum_industry_ not-for-profit	.12	.02	-.02
3. Dum_Industry_ manufacturing	-.07	.00	.03
4. Number of employees	-.27*	.02	.01
5. Spending	-.01	-.02	-.09
6. Dum_Country_Australia	-.03	.00	-.03
7. Dum_Country_United States of America	.11	-.01	.02
Predictor variables			
8. Part of policies and programs (10)		.27**	
9. Staff awareness (11) rev		.10**	
10. Gap between programs and ESP (12)		-.09*	
11. Desire to be innovative (19)		.17**	
12. Products with less resources (25)		.14**	
13. Collaboration (26)		.16**	
14. Mandated by senior management (27) recode		.27**	
15.Optional for staff (29) recode		.10**	
Predictor factor scores			
16. Factor 1 (values)			.77**
17. Factor 2 (cost)			.05
18. Factor 3 (knowledge)			.24**
19. Factor 4 (products)			.05
20. Factor 5 (external support)			.17**
21. Factor 6 (CEO Innovation)			.04
22. Factor 7 (purchasing options)			.14**
R-square	.105**	.738**	.710**
R-square Change [a]		.633**	.605**

Table 29 Hierarchical regression analyses for the prediction of the level of adoption of sustainable purchasing practices

*$p<0.05$; **$p<0.01$.

a R-Square Change for both Models 2 and 3 are relative to the R square for Model 1.

Numbers in table are standardised regression coefficients

b The reference category for the industry dummy variables is 'other', and that for the country of ownership dummy variables is 'other'

Figures in brackets refer to the item numbers in Table 2

In the second step (Model 2) individual items were entered into the equation. Rather than enter all 26 predictor variables, a more parsimonious model was obtained using the backward procedure, as implemented in the SPSS statistical package. This resulted in a reduction of the number of variables to those (variables 8 to 15) displayed in Table 29. The individual items with the strongest independent relationship with the level of adoption were numbers 8 and 14 (betas = 0.27; $p<0.01$), representing the extent to which ESP forms a part of the organisation's sustainability program and practices, and the extent to which senior management mandates sustainable purchasing. Smaller, though statistically significant, betas were also found for variables 9, 11, 12, 13 and 15 (betas = 0.10, 0.17, 0.14, 0.16 and 0.10, respectively; p's <0.01) and for variable 10 (beta = -0.09, $p < 0.05$). There was a moderate independent relationship with the level of adoption and an organisation's desire to be innovative (variable 11) and collaboration with other organisations (variable 13) (betas = 0.17 and 0.16 respectively). Also, there was a significant but smaller independent relationship with the level of adoption for staff having the option to purchase sustainable products (variable 15) and staff awareness influencing ESP, (variable 9) (betas both = 0.10).

Hierarchical regression analysis was also performed using factor scores derived from the analysis shown in Table 29. Four of the seven factors (1, 3, 5 and 7) were found to have statistically significant betas (all p's < 0.01). The factor with the strongest effect on the level of adoption was Factor 1, representing values (beta = 0.77; $p < 0.01$). Factor 3, representing knowledge had a lesser effect on adoption (beta = 0.24; $p < 0.01$) as did external support (beta = 0.17; $p < 0.01$) and purchasing options (beta = 0.14; $p < 0.01$).

It is interesting to note that in Model 1 the size of the organisation (variable 4) is observed to have a small but statistically significant negative effect on the level of adoption (beta = -0.27, $p<0.05$), but this disappears when the other variables are entered into the equation, in both models 2 and 3. Examination of the organisational size with the other variables in the equations shows negative correlations with items 8, 10, 11, 12 and 13, which vary between 0.20 and 0.31 (p's <0.01), and with factors 1 and 3 (r's = -0.20 and -0.23, respectively; $p <0.01$). Thus, it appears that the negative effect of size on the level of adoption displayed in the results of Model 1 can be interpreted as being due to these negative relationships between size and the other variables in the equations of Model 2.

Attributes	Factor 1 Values	Factor 2 Cost	Factor 3 Knowledge	Factor 4 Products	Factor 5 External support	Factor 6 CEO innovation	Factor 7 Purchasing options
Relative advantage	7,8,9	4,5,6					
Compatibility	10, 17, 18, 19		11,12,13		14,15	16	
Complexity				20, 21,22			
Trialability	23,24						
Observability	25,26						
Voluntariness	27						28,29

Table 30 Rogers' attributes of innovation and factors influencing sustainable procurement adoption

Figures refer to the item numbers in Table 27

Table 30 displays the relationships between the results of factor analysis and Rogers' attributes of innovation. The regression model for the prediction of ESP, with the seven factors as independent variables, suggests that certain attributes in Rogers' framework may be more influential in ESP adoption. While relative advantage did not emerge as a separate factor, items pertaining to organisational values were strongly predictive of adoption. Other items formed a separate factor, cost, although it was not a statistically significant independent predictor of adoption of ESP. Items pertaining to the compatibility attribute were spread over three factors that were statistically significant predictors of adoption. Items centred on staff learning and knowledge formed one factor, knowledge and items related to stakeholder encouragement formed external support while items describing organisational fit aligned with values. Complexity was the only factor that aligned with the factor products, although this factor was not a significant predictor. Items related to trialability and observability aligned with values. Items related to voluntariness were spread over the factors values and purchasing options.

3.3.11 Summary

The survey results show a low level of ESP adoption in organisations in the sample. ESP was not found to be implemented across the breadth of the organisation or as a routine practice. This may infer that ESP is practised in single business units or pockets of organisations, but it is not a standard organisation-wide business practice.

Whilst results show a relatively low level of adoption of sustainable procurement in Australian organisations it was most pronounced in micro organisations with fewer than four employees and in NFP organisations and lowest in manufacturing organisations. Compared with organisations with head offices in Australia and other countries, US-based organisations recorded the lowest rates of adoption.

Common barriers including cost and awareness identified by previous studies were not identified as distinct impediments to adoption in this study. Neither the high cost of environmentally preferable products nor the costs associated with introductory programs were identified as barriers to implementation. In the opinion of those surveyed a lack of staff awareness about environmentally sustainable products and a lack of organisational knowledge concerning sustainable purchasing practices were not perceived as strong barriers to implementation.

Collaboration and leadership support were influencing factors in the adoption of ESP. Support from senior management was an influencing factor in implementing ESP. In organisations where there was leadership commitment for sustainability there was a corresponding increase in ESP. Not surprisingly, the incidence of ESP increased where there was senior management support for sustainable purchasing practices. Partnering with other organisations to progress sustainable procurement was strongly associated with implementation.

Survey respondents identified eighty different collaborator organisations. As a single partner a green purchasing program was the most frequent collaborating organisation. Government organisations at federal, state and local level were the most frequent partners, followed by environment purchasing programs, private companies, alliances, programs and associations, and environmental NGOs.

Organisational size was an influencing factor in the implementation of environmentally sustainable purchasing. Smaller organisations with fewer employees and spending less on goods and services had a higher level of adoption of ESP. Similarly, smaller organisations were more likely to give greater consideration to environmental sustainability when selecting suppliers.

Organisational size was shown to influence organisational purchasing arrangements. These findings suggest that most organisations have documented procedures, contracts and strategic partnerships influencing purchasing and this was most prominent in larger organisations, which were also found to exhibit a greater degree of business unit autonomy compared with smaller organisations, where purchasing was influenced by employee-driven initiatives. The results reveal also that documented processes such as policies and programs and supplier relationships including contracts and strategic partnerships with suppliers are dominant in most organisations, particularly larger firms.

Using the survey findings to examine environmentally sustainable purchasing as an organisational innovation showed that ESP was predominantly an optional decision in business units in large organisations and by employees in smaller organisations. Most organisations were in the initiation stage of implementation. Results also show that most organisations indicated an initial interest in the practice between 2000 and 2006, followed by pre-adoption activities between 2003 and 2006. Findings show that the critical mass of survey respondents will adopt ESP by 2010. This adoption timeframe suggests that at the time the research was conducted organisations were assessing the organisational fit of sustainable procurement as a future initiative. Applying Rogers' attributes of innovation to test ESP as an innovation resulted only in a partial alignment, with complexity the only attribute to align with the factor of products. This suggests that sustainable procurement is a unique type of innovation more dependent on internal organisational factors, including supportive management and knowledgeable staff.

The next chapter outlines the qualitative research component its aims and methods and reports on the results of seventeen semi-structured interviews that supplement the findings of the survey.

'...the cost benefits and environmental benefits from green procurement are very obvious, but increasingly we're looking at other effects around protecting your reputation'. (Interview participant).

Chapter 4.   Qualitative Study

The previous chapter examined environmentally sustainable purchasing (ESP) adoption across a broad range of organisations. By investigating ESP as an organisational innovation, the survey results predicate that the practice will be diffused across the critical mass of adopters in the quantitative cohort by 2010 and show that creating an organisational culture will encourage adoption. Based on these findings this chapter investigates in greater detail sustainable procurement and the drivers to embed sustainable procurement, based on experiences of practitioners implementing sustainable procurement. This was summarised by one participant commenting on its progress 'it's quite and eye opener as to what hasn't been happening and in the space'.

4.1 Aims

To accompany the survey questionnaire in the quantitative research component, I selected semi-structured interviews as my preferred qualitative tool in order to gain a detailed perspective of the motivations and approaches through the experience of sustainable procurement 'practitioners' in organisations. I adopted a multiple case study approach (Eisenhardt 1989; Yin 2003), based on purposeful sampling to examine the practices of lead users of sustainable procurement in Australia. Von Hippel (1986: 796) suggests lead users 'have real life experience with novel products and are in a position to provide accurate data on needs related to future conditions'. Unlike the survey respondents, all interview participants were selected because they had already implemented corporate sustainability programs and most organisations had introduced green or sustainable procurement programs at varying levels of maturity. The semi-structured interviews were intended to explore the range of barriers and opportunities and organisational approaches and priorities to sustainable procurement adoption. Additional objectives of this component included investigating the relationships between corporate sustainability programs and sustainable procurement and examining the role of collaboration with other organisations in encouraging adoption.

The qualitative research component addresses the following research questions.

1. How is sustainable procurement conceptualised by Australian organisations?

2. What is the current level of adoption of sustainable procurement?

3. What are the key drivers for adoption?

4. Why are organisations motivated to adopt sustainable procurement?

5. Do the drivers and barriers to sustainable procurement adoption raised in the green procurement literature hold for Australian organisations?

6. What types of collaborative relationships exist between procuring organisations and their stakeholders?

7. How do these collaborative arrangements influence the adoption of sustainable procurement?

4.2 Method

4.2.1 Sample and data collection

A total of twenty-one interviews were conducted from December 2005 to August 2006; of these seventeen were retained for data analysis and contributed towards the research findings. Three of the initial interviews were discarded as they were inaudible and proved difficult to transcribe, while the remaining interview raised very few new insights and in light of the time constraints of transcribing and analysis I decided not to include these four in the final sample for detailed analysis. Initially, I piloted my interview process by selecting participant organisations based on their relationship to the procuring organisation (as a supplier, an advocate, a regulator), which was drawn from my conceptual framework set out in Section 2.8.2. For the trial, I approached three organisations that corresponded with these roles and interviewed representatives in Melbourne. Listening to the tapes, reading over my interview notes and revisiting my research aims, I decided this selection process was limited and detracted from the core phenomenon under investigation. While other organisational actors influenced sustainable procurement, my research was primarily centred on the experience of the procuring organisation in adopting sustainable procurement. These first cases were retained for analysis and form part of the current sample and the new approach I took is described below.

The survey questionnaire results also influenced the sample selection process. The findings indicated a strong tendency for organisations implementing corporate sustainability to also pursue sustainable procurement. Subsequently, I established a list of participant organisations that were implementing sustainable procurement and those with externally verified CSR programs. Following this, I undertook a desktop analysis of each organisation based on publicly available documents. While I was familiar with the progress of most of my peer organisations, I applied this process because it ensured consistent treatment of all participants and provided me with the current organisational context, projects and priorities. I did not collect the detailed categorical information of size and spending requested in the survey, as the main purpose of this method was to understand the process of introduction of sustainable procurement.

After finalising the initial selection of cases, I then embarked on the interviewee screening process. I spoke with each organisational representative, explaining my research and the interview process, both as a courtesy and also to confirm their appropriateness as a spokesperson for the organisation and the maturity of their sustainable procurement programs. Through my own networks, I knew most of the interviewees, and those I did not know were recommended by peers as a form of snowballing. I took particular care to arrange interviews with the person primarily responsible for implementing organisational programs. Following this preliminary screening phase, all interviewees were forwarded a letter by email confirming the appointment. This letter outlined my research, the broad topic areas I would cover in the interview and my ethical responsibilities as the researcher. A copy of this attachment can be found in Appendix A. Before to each interview, I reviewed the company data and customised the questions with organisational examples.

Each interview process followed the sequence of tasks outlined below. A few days before to each interview I emailed participants to confirm the appointment details. At this time, several interviewees requested a detailed list of questions, which I furnished. I took time at the beginning of each interview to reinforce my responsibilities as a researcher, with supporting documentation including the ethics form and explaining to participants that they were at liberty to cease the interview at any time or stop the voice recorder, which I demonstrated. I also introduced an interview guide, a laminated A4 sheet listing the topics to be covered in the interview and left it on the table during the course of the interview as a discrete prompt. I then explained to each interviewee that the sequence of topics was not

of paramount importance, to encourage them to feel more relaxed. These topic areas guided questioning in the semi-structured interviews.

Aside from one phone interview with a US-based organisation that was subsequently not retained, I conducted all the interviews face to face at the interviewees' work place, usually a small private meeting room that I had suggested in my correspondence. With the exception of two interviews, the rest were completed within an hour, which proved to be satisfactory time for participant responses. The entire interview was audiotaped and supplemented with my own hand-written notes. At the conclusion of the interview I routinely went to a quiet location, a café or public space, to capture my own 'first impressions' and interpretations of each interview to use along side my interview notes.

I transcribed all material myself, with the exception of two cases, which were contracted to an external company. While this process was extremely time consuming, it gave me the added assurance of accuracy and time for preliminary assessment and analysis while transcribing, which I recorded in my analysis diary. I started with twenty-one cases and due to the poor quality of some transcripts, retained seventeen for detailed analysis. For two interviews two people attended the interview. Also I interviewed two staff members separately from the one organisation to gain a wider perspective on their programs. The next section describes the interview protocol in detail.

4.2.2 Interview protocol design

The interview protocol was designed to cover the a priori topics I had identified within a one hour duration, which was a critical consideration when interviewing executive personnel. In many cases, the focus of interview moved around these themes, depending on issues that arose, yet it delivered a sufficiently fluid structure to deal with a priori themes and customisation.

At the time of designing the instrument, there were relatively few qualitative studies that examined all elements of sustainable procurement, and the literature was dominated by quantitative environmental studies. As the interviews examined the broader domain of sustainable procurement incorporating environmental, economic and social criteria, I appraised Drumwright's (1994) interview protocol for application and adopted some of her questions in combination with supplementing the hypotheses examined in the survey questionnaire (see Section 3.1.1). Table 31 lists the six questions that cover topic areas, including background, organisational

approaches, sustainable products, barriers and opportunities, collaboration with other organisations and personal changes.

The first question centred on 'background' was an ice breaker type of question, designed to build initial rapport with the interviewee. It was relatively easy for the respondent to answer, with facts and a series of chronological activities. It replicates the first question in Drumright's (1994: 17) interview protocol: 'Tell me why and how the buying process (for the socially responsible product/service) got started. How was the problem/opportunity recognized? By when? By whom?'

Topic areas	Interview questions
1. Background	How did sustainable purchasing start in the organisation?
2. Approaches	What are the approaches employed by your organisation?
3. Products	How do you classify or describe sustainable products? What approaches to do apply to products?
4. Barriers and opportunities	What do you perceive as the barriers and opportunities to wider promulgation of sustainable procurement?
5. Collaboration	Have partnerships with other organisations assisted in the progress of sustainable procurement?
6. Personal changes	How has your (interviewee's) involvement in sustainable procurement changed your personal habits?

Table 31 Interview Questions

This question frequently led respondents to describing a timeframe and when they became involved in the program or process. I was interested in uncovering the building blocks of the program and whether sustainable procurement formed part of a corporate sustainability, arose from a quasi-regulatory regime (like participating in the national packaging covenant), a supplier requirement or was instigated by senior management sponsorship.

This next question, 'approaches', explored the ways individual organisations are approaching sustainable procurement. Compared to the green procurement literature detailing tools and priorities there were relatively few studies with questions for sustainable procurement. I was aware that some organisations particularly those with international supply chains, were pursuing labour issues more vigorously, while generally Australian companies were starting on green procurement. This also related to the organisational purchasing section of the survey, which examined organisational reporting and systems.

The 'product' questions were designed to uncover details about an organisation's approach to product selection and criteria considered in product decision making. The green procurement movement had put significant credence in recycled and remade products as part of contributing to waste reduction, and, at the time, energy and water efficient products were promoted in the media, compared with FairTrade labelled products purchased by overseas companies.

The fourth question, 'barriers and opportunities', was directed at supplementing the hypothesis testing in the survey and gauging the success of individual programs and approaches and their evaluation. These questions had a dual context, equally based on the experience within their organisation and more broadly by their observations of sustainable procurement nationally and globally, as an organisational practice moving forward, both based on their personal opinion.

'Collaboration' with other organisations to pursue sustainable procurement figured strongly in the literature; therefore, I was interested to hear experiences of Australian companies and the range of partners they collaborated with. Most raised suppliers as key collaborators in the adoption. This complements data collected in the survey identifying partner organisations.

In the closing question of the interview, I was interested to hear of interviewees' 'personal change' related to their role in sustainable procurement. This question was directly drawn from Drumwright's protocol and, like her, I agreed it would be an ideal close to the interview, when participants are relaxed, giving them an opportunity to speak about themselves and potential overlaps in their work and life experiences: 'Did being involved in the buying process influence you or change you in any way? Have you made any changes in your professional practices? In your personal practices?' (Drumwright 1994: 17).

While Drumwright asked an additional closing question examining if interviewees were personally concerned about the environment, I felt this was a leading question and therefore did not include it. Without this prompt many of the respondents still relayed stories of their early interest in environmental concerns. I decided not to include results and analysis from this question in my thesis as it now peripheral to the current research aims, but this will be the focus of a future journal article.

4.2.3 Data analysis

The main qualitative data analysis stage spanned from October 2007 to May 2008. I started using NVivo version 2 developed by Qualitative Solutions and Research Pty Ltd before upgrading to NVivo 7. The software presented a convenient method of coding and data retrieval, analogous to a 'chest of drawers' with many compartments and, more importantly, the potential to save considerable time. Based on the classification system of three categories, government, corporate and Reputex, I analysed each case in their groupings in sequential order. When all the transcriptions were completed, I loaded them as a group into NVivo 7 and started my data analysis routine.

As previously set out above I trialled NVivo 2 in November 2006 by coding four cases and subsequently coded the same cases using NVivo 7 a year later to test my own coding reliability. A comparison of both sets of cases revealed minimal change in the coded material in the intervening year. To test for cross coder reliability my supervisor independently scored several cases and the results revealed a strong agreement with my application of codes.

I employed a data analysis process of theory building, similar to Eisenhardt (1989) and building on grounded theory techniques (Charmaz 2006; Glaser & Strauss 1967) to analyse my multiple case studies (Eisenhardt 1989). The data were coded and analysed using thematic analysis, looking for emergent themes (Eisenhardt 1989; Miles & Huberman 1994; Yin 2003). I applied the same process to every interview, including the three trailed using an earlier software version. I commenced by listening to the audio tape of each case several times over, while making hand-written notes on key emergent themes, which quickly gave me a sense of the whole case. Another unintended advantage of this process was to check the transcription's accuracy, given the elapsed time between transcription and analysis. Following this I worked through each interview paragraph by paragraph on screen, coding free nodes and annotations as a preliminary process. I also reanalysed the three cases from the trial during this phase and surprisingly arrived at almost identical analysis conclusions. As I progressed beyond the government group of five cases I transferred to taking electronic notes for each interview.

Each analysed case had a number of associated documents. Simultaneously while coding, I wrote memos on each interview within NVivo, which included quotes and most frequently my thoughts, reflections and emerging commonalities with other

cases. As a habit, I would complete coding an entire case, then prepare the case memo, followed by a one-page dot-point synopsis, and then collages representing the dominant themes, which are presented later in Chapter 5.

While NVivo served as a convenient repository for recording themes and relationships in textual form, I felt constrained by this medium and that 'words were not enough'. I had exhausted written forms, using memos and other summary and analytic notes as a means of cataloguing my interpretation of the data. Harnessing my conceptual abilities and model-making skills as an architect, combined with comfortably using a selection of media and tools, other than paper, keyboards and screens, I started to build conceptual constructions or the key themes of each case using images and objects as metaphors as presented in Chapter 5.

At the same time I was applying this routine to each case I was also compiling and contributing to a number of collective documents that looked across the case studies. I recorded convergent and divergent issues raised in the data in my analysis diary. In hindsight, my analysis diary was an integral vehicle to detail and reflect on the journey and process of research in its entirety, this being my first experience at analysis on this scale. I also established a summary document based on the top five codes and, over the course of the analysis, I added material and refined this document.

4.2.3.1 Validity

Validity for quantitative findings rests in statistical significance and is frequently related to the type of test undertaken, whereas assessing validity for the 'naturalistic' or qualitative inquirer is in the mode of the constructivist, open to multiple realities. To demonstrate the validity of my qualitative data, I apply Lincoln and Guba's (1985) framework, because they are the seminal authors in this field. They stress that, for authentic findings, 'the researcher must show that he or she has represented those multiple constructions adequately, that is, that the reconstructions that have been arrived at via the inquiry, are credible to the constructors of the original multiple realities' (Lincoln & Guba 1985: 296).

They suggest trustworthiness depends on the conditions of 'credibility, transferability, dependability and confirmability which are the qualitative equivalents of the conventional terms internal validity, external validity, reliability and objectivity' (Lincoln & Guba 1985: 300). A discussion of each of these elements applied to my research follows.

To build valid arguments in qualitative research the first characteristic to address is credibility. Lincoln and Guba's (1985) suggest this comes from a prolonged engagement with the research subject. I brought over seven years of experience and knowledge of public sustainable procurement to this study. I was not 'a stranger in a strange land', but, I was part of the introduction of sustainable procurement in government (Lincoln & Guba 1985: 301). Like most of my organisational peers, who were also many of my research participants, I was implementing sustainable procurement programs. While my employment was in the public sphere, my research sample extended more broadly to include a large proportion of corporate organisations and prevented me from 'going native' (Lincoln & Guba 1985).

By adhering to a consistent process explained in the interview process section I ensured equal treatment of all interview participants. I explained to those participants I knew previously that they should assume I had no prior knowledge of their organisation, so that they could give a fulsome account for my research. Also I refrained from asking leading questions. Analysis debriefing as a tool was used to cast a fresh set of eyes over my open coding of cases at the beginning of the data analysis process, which expanded the range of codes initially and was also useful in analytic coding towards the close of the process.

Negative case analysis as a trustworthiness tool was also employed as a means of highlighting paradox and confluence to uncover meaning to ascribe to this emerging area of research. Lincoln and Guba (1985), suggest this technique is analogous to test for quantitative methods negative case analysis and can be regarded as a 'process of revising hypotheses with hindsight. The objective is to continuously refine a hypothesis until it accounts for all known cases without exception' (Lincoln & Guba 1985: 309). This rigour and discipline was particularly useful for testing relationships between themes in the qualitative analysis component.

The main negative case related to the influence of potential loss of reputation on organisations detailed in Section 4.3.5.1. In contrast to the general consensus amongst most participants, one organisation was not motivated by the perceived potential reputational gains from introducing sustainable procurement: '...our reputation is so high, you know, the motivation to go out there and go the next step is not there...'

For qualitative analysis, thick description is the equivalent of external validity and it is the researcher's responsibility to provide data that make transferability across cases possible. Lincoln and Guba (1985: 316) claim that 'one can provide only the thick description necessary to enable someone interested in making a transfer, to reach a conclusion about whether transfer can be contemplated as a possibility'. To address transferability of cases, I voice recorded all interviews and transcribed them verbatim and was selective in my inclusion of quotes.

Lincoln and Guba (1985: 319-320) suggest that for dependability and confirmability research should document audit trails detailing processes and procedures should contribute towards trustworthiness. From the outset of this research project I have been diligent in carrying out the project with attention to detail and record keeping. I have developed processes that captured, collected, analysed and interpreted the data that were meticulously recorded and documented in reflective memos, personal notes, a handbook of hand-drawn images and diagrams, and working three-dimensional models detailing the evolution of the analysis process to substantiate and qualify my research decisions.

4.3 Results

4.3.1 Sample characteristics

As previously mentioned, participant organisations were selected based on their involvement in sustainable procurement and CSR. To narrow the field of CSR exemplar organisations, I used ratings assigned by the independent rating company Reputex[4] (an Australian rating system) to select organisations and refined the criteria to those organisations in the superlative categories receiving an AAA or AA rating for CSR in 2005.

The industry sectors represented in the sample are set out in Table 32 and discussed below. Consistent with the survey, organisations participating in this method were also categorised based on ANZSIC codes. Organisations representing the finance and insurance sector were the dominant cohort (25%), followed by retail trade, communication services, state government and education and wholesale(13.3%), property and business services and government administration and defence with equal representation (6.2%). Within the finance and insurance group two representatives from the same organisation were interviewed which accounts for the discrepancy between organisations as participants (16) and number of interviewees (17).

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4 See www.reputex.com.au/consulting.html

I made a conscious decision not to collect the detailed categorical data on individual organisations, as there were relatively few Australian organisations adopting this practice and this comprehensive information may have identified individual organisations. In addition, my research design was not based on triangulation of data sets or validation, but to extend and contrast findings. While I did not record the size of organisations based on the number of employees and annual spending on procurement as part of the interview process, aside from one small to medium-sized organisation, most were large organisations with more than 1000 staff.

Industry sector	N	%	Industry sector	N	%
1. Wholesale	2	13.3	5. Property and Business Services	1	6.2
2. Retail trade	2	13.3	6 Government Administration and Defence	1	6.2
3. Communication Services	2	13.3	7. State Government	2	13.3
4. Finance & Insurance	4	25	8. Education	2	13.3
N = 16*					

Table 32 Industry sector of organisation in the sample

*Note this is number of organisations. Two representatives were interviewed from one organisation.

The sample included organisations from Australia and three from the United Kingdom. I selected these participants because Australian organisations, particularly governments, regularly look to Britain for best practice procurement examples to emulate. For convenience and to reduce travelling and contain costs, the remaining interviews were conducted in Sydney and Melbourne. Aside from two interviews with two organisational representatives, all were with one individual, as displayed in Table 33.

	Type of organisation	Country of ownership	Position of interviewee	Industry sector
G1	Government department	Australia	Program manager	State government
G2	Government program	Australia	Program manager	State government
G3	Government department	United Kingdom	Project manager sustainable procurement	Federal department
G4	University	United Kingdom	Academic	Education
G5	University	Australia	Academic	Education

	Type of organisation	Country of ownership	Position of interviewee	Industry sector
C6	Government Trading Enterprise	Australia	Procurement manager	Communications services
C7	Corporate organisation	UK-based Australian headquarters	Procurement manager	Retail
C8	Corporate organisation	Australia	Procurement manager Sustainability manager	Wholesale
C9	Private organisation	Australia	Owner	Wholesale
C10	Public company	United Kingdom	Head of sustainability	Retail
R11	Corporate organisation	Australian	Head of sustainable procurement	Finance and insurance
R12	Corporate organisation	Australia	Head of sustainability	Finance and insurance
R13	Government Trading Enterprise	Australia	Head of sustainability Head of procurement	Communications Services
R14	Corporate organisation	Australia	Head of sustainability	Finance and insurance
R15	Corporate organisation	Australia	Supply chain manager	Finance and insurance
R16	Corporate organisation	Australia	Head of sustainability	Finance and insurance
R17	Private company	Australian	Head of sustainability	Property and business services

Table 33 Characteristics of organisations and interviewees

I aimed to gain a representation from public and for-profit organisations in my qualitative sample, consequently three distinct groups emerged. The first group 'government', included government agencies and academic institutions, the second 'corporate', included public companies that were not participants in Reputex reporting and the remaining group comprised organisations participating in 'Reputex' 2005 reporting awards. These categories and individual organisational attributes are illustrated in Table 33. For the analysis phase the seventeen cases were divided into three categories: government comprised of five cases, corporate comprised of five cases and Reputex comprised of seven cases.

Each organisational case was transcribed into a Microsoft Word file and anonymised by allocating them a letter and a number, corresponding to their categorical group and the order I analysed the interview data, for example 'G4' identified a government organisation. All the files were stored electronically in folders,

corresponding to the three categorical groups, before the next phase of data analysis.

4.3.2 Interpretations of sustainability and sustainable procurement

As sustainable procurement is a relatively new concept in Australia, the chapter opens by presenting how the terms 'sustainability' and 'sustainable procurement' are currently understood and applied in the Australian organisations drawing on the interview material.

4.3.2.1 Interpretations of sustainability

The literature review (see Sections 2.2.1 and 2.3) presented a chronology of terms used to describe sustainability and sustainable procurement. Here, I begin by presenting some descriptions of sustainable development and sustainability used by interview participants who represent the entire sample audience. As a collection, these findings suggest a wide range of interpretations are used by Australian organisations in the cohort and routinely organisations appear to be customising the term sustainability for their own purpose, which is displayed in the quotes below.

> The term sustainability does get bandied around enormously. It is an interesting debate from that perspective if you ask somebody what they mean by sustainability or you simply get a whole lot of words wrapped around what they think it means, which is different to the person sitting next to them.

> ...one morning of the week was allocated to sustainability. We went through a lot of work trying to define what it was....

Additionally, respondents acknowledged that corporate social responsibility and sustainability are relatively new terms and organisational practices, which is summarised in the following quotes. This relative newness may also explain the plethora of perceptions and definitions of CSR and sustainability.

> As you know the engagement of corporations and sustainability is still fairly early. It's really only been happening for 10 to 15 years worldwide.

> Now when you move across into corporate social responsibility it's a little bit like quality but it sort of 5-10 years behind there is even less emerging standards.

...in those days and to say that you were using waste it was just not acceptable and we didn't have the language to talk about it at that time (recycled product).

The quotations below show that organisations are tailoring their interpretations to suit their own needs by making the concepts tangible and easy for employees to comprehend in the context of their own organisation. In the same way Matten and Moon (2008: 405) claim that corporate social responsibility is 'nationally contingent, essentially contested and dynamic' and sustainability is also tailored to different organisational settings where 'no one size fits all'.

It's interesting, because we're decreasingly using that complicated word, sustainability, and increasingly – as you know, it's used so variously – and increasingly talking about (the organisation) as a sustainable corporation.

It's not a cookie cutter approach; you can't just download a solution to ethical procurement that is going to fit your organisation. You need to first start to understand what your organisation stands for.

Several participants acknowledged that, while it remains an ambiguous term, sustainability appears to be driving a lot of activity, which is captured in the following quotations.

I don't think there is a central view with what sustainability means, while it is driving a lot of this activity.

There has not been a real clarity around what sustainability is around (the organisation) I think there is a huge range of activities that actually feed into what you could broadly call a sustainability program in the company.

In summary, results from the interview material show the term sustainability is used widely; it has a range of interpretations and is frequently tailored to individual organisational settings and this may explain the ongoing evolution of the term and its conceptualisation in the Australian context. The next section discusses the use and application of sustainable procurement by interview participants.

4.3.2.2 Interpretations of sustainable procurement

Several organisations, predominantly those with more mature sustainability programs in place, acknowledged that sustainable procurement forms part of corporate sustainability.

> We have a number of pillars, one of which is corporate social responsibility, which we believe is one of the key pillars of the business strategy and one stream of that is procurement.

> And it came out with quite a long – a plan for a long journey into corporate sustainability, and sustainable supply chain management was always on that plan.

Findings from the qualitative research component reveal that for the majority of Australian organisations sustainable procurement is understood as environmental or green procurement. Although all interview participants agreed that sustainable procurement involved environmental considerations, few explicitly referred to the inclusion of social elements. For most organisations the social dimension was found to be less pronounced and routinely not considered as part of sustainable procurement, which is displayed in the Table 34 below.

	Environmental	Economic	Social	Other
G1	●	●		
G2	●			
G3	●	●	●	
G4	●	●	●	
G5	●			
C6	●	●		Occupational health and safety
C7	●	●	●	Ethical sourcing
C8	●			Moving to ethical sourcing
C9	●	●		Willing to pursue social agenda
C10	●	●	●	Ethical sourcing, FairTrade
R11	●	●	●	
R12	●	●	●	
R13	●	●		
R14	●	●	●	
R15	●	●		
R16	●	●		
R17	●	●		

Table 34 Dimensions of sustainable procurement defined by interview participants

To compartmentalise these different features of sustainable procurement, one participant recommended using specific terms like environmental, rather than sustainable which she suggests has conations associated with cost.

> ... we should be getting away from using the term sustainable; really in terms of looking at sustainable procurement and sustainable price and so on, they are not necessarily sustainable, but they have environmentally preferable components within them.

4.3.2.3   Green procurement

Analogous to applying sustainability, most organisations are customising and clarifying their application of the term sustainable procurement where sustainable and environmental is used interchangeably, which summarised in the statement, 'if I use sustainable it generally means environmentally preferable'. Most organisations appear to conceptualise sustainable procurement as responding to green or environmental issues, which is summarised below.

> We make the definition of products that are less damaging to the environment or human health than other similar products are a green product.

> And sustainable procurement I just don't know if sustainable and procurement belong together; we just keep it really simple and talk about green.

> So by sort of I guess presenting sustainable purchasing as being a new framework within which you have to do all these things we would ... have to focus mostly on environmental.

The following quotations illustrate the perceived level of misunderstanding that surrounds the term sustainable procurement and its range of interpretations by organisations.

> In the framework (procurement) it says you should consider sustainability and that means a lot of different things to a lot of people.

> ...I guess that is the thing that took the longest trying to put all the words together and from that point on we started to then say for each of these commit to statements what actions would we need to put in place to implement that and out of that came the link to purchasing.

4.3.2.4   Social dimensions

Only a very few Australian organisations with more mature sustainable procurement programs in place and those with global supply chains and head offices outside of Australia provide an alternate triple bottom line (Elkington 1997) perspective. The quotations below highlight the interdependence between the three elements of sustainable procurement.

> ...there is a lot more maturity around what does it mean and a good understanding of the implications and the value of this because it needs to have a balance between, you know, the environmental, economical and sort of social issues, so it is a combination of all three.

> It's a balancing act between economic outcomes social and environmental and ultimately it needs to be robust multi dimensional relationship.

> I see it as the pursuit of sustainable development objectives through the procurement process and involving environmental, social and economical dimensions....you know economic and social development without damaging the environment through the procurement process.

Few organisations demonstrated an acceptance of the social dimensions as an equal component of sustainable procurement. Several interviewees espoused the inclusion of social issues; however, after examining material available in the public domain their procurement appeared to be dominated solely by responses to the environment. One interviewee offered an explanation for this focus, commenting that, 'people felt that environmental supply issues were a lot more tangible than social or economic ones'. It appears that organisations are pursuing environmental issues before progressing to incorporate the social aspects of procurement. As an exception to this trend one organisation acknowledged that 'we were always quite strong on what I would call the social side of the sustainability agenda but, relatively we come in via an environmental side'. Another participant suggested that social and ethical issues in procurement are addressed by regulation:

> As a personal view the concept of sustainable purchasing itself does create a bit of a problem, because if you look at the facets particular in terms of ethical and social activity they are actually already regulated.

Part of the emphasis on environmental purchasing may be attributed to its visibility. In concert with rising awareness of environmental issues, particularly surrounding

climate change and drought in Australia, this may have prompted organisations to step back and look at the environmental impacts of purchasing and supplier relationships as entry point to sustainable procurement.

> My impression is there is a general awareness around issues such as greenhouse gases and environmental change. I think you start to get a reflection of that sort of thing in people's attitudes to these things in their own personal lives and at work, so my guess is that the increased bottom-up interest is probably driven by some of those things.

This section has demonstrated how sustainable procurement is conceptualised in Australian organisations, where the findings show primarily as environmental purchasing. The next section expands on these interpretations by examining what is the level of sustainable procurement based on organisations interviewed.

4.3.3 Level of adoption of sustainable procurement

The quantitative research component examined the adoption of environmentally sustainable procurement across a range of organisations that had not necessarily implemented this practice. By comparison for this qualitative component the sample was purposive, as described earlier in Section 4.3.1. This section documents the current level of sustainable procurement adoption by organisations in the qualitative sample based on comments by participants.

Responses from participant interviews show that the current state of environmental purchasing among participant organisations was in the early stages. This was summarised by one participant stating, 'environmental purchasing in Australia is as you know a really new issue'. Several interview participants also acknowledged that sustainable procurement is not something that can be overlooked and it is 'quite and eye opener as to what hasn't been happening and in the space'. Based on comments from several organisations it could be deduced that sustainability considerations are becoming part of the procurement process for most organisations. As a process it is gaining acceptance and prominence, but not yet fully implemented as demonstrated by the following quotes.

> When I first joined procurement this whole issue wasn't even on the map. Now it's front and centre.

> This issue … it has been around for a long time but now it is starting to get more traction, more corporates understand it, more analysts, more shareholders, more directors, more staff understand it.

> I would say that we are in the process of integrating sustainability into our supply chain, rather than saying that we are already there.

> I think we've got a long, long way to go before we can truly put our hands on our hearts and say we have sustainable supply chains. We're getting there.

One interviewee summarised the potential benefits that procurement can deliver beyond national boundaries.

> We are in a great position to significantly influence in a domestic sense and also I think we can be a key contributor in a global sense and it's not often that you get those opportunities and we spent a lot of money on goods and services every twelve months so I think we are in a very good position to use that in a positive way.

Even though organisations in this sample were selected because they had established sustainability programs and some form of sustainable procurement, the findings show that sustainable procurement adoption among the sample organisations is low and mainly characterised as green procurement. However, the results also suggest a sentiment of opportunity for the future adoption of sustainable procurement, signalling that it may be in a start-up phase, but as yet not widely implemented. In the next section I give a brief summary of the key drivers encouraging adoption before a more detailed examination in later sections.

4.3.4 Summary of key drivers of adoption

Organisations in the interview sample displayed a range of motivations for undertaking sustainable procurement. While all participants were asked similar semi-structured questions there was an assortment of responses, yet a degree of convergence around similar themes of adoption.

Table 35 summarises the key drivers and influences noted by organisations for embarking on sustainable procurement. These drivers can be grouped into five broad areas, reputation, supplier relationships, internal factors, frameworks and other factors which are outlined in greater detail in the following.

The interview findings show potential loss of organisational reputation to be the most significant driver contributing to the adoption of sustainable procurement and this was most predominant in corporate organisations. The perception of a responsible organisation was also a compelling motivator 'so that customers can

purchase from a company that they believe is operating responsibly is important'. Supplementing this view, several participants stated it was simply 'the right thing to do'. Other participants were more explicit, stating 'the cost benefits and environmental benefits from green procurement are very obvious, but increasingly we're looking at other effects around protecting our reputation'. Associated with reputation several companies cited maintaining their strong performance in external indices like the Dow Jones and FTSE as an impetus: 'we were aware that our lowest area of score was supply chain management, so that's probably why corporate responsibility kicked it off'.

Related to the potential loss of reputation, the role of stakeholders, particularly NGOs, to exert pressure on public opinion tied to the 'concept of brand risk' was also found to be an influencing factor in adoption. Participants viewed partnerships with NGOs as a potential avenue to differentiate themselves and their reputation. NGOs were 'natural partners' in product standards, participants in developing supplier standards and brokers provided an 'air of independence' and their participation gave 'credibility'. Conversely, several organisations expressed their desire to keep their relationships with NGOs at arms length and recognised that partnerships needed to be reciprocal, otherwise their role could be compromised and 'they're beginning to be free consultants as opposed to campaigners'.

The potential of innovation to deliver more sustainable procurement solutions was associated with a number of issues, including suppliers, employee education and corporate culture. Several organisations expressed optimism that 'innovation will drive efficiencies'. Suppliers were recognised as a source of innovative solutions. The prospective mutual benefits of cost savings and environmental features delivered by innovative products were raised by several participants.

Close collaboration with suppliers was a recurring theme and strongly related to delivering sustainable outcomes by 'supporting the market to transform by asking suppliers how they respond'. This was characterised by long term relationships, often strategic partnerships with suppliers to deliver joint outcomes, and encouraging and mentoring suppliers to become more sustainable through dedicated programs. Several acknowledged the slow pace of change educating suppliers was a trade-off to continuity of supply 'because you can't just tell them you won't deal with them anymore. I don't think that is a responsible way to go'. One organisation expressed the intimacy surrounding their supplier relationship where 'the lines in the supply chain blurred, so they have almost become part of us

and the team'. Stakeholders in sustainable procurement adoption and their relationships with procuring organisations is discussed in greater detail in Section 4.3.7.

Internal organisational factors, such as training, senior management support and programs were also seen to affect the adoption of sustainable procurement. The majority of organisations reported that they were about to start formalised training programs as part of induction or leadership development to change behaviours and equip staff with the knowledge to provide innovative workplace solutions. Procurement staff were frequently the first cohort to undertake training. Several organisations were found to direct education programs to change staff behaviour at home and work.

Additionally, the majority of respondents agreed that based on their experiences successful implementation was reliant on senior management commitment and 'if the finance director or chief exec. isn't supportive then they can find it very hard to pursue sustainable procurement'. The majority of participant organisations were large and typically operated a decentralised purchasing model; therefore commitment at the business unit level was crucial to implementation. Many participants raised senior management as a possible impediment to implementation, even when there was an organisational champion.

Policy and program frameworks were also seen to have an affect on the implementation. Several organisations mentioned the Australian National Packaging Covenant and environmental management systems as drivers for sustainable procurement by putting environmental issues on the purchasing agenda through their product stewardship responsibilities. The majority of organisations used these systems to guide operations, without widespread ISO 14001 certification. The issues of senior management support, staff awareness and sustainability frameworks are discussed in more detail in Section 4.3.6.

This section has given a brief summary of the key drivers from organisational participants in the qualitative component. These drivers including reputation and adoption, stakeholder relationships, internal factors and frameworks will be discussed in more detail in subsequent sections of this chapter.

	Reputation		Supplier relationships		Internal Factors			Frameworks			Other issues
	Reputation	Role of NGOs	Innovation	Supply chain collaboration	Training and education	Senior Management	Home and work	Indices	EMS	National Packaging Covenant	
G1				✓			✓		✓		
G2										✓	Practical focus
G3	✓										Suppliers questionnaire fatigue
G4	✓			✓		✓		✓			
G5		✓									LCA and products Suppliers questionnaire fatigue
C6						✓		✓	✓		
C7	✓		✓		✓						
C8	✓			✓	✓	✓				✓	Right thing to do
C9											Commercial decision Products
C10		✓		✓							Sustainability is a value Competitive advantage
R11	✓	✓		✓				✓			
R12		✓	✓	✓	✓						Practical focus
R13	✓		✓		✓		✓	✓		✓	
R14					✓				✓		Reducing risk Sustainability is a value add Employer of choice
R15				✓							Practical focus Reducing risk Sense of responsibility
R16	✓			✓	✓	✓	✓	✓			Employer of choice
R17					✓	✓			✓	✓	Sense of responsibility

Themes arising from qualitative analysis: Drivers and influences on adoption of Sustainable Procurement

Table 35 Key themes and drivers of sustainable procurement

4.3.5 Primary motivations for adoption

This section examines in detail some of key drivers of adoption discussed in the previous section. These include the relationship between maintaining organisational reputation and adoption, the role NGOs play, managing risks in the supply chain and suppliers as sources of innovative solutions. These are discussed further in the following.

4.3.5.1 Reputation and sustainable procurement

The interview findings reveal that protecting an organisation's reputation and its brand appears to be the main motivating factor for embarking on collaborative relationships, as part of introducing sustainable procurement. Most corporate organisations interviewed expressed the view that protecting their reputation was the primary motivation for embarking on sustainable procurement with several participants stating 'it is the right thing to do'. The quotations below exemplify the opinions expressed by most of the corporate interview participants.

> Unfortunately, as you would know, (...), the cost benefits and environmental benefits from green procurement are very obvious, but increasingly we're looking at other effects around protecting your reputation.

> ...we were aware that our lowest area of score was supply chain management, so that's probably why corporate responsibility kicked it off, but certainly that was another one. We're very committed to maintaining that Dow Jones.

In contrast to the general consensus amongst most participants, one organisation was not motivated by the perceived potential reputational gains from introducing sustainable procurement: '...our reputation is so high, you know the motivation to go out there and go the next step is not there...'

Validation from independent third party or accredited systems like the ISO family of management systems is one means that contributes towards framing an organisation's reputation. With the rise in corporate sustainability there have been several attendant indices, rating tools and reporting frameworks that have the potential to influence an organisation's reputation, which like introducing an environmental management system draws attention to the relationship between procurement and corporate sustainability.

Since 2002 social responsibility has reared its head in the place and that was driven probably by things like the sustainability indexes like the Dow Jones and FTSE.

This prompted a number of questions and because we are listed as well as we were approached by the Business in the Community, the St James Ethics Centre and asked if we would be prepared to be involved.

While indexes and reporting regimes may authenticate an organisation's alignment to sustainability principles, alignment and relationships with stakeholders was also found to play a role in defining and maintaining an organisation's reputation. Interview participants singled out NGOs and suppliers as the two dominant contributors, in particular NGOs with their potential to influence public opinion. These stakeholders and their perceived effects on the reputation of procuring organisations is examined in the following sections.

4.3.5.2 NGOs and reputation

The range of roles played by NGO stakeholders as collaborators, program providers and to a lesser extent partners has been discussed in previous sections. However, most interview participants noted the role of NGO as 'watchdogs' and their potential to damage an organisation's reputation. Collaborating with NGOs was found to mitigate an organisation's reputational risk. The quotations below epitomise the level of concern expressed by participants in managing their organisations' relationships with stakeholders and NGOs as conduits of public opinion.

I think it will come back and bite us because before long there will be NGOs pressure and media interest public interest in who knows what it is going to be child labour issues, diversity issues global supply chain issues that we are currently not addressing in any great depth.

Again where we get pressure put on us by (international NGO) they picketed our annual general meeting last year.

I mean we've got quite a savage media as well so things can be ... it can be quite damaging if people are found to not be behaving ethically.

To manage their reputation, participants revealed several factors that influenced their relationship with NGOs including their perceived credibility, independence, and the added advantage of organisational novelty brought about by associating with NGOs. For one company their decision to support the (supply chain alliance) was premised on the inclusion of its members including NGOs: 'it's a good scheme, but

because it includes the NGO's and the trade unions, it is a credible scheme'. Another commented 'I think they (NGOs) add credibility and we have certainly done work with a number of them...' Another suggested that association with NGOs brought about a degree of uniqueness, stating, 'some companies that are seeking to differentiate themselves through NGOs, through sustainability'.

NGOs were found to play a number of roles in the progression of sustainable procurement. One participant raised the issue of their dual roles and their associated responsibilities, between organisational partners and societal 'watchdogs' which he described as being 'free consultants as opposed to campaigners'. Only one interview participant cited formal partnerships with NGOs while several others were exploring potential arrangements, which suggests that managing this dualism may be an issue requiring astute management of NGO partnerships.

The increasing number of NGOs and their degree of specialisation can be advantageous for procuring organisations; it gives organisations a choice of NGOs attuned to their objectives and product categories. This diversity allows organisations to be discriminating in their association with NGOs and type of relationships, depending on their business objectives, brand and products. The quotation below demonstrates the assortment of NGOs one organisation had relationships with, ranging from general environmental issues to NGOs formed around specific product categories.

> But for us I mean there are three broad key ones which are (international ENGO), (international ENGO), and (international ENGO). Below that there are then particular ones on particular issues ... so for example there is the (specialist NGO) and the (council) ... there is the (Network) which was originally set up by (international ENGO), but is now kind of an independent body on water sourcing.

In addition to program delivery, NGOs also provide specialist skills to assist organisations progress sustainable procurement. One participant suggested using their specialist knowledge to verify labour practices off shore.

> NGO acting as watchdogs are probably more effective in the long run than businesses trying to do it and (Human rights-based NGO) are talking about particularly in China having third party independent verification systems set up.

The specialist nature of NGOs especially as 'watchdogs' auditing an organisation's supply chain relationships means that suppliers also contribute towards framing the reputation of an organisation, which is discussed further below.

4.3.5.3 Suppliers and reputation

Reputational risks were found to reside in supply chains. The interview material reveals that the majority of organisations are assessing their suppliers for compliance against sustainability criteria to protect their reputation. The quotations below highlight the relationship between the procuring organisations' risk profile and their suppliers'.

> ...what we are concerned is our supplier's supplier's supplier is something that even irrespective of what we contract and then they do something and the mud sticks.

> ...we actually want you to tell us if something goes wrong in case there is a reputation impact back to us.

> Our major suppliers have all written to us and said they are using sustainable practices. It doesn't matter we are a big brand and we are a good source of publicity. So you need to be proactive in this area.

As well as screening suppliers for latent vulnerabilities in their supply chains that may adversely affect an organisation's reputation, suppliers have another critical role in progressing sustainable procurement: to deliver innovative solutions.

4.3.5.4 Innovative solutions and suppliers

Interview participants highlighted that a partnership relationship with a supplier was the genesis for delivering sustainable solutions, 'so it's about getting away from thinking (about costs) to thinking about, well, what can they offer our business in terms of innovative capacity'.

Suppliers were viewed as a potential source of sustainable innovation with organisations 'looking for solutions back from the marketplace' and 'how things can be done in an innovative and creative way'.

> ...because it has to be a two-way thing and I think it will also drive a lot of innovation.

> ...about, well, what can they offer our business in terms of innovative capacity that will help us to develop new products to develop product more quickly and to develop it more efficiently.
>
> That's really important and let's be honest and upfront about that because again innovation will drive efficiencies and ultimately and you know, business can get business opportunities.
>
> So it's kind of like we want you to be the best in your field, you tell us how you are going to do it.
>
> Then once you move beyond that we start to move into innovation as a savings stream from our suppliers and that's where we are starting to ask suppliers can they provide us with ideas to give us advantage, competitive advantage, so something that we can actually take into our commercial teams and say is this going to create some advantage in the marketplace. So ideas, innovative ideas such as biodegradable products, are things that would fall up at the value end of the spectrum.

In developing innovative solutions interviewees noted that there is a balance between the expectations of the purchasing organisation and the capacity of the market to deliver sustainable solutions. Some organisations noted their expectations of the availability of a sustainable alternative were not apparent in their tender responses from the marketplace. One participant commented, 'I think the Australian marketplace is another one though... especially with regard to the advancement of certain commodities like bio-diesel', finding that the market could not supply commercial quantities of bio-diesel for their purposes.

Another interviewee explained they select suppliers 'probably a little bit ahead of the game' inferring that they see faith in suppliers to transform and extend the market. This organisation like several others places the onus on the supplier 'to tell them how sustainable or environmentally friendly' they are. Conversely, one participant acknowledged large procurers such as government need to demonstrate commitment, suggesting that suppliers are 'more than willing and able to respond if only government would come forward with sustainable procurement requirements and mean it'.

4.3.6 Internal determinants influencing adoption

4.3.6.1 Senior management

Most interview participants, unprompted by the interview questions, raised the influence of senior management as a key factor in sustainable procurement adoption. One interview participant recommended using performance agreements as inducements for senior management to support sustainable procurement.

> I can see a heap of people that are really keen to do this and you just need a key person in upper management whose incentive is completely running in the opposite direction and because they culturally may not care, their values might not be aligned to that and unless you incent them through their performance management, you are not going to get outcomes.

> I'd kind of say individual commitment and support from management seems to be quite influential.

Another participant highlighted the environmental impact of purchasing was the catalyst for directing the attention of senior managers towards sustainable procurement.

> You just need a key person in upper management whose incentive is completely running in the opposite direction.

> Because when you are struggling or you are managing those very big sort of environmental impacts and purchasing activities and the like they tend to focus the minds of senior managers more than smaller things.

Other factors shown to influence support from senior management included individual commitment to environmental issues and their position in an organisation. One participant suggested it can be advantageous to 'have somebody who is a champion for sustainable procurement within an organisation'. Another participant suggested, 'if their finance director or chief exec. isn't supportive then they can find it very hard to pursue sustainable procurement'.

> I would say that there are varying levels of understanding and acceptance around these issues at senior management level within the company, so I think that is a potential barrier too, depending on which part of the company you are dealing with and who heads as whether they are interested in actually doing things around that or not.

4.3.6.2 Staff awareness

In general, most interview participants reported that their organisation had either implemented large organisation-wide staff awareness or training programs on sustainability, or were preparing for implementation. Most interview participants raised lack of awareness and knowledge as challenges rather than barriers to implementation. Some organisations proposed that procurement managers should be one of the first target audiences to attend sustainability training:

> We have also given a commitment to over the next two months to launch an education campaign across marketing and across sales on the commitments that we are making not only under the packaging covenant but also from a corporate social responsibility perspective.

There was a growing awareness of environmental issues, which was a recurrent theme raised by interview participants.

> My impression is there is a general awareness around issues such as greenhouse gases and environmental change ... and I think you start to get a reflection of that sort of thing in people's attitudes to these things in their own personal lives and at work, so my guess is that the increased bottom-up interest is probably driven by some of those things.

While the interview results show a growing awareness of environmental issues, several participants acknowledged translating this understanding into workplace behaviour was a more demanding task:

> It is interesting to watch the phenomenon where you know people recycle at home and you watch them come into the workplace and they change character and don't necessarily do it. Some people consistently do it in both places, some people don't.

Several organisations address this nexus between home and work behaviour by providing information that employees 'can take home to where their practices may also help change culture in the workplace' and also sending staff publications directly to an employee's home 'because it is the families who also read it'.

Another participant highlighted that staff were aware of their financial responsibility at work, 'yet what we don't have yet is people thinking automatically or subconsciously that they should be environmentally responsible at work as well'. Awareness initiatives targeted at home were seen as a way to reinforce behaviours

at work. One participant acknowledged managing the staff perceptions of sustainable products was an issue of concern:

> There is already a lot of change in products 'LCD monitors and energy star enabled' features. It is built in a part of the evolution of products without being labelled 'this is a sustainable product'. These things are happening but people don't look at that as a sustainable product. They think that a sustainable computer would be perhaps something that has recyclable materials or something.

4.3.6.3 Cost of products and programs

Interview participants' comments about the cost of products exhibited a range of viewpoints from an obstacle to purchasing environmentally preferable products, an eco-efficiency perspective linked to environmental benefits, to a broader connection to organisational sustainability and reduced costs, resulting from types of packaging. Most of these opinions were raised by corporate organisations. The quotations below are all from corporate organisations.

> ...it always comes back to, is it cost competitive? The management directive is quite clear that we won't wear a cost penalty for environmentally preferable products but we do have a preference for environmentally preferable products.

> So there's been a lot of focus on that, driven out of a cost perceptive and an efficiency perspective, and it has environmental benefits as well. So yeah, you can see that stuff happening in the industry.

> ...but if it's environmental issues sometimes particularly in packaging there's a coincidence often of good environmental outcomes often save, decrease costs.

> ...the conflict between cost in a world where cost savings are king is still an issue but a lot of the products you might want to buy don't have the economies of scale so their prices aren't competitive so, if we get to a point where you can get buying consortiums that might help, it may not, but that is definitely a constraint.

In summary the interview material suggests that organisations may consider a premium for environmentally sustainable products if there are associated benefits, like reduced packaging.

4.3.6.4 Organisational systems and processes

The interview material also shows that sustainable procurement is conceptualised as a natural partner or a subset of corporate sustainability. One organisation stated that a compelling reason to adopt sustainable procurement is that 'it slots really neatly into CSR activities of the organisation'. Another participant noted 'I actually now have a dedicated resource in my team who looks after sustainability in procurement'. Other organisations have capitalised on the inherent synergies between the functions by locating 'the sustainability unit physically in the procurement department'. In some cases employees have dual responsibility for both functions where 'the CSR manager is that person who will be the coordinator for purchasing program'. The quotations below highlight that sustainable procurement forms part of an organisation's sustainability program.

> One of the pillars of the global business strategy is corporate social responsibility and procurement is one stream of that pillar.

> ...our commitment to sustainability or sustainable development is not there for the whim of one CEO or the whim of a few people who have personal passions or views about it. But it is in fact a core business strategy because it's effectively a value-add to the four planks of our purpose.

> And it came out with quite a long – a plan for a long journey into corporate sustainability. And sustainable supply chain management was always on that plan. So it was on that plan from a long time ago.

4.3.6.5 Environmental management system

Most interview participants cited an EMS as an influencing factor in sustainable procurement, particularly in relation to product selection. An EMS administers the environmental aspects related to organisations' activities including its products and services typically modelled on templates such as the ISO 14000 series and EMAS in Europe. Its main objective is to manage and improve the environmental performance of the organisation. Modelled on its companion, quality management system it is a problem solving and identification tool based on a continuous improvement model.

Most of the organisations interviewed had an EMS in place but not necessarily third party accreditation. Establishing an EMS was also seen as a way of embedding environmentally sustainable procurement.

> All government departments were required to establish an EMS, which is broadly based on ISO 14001 but there is no requirement for certification. Therefore there is a requirement under the EMS for government departments to implement sustainable purchasing practices.

Another organisation was motivated to 'set up an environmental management system to continue to challenge the quality and robustness of their environmental policy'. Additionally an EMS can focus greater attention on the product attributes as part of the purchasing decision. One participant noted that 'from a purchasing point of view they need to get quite specific information about their product because basically if that's about them complying with their own internal environmental management system'.

Having an EMS directs an organisation's purchasing decisions concerning the environmental aspects of products with one company noting that it is 'not just energy but products which use energy ... to comply with our own internal environmental management system'.

Several participants observed the spread of EMS adoption through sectors 'which started with the chemicals and industrial sector then progressed into well, you know, some of the mineral sector'. Like the introduction of environmental management systems, sustainable procurement permeates one sector then penetrates and moves on to another sector: 'now we're seeing ISO 14000 going into the service sector in a big way so you've got office based organisations worrying about the office paper and stuff'.

This section discussed the effect of systems and progress from an internal perspective, but, they can also be applied as supplier requirements as part of procurement arrangements. The next section outlines the performance requirements placed on suppliers.

4.3.6.6 Supplier performance

While there are several organisational characteristics that influence sustainable procurement one of the most critical elements was found to be how procuring organisations engage with suppliers and the requirements placed on them to deliver sustainable procurement solutions. Aspects of supplier performance, the influence of organisational size on supplier requirements and frameworks imposed on suppliers are examined in the following.

Suppliers form an integral part of sustainable procurement and frequently their performance against sustainability criteria is assessed as part of the procurement process. This section discusses the processes, frameworks and instruments applied in supplier assessment with examples from the interview material.

Findings show that most organisations had formal supplier assessment programs that incorporated elements of sustainability: 'On supply chain stuff, I guess the barriers are – the biggest one is the very practical one around getting the suppliers themselves to recognise the value of this stuff'.

Most organisations interviewed are working with suppliers to improve their sustainability performance utilising a variety of techniques from deploying relationship managers to utilising education tools. Several organisations work closely with suppliers based on continuous improvement models borrowed from quality and environmental management. The majority of organisations have incorporated or plan to incorporate sustainability considerations into 'their standard sourcing activities'. One organisation screens every supplier that responds to a request for tender and scores them on sustainability results, while others employ relation managers to assist suppliers improve their businesses.

> So we don't out–select. So really we're very much seeing that we're at a stage where this is very collaborative and it's about good assessment and continuous improvement of companies, and in fact that's really quite important to getting the companies to cooperate.

> it doesn't mean you walk away from the supplier, it means you work with them to slowly change and educate so it is a softly, softly approach.

The potential burden of imposing sustainability requirements on smaller suppliers was also acknowledged and one participant noted 'often sustainable products are often provided by SMEs'. While recognising the constraints of smaller suppliers the majority of companies were concentrating their programs and assessment processes on larger primary suppliers.

> There are also some other smaller companies that we're conscious of that don't have the resources and the infrastructure to provide massive amounts of information but none the less their behaviour demonstrates a commitment to improving performance in that area and certainly where we are working is how can we create a community of practice to share that information.

> Little guys don't necessarily see it as core business and some of the big guys are surprisingly resistant.

> I think it is growing: some small businesses are surprisingly good at it as well and others just don't have the resources and haven't had the intellectual space and time to get their head around it, and that's where I guess if we can help we will, but we will target the big guys first.

For other organisations small suppliers are their largest cohort so they have tailored programs to their requirements: 'they're our largest supplier, they do the majority of the organisation's supply chain work. It's extremely important that we have a good relationship with them'.

On the whole organisations were found to adopt a mentoring or coaching role to educate suppliers in sustainability issues. Most organisations were shown to concentrate their efforts on large, tier-one suppliers and recognised that that these requirements can be onerous and costly for SMEs to implement. However, most organisations were keen to engage with SME suppliers as potential sources of innovative products.

4.3.6.7 Frameworks and instruments applied in supplier assessment

To improve a supplier's performance in sustainability interview participants cited two main frameworks; National Packaging Covenant (Covenant) and environmental management systems (EMS).

Four corporate organisations cited the covenant is a significant instrument contributing to the spread of sustainable procurement because product manufacturers are required 'to look at how the environmental performance of the packaging that we use can be improved' in collaboration with their suppliers. Operating in a co-regulatory environment, manufacturers 'have to work with their supplier base to bring about the improvement and the sustainability not only of our business but also their businesses'. The outcome of the Covenant is to increase rates of recycling and reduce wast to landfill, which is achieved through supply chain cooperation. Most of the interview participants noted that their suppliers were also signatories to the Covenant and agreed the targets cannot be achieved without working in partnership with their suppliers. Commenting on the Covenant, one participant noted:

> …we have to get these guys to work with us to get it to work. We cannot
> comply without. We are happy to comply to the Covenant but if we can't
> … It is just a partnership element.

While the covenant requires a cooperative relationship between supply chain partners, another means of diffusing sustainability through supply chains is by requiring suppliers to have an EMS in place as a contract condition. Most organisations asked suppliers if they had an EMS in place and if it was certified by a third party to a standard, but this was not a mandatory requirement unless they were large key suppliers: 'For the bigger or more high risk organisations we potentially oblige them to have third party assessment done'.

One organisation has made it a mandatory condition for suppliers to have environmental management plans and 'if they didn't have one, they have to commit to have one in a certain period of time. Now it's just mandatory for companies to have it because we are a few years done the track'. Most organisations were mindful that an EMS is an onerous requirement for suppliers:

> … the problem with ISO is that it can be good but it is also very generic
> and I mean it is a big commitment for any organisation to put ISO in
> place and it tends to be like throwing a big blanket over everything.

Other organisations developed 'a template that has the minimum of what we would accept they have to submit'.

The Covenant places co-regulatory requirements on suppliers, but most organisations were shown to have a measured approach to EMS requirements and suppliers trying to align requirements with the potential risk of the supply and contract.

In summary, senior management commitment and staff awareness training particularly tailored to procurement was found to be supportive of adoption and only corporate organisations raised the cost of products as an obstacle to adoption. Organisations participating in external indices and reporting frameworks and implementing an EMS were found to adopt sustainable procurement and also most organisations were found to pass sustainability compliance on to suppliers in a collaborative manner. The next section documents the types of collaborative relationships associated with adoption.

4.3.7 Stages of stakeholder collaboration

In addition to the internal organisational factors the interview material examined organisations' stakeholders, their salience, the types of stakeholder relationships, and the outcomes that result from collaborative arrangements. Analysis of the interview material revealed that participant organisations collaborated predominantly with two main actors, that is suppliers and NGOs and to a lesser extent with government agencies, peer organisations and employees. All interview participants reported that their organisation had some form of collaborative arrangements in place to progress sustainable procurement.

The networked nature of procurement and supply chains with its multiple layers of interaction and dependence is sympathetic to collaborative relationships. This feature was acknowledged by one corporate participant who suggested that:

> sustainable procurement could benefit from looking at how can we work in a more collaborative way. So I think … Yeah, I see it very much from a network perspective really, but that's just the kind of … one of the ways that we look at the world.

In a contrary finding, another participant questioned the value of these arrangements, highlighting the substantial investment required to instigate and maintain these relationships:

> I just worry that an awful lot of the intellectual investment that goes into those partnerships, is just that. It's an intellectual exercise. I haven't seen much evidence to date of anything particularly practical coming out of any of those partnerships.

Examination and analysis of the interview material revealed five distinct types of collaborations that identify the nature of the relationship between a procuring organisation and a selection of stakeholders including suppliers, NGOs, peer organisations, government and employees. These stages of collaboration are (i) engaging stakeholders, (ii) communication, (iii) relationships, (iv) partnerships and (v) networks and alliances. Procuring organisations displayed varying levels of engagement with different stakeholder groups. Principally, these collaboration stages are not path dependent, although there is a degree of interdependence between some stages. Good channels of open communication were seen to establish the foundation for further collaboration, which could be seen amongst

interview responses to eventuate into longer term relationships or formal partnerships between the parties.

Analysis of the interview material suggested that the most appropriate way to discuss organisational stakeholders was through the viewpoint of their relationships with procuring organisations, as opposed to describing each stakeholder group. I have therefore categorised the interview material based on types relationships procuring organisations have with stakeholders to examine in greater detail the motivations and outcomes that surround these relationships. This approach also allows elucidation of the potential of collaboration with stakeholders to accelerate the adoption of sustainable procurement. A description of the five collaboration stages follows.

4.3.7.1 Engaging stakeholders

After identifying definite stakeholders, engaging with them was often presented as the initial stage in stakeholder relationships. Seeking the opinions of stakeholders was raised several times by participants as a key component of successful adoption. Stakeholders refer to a range of audiences and organisations. Several participants describe stakeholders as 'non suppliers' and also refer to employees as stakeholders in developing documentation for sustainable procurement, while another participant had a broader application of the term referring to stakeholder forums for 'anyone with an interest or is active in the environmental purchasing area'. The role of stakeholders was raised mostly in relation to an organisation's reputation in the community, as mentioned earlier in Section 4.3.5.

The interview material shows that organisations are consulting with a range of stakeholders to identify their expectations as part of sustainable procurement implementation, particularly in the early stages of adoption. Several interview participants, particularly corporations, explicitly linked stakeholder consultation with business continuity and their role in the community.

> ….we had to understand what we were committed to, what are the expectations of stakeholders what gaps do we need to close and where do we actually want to be in this.

> So there are a number of drivers and listening to your stakeholders and what they are saying so that customers can purchase from a company that they believe is operating responsibly is important.

One participant drew linkages between efforts to improve its performance and perceived detachment from its stakeholders: 'So there was a long history of trying to turn around (the organisation) that just wasn't connecting with all its stakeholders – community, its employees, the whole range of things'.

Engaging with organisational stakeholders and eliciting their expectations of responsible operations was found to be the starting point for examining procurement. Additionally, it appears to demonstrate a realisation that an organisation has responsibilities and expectations to manage internally and externally with a broad range of actors in a variety of collaboration relationships.

Organisations were found to respond to their responsibilities or their 'licence to operate' in a number of ways; frequently this was seen to begin by bringing stakeholders together in forums and working parties to capitalise on the synergies and share information between interested parties.

> We have a Stakeholders Forum ….and hopefully that just means that everyone knows what resources are out there, no one's duplicating what anyone else is doing, and there a relationship developed with all the organisations and people that are active.

> …what we try to do is bring people together so we try to bring purchasers and manufacturers together and we try to, if not we talk to both at least.

Most participants mentioned the importance of engaging with NGOs as stakeholders in shaping their sustainable procurement plans. NGOs in this context were seen to be a source of current expert knowledge. One organisation 'convened an NGO's working group, although it did include government as well, government and non-government; it really meant non–suppliers working group, other stakeholders'. Another organisation consulted NGOs and highlighted their specialist nature related to sustainability and procurement:

> …we've had discussions with (International NGO) and have discussions with them around the human rights issue in supply chain. We have spoken with a number of environmental NGOs as well around the environmental side of things.

> I think that's where NGOs and government have a role to play in helping people in kind of sharing that knowledge.

> we can have good discussions with some of the NGOs around how we
> do some of these things better because they have some useful
> information to share.

> ... we have regularly have forums where we invite NGOs to have a look
> at what we are doing and we certainly accept their feedback.

Findings show that NGOs were seen as the primary stakeholders in the engagement stage and characteristically they were found to provide specialist product and supply chain advice in the tender preparation stage of contract development.

Generally, the engagement stage was seen by interviewees to establish the foundation before discussions and exchanging ideas in the communication stage, which is outlined below.

4.3.7.2 Communication with stakeholders

The communication stage within collaboration was characterised by open dialogue between procuring organisations and stakeholders, often centred on general sustainability issues, which were shown to lead to sustainable procurement discussions or introducing sustainable principles into their procurement practices. Collaborating actors prevalent in this stage include suppliers, NGOs and peer organisations and are discussed below.

Supplier organisations were found to be the most common stakeholders in the communication stage. The findings infer that instigating open communication procedures with suppliers has the potential to lead to mutual benefits, with one participant commenting that 'engaging them in the process then helps them further down the supply chain'. Another participant highlighted that an atmosphere of open dialogue moved the focus of discussions beyond 'hammering each other over costs' towards sharing information and exploring mutual goals.

The majority of organisations reported having contracts with key suppliers in place, which establishes a formal contractual relationship and was shown to act as a platform for extended relationship. As part of this process suppliers' feedback is sought and considered in integrating sustainability into procurement practices.

> ...we brought in ten key suppliers and had a discussion with them all
> together and told them what we were trying to do and where we saw
> the value and we also want feedback from you guys we're not just
> imposing this on you.

> … we have just finished our briefing on the CSR report we are actually bringing suppliers inside into what we do.

> We will socialise the CSR procurement policy with them (suppliers) initially the ones that are already working with us because then they can start thinking about how they can help us and we raise these concerns.

Based on the findings, organisations appear to consider this preparatory stage as establishing the groundwork for further 'collaborative engagement with suppliers' and subsequent progression to other forms of collaborative relationships. One organisation suggested using their existing supplier relationships as a base to progress to 'some form of formalisation which would sit on top of the existing procurement arrangements that we have with them'.

> We are working through a series of workshops with them over the last couple of months, which have been designed to one look at how you would actually formalise a strategic alliance between the two parties.

Purchasers in this stage are seeking suppliers' input with a view to a shared future with a focus on innovative solutions, shared business prosperity and the mechanisms to make this work 'moving from cost up to value': 'We have had some consultation with a couple of groups about getting involved and becoming a partner in packaging and recovery'.

The relationship between NGOs and purchasers was seen to be based on maintaining an open dialogue:

> … we also do a lot of dialogue with NGO's and others and we carry that information internally that kind of says they are very appreciative of what we are doing.

Communication with peer organisations was seen to be characterised by sharing information and saving time attempting to 'make it easier' and develop solutions for industry-wide processes by coming together. 'We just kind of all sort each other out'.

> So good dialogue in terms of peers in different organisations and the supply so I think transparency is really important ….I think you develop credibility and you end up with a better outcome because you are not withholding information and people are not trying to interpret what they think the information might align with.

From open communication with collaborating organisations some procuring organisations were seen to progress to a subsequent collaborative stage, relationships with stakeholders. This stage is outlined in the next section.

4.3.7.3 Stakeholder relationships

The relationship stage was found to be characterised by open communication between the procuring organisation and stakeholders and shown to establish a platform for building trust between the parties. Relationships, as described by participants, may start on a shorter term basis, like a project or contract with a view towards building a closer interaction to progress sustainable procurement together. Generally, relationships were seen to be less formal and less structured than partnerships and still heavily premised on existing commercial arrangements. Relationships were seen to be formed on finding common ground between organisations that may lead to closer relations, including partnership. One organisation referred to relationships as a 'pre partnership' stage where they worked with suppliers on strategies to reduce paper consumption. The qualitative data identified that procuring organisations had relationships predominantly with suppliers and NGOs and to a lesser extent there are relationships between organisational departments and across sectors as discussed below.

Classically, procurement (especially for medium to large organisations) was found to be reliant on the continual supply of reliable quality goods or services that meet the purchasers' requirements. In this two-way relationship, the supplier is dependent on the purchaser for revenue and in return the purchasing organisation is dependent on the continued supply of quality goods and services to fulfil its objectives. The quotations below from a number of interview participants reflect this concept of mutual dependence.

> ...what we realised ... that we actually had to change that commitment we'd given, because we weren't actually going to be doing (our business) because we wouldn't have any suppliers. And we'd have very nice (buildings), but nothing happening behind.

> ...there is an absolutely genuine desire to support those supply chains in any way that we can. I mean I think because we just want to, because it's the right thing to do. But also, it's a very, very simple business case ... we need suppliers. And if we put them out of business, then we're out of business too.

So we have had an imperative to go back in there and try and resolve that situation. So otherwise we don't have sustainability of supply.

As an essential player in sustainable procurement, most organisations described their interface with suppliers as 'generally long term relationships'. While some organisations described their progression as 'very much at the beginning of our relationship with some of those suppliers, particularly on issues of environmental management',, most acknowledged that establishing and maintaining good relationships with suppliers is imperative to their business continuity.

> ...unless you have your supply chain relationships operating very well and a range of other initiatives you can't possibly run a successful company over the time.

> ...they're our largest supplier, they do the majority of the organisation's supply chain work ... It's extremely important that we have a good relationship with them.

Initially, supplier relationships were found to rest on commercial arrangements where there can be an uneven balance of power and influence either with suppliers in a monopoly market controlling continuity of supply or an abundance of suppliers giving purchasers greater supplier selection. Typically, there is an uneven degree of reciprocity between the parties in a relationship; but the findings reveal that 'sustainability' can be the catalyst of mutual interest leading to a long term union.

> So you need to almost change the attitude of both companies towards how you see each other to get over the basic of that stroke commercial arrangement to look at doing things which are more advanced in terms of linking the futures of your company together.

> We decided earlier this year to form what was called a strategic alliance approach to our major suppliers... So what we are looking for as a result of having launched that program is a whole range of things that we can do with them which more closely aligns our business and working on issues around sustainability.

> ... we are now working with them (supplier) to develop a green catalogue so it will be easy for procurement officers within departments to select a green product.

Relationships with suppliers also extend to raising awareness and including them in organisational events.

> We are only going to do it through relationships, bit by bit and some of that is inviting suppliers to do things like the (NGO hosted) event. We had suppliers come to that event with us.

Establishing strong relationships with suppliers in one industry was found to set new industry standards and led to transformative change. This relationship started by providing support on occupational health and safety so that extending to environment issues was a 'very natural addition'.

> It's about building a community if you like, around that relationship and sharing information … because again, that's where the biggest relationship is.

> So helping them or engaging them in the process then helps them further down the supply chain… So we are kind of learning together what they do and what we do and then that helps what happens downstream.

As with suppliers, organisations had relationships with NGOs across a wide spectrum. Many organisations were keen to describe their 'good relationships with NGOs'; but the majority were hesitant to enter into formalised agreements.

> … we certainly have a relationship with (NGO); we have done some work in that area.

> … they might not be formal partnerships but definitely relationships where we can have good discussions with some of the NGOs around how we do some of these things better because they have some useful information to share.

Motives for embarking on a relationship can also be more explicit with those 'seeking to differentiate themselves through NGOs, through sustainability', which could be interpreted as a risk-management strategy. Several organisations singled out an Australian environmental NGO that attracts media attention for a number of product campaigns in Australia.

> I guess community wise, we have got a couple of obvious relationships with (Australian environmental NGO).

(Australian environmental NGO), we have had a couple of those programs running for a number of years and we are talking about introducing some more, so that has been a solid relationship.

Effective relationships within organisations between departments and functions were also found to engender a receptive environment for sustainable procurement practices and expedite implementation.

It can be easier if we have got a network of environmental management system coordinators that can introduce those specs into their departments and have good relationships with their procurement officers and so on.

In addition there were relationships established across sectors to generally improve performance.

After all, what we are looking for is relationships commercial relationships between whether it is between private companies or between public sector or private sector that should be based on an understanding of what the issues are and an understanding of how performance can be improved.

Progressing from a 'relationship' between organisations formalised partnerships may result, which is discussed in the next section.

4.3.7.4 Stakeholder partnerships

Stakeholder partnerships were seen to be characterised by a close relationship between procuring organisations and stakeholders based on a commitment to long term goals and mutual outcomes. The responsibilities of each partner and partnership outcomes are documented in a formalised agreement which is used to monitor targets and achievements. Partners in this stage include suppliers, NGOs, and government through programs.

Supplier partnerships in this stage differ considerably from other stakeholder partnerships, based on participants' descriptions. Most organisations had established partnerships with suppliers, but only one organisation had entered into a formal partnership with an NGO. While most participants applied the term 'partnerships' to NGOs they were predominantly exploring the possibility of instigating a partnership as a prospective undertaking.

Relationships with suppliers were shown to often commence with an existing contractual arrangement, and partnership was seen to shift the relationship beyond purely commercial to working towards mutual goals and formalising closer ties between the organisations. Almost all the participants from the organisations interviewed reported some form of partnership or strategic alliance with their key tier-one suppliers:

> We decided earlier this year to form what was called a strategic alliance approach to our major suppliers … This extends to a whole range of things that we can do with them which more closely aligns our business and working on issues around.

> So you need to almost change the attitude of both companies towards how you see each other to get over the basic of that commercial arrangement to look at doing things which are more advanced in terms of linking the futures of your company together.

> Basically what we have to do is change the behaviour on both sides of the relationship.

> … so our view is now to try and build up trust with the supplier so they work with us to resolve the issues.

Several organisations were seen to display a symbiotic understanding of their relationship with suppliers, moving away from contractual underpinnings towards establishing new ground rules for cooperation.

> And then it is partnerships with suppliers I would actually call them our supplier relationships not just contractual but partnerships in that we are working towards mutual goals.

> …the lines in the supply chain blurred, so they have almost become part of us and the team.

The type of commitment by organisations sends a strong message to suppliers that the relationship is reciprocal and signals that investment in sustainable solutions can be justified for shared gain. Establishing a partnership means that organisations can jointly pursue innovative projects beneficial to both parties 'so that they can actually look for where new business opportunities may sit for them'.

The qualitative data suggest that organisations partner with NGOs primarily to establish credibility and legitimacy. As part of these partnerships, responsibilities of each party are agreed and documented and NGOs, frequently receive payment, which may take the form of a 'quasi endorsement' of an organisation. Only one organisation had a formal partnership arrangement in place.

> We see them as very much sort of two-way relationships. Obviously any NGO, who's receiving reasonably substantial sums from us, is going to say that they derive a benefit. But I think what we get out of that is firstly, a better understanding of the external world.

> We get the value add, if you like, of third party endorsements from respected external parties, non-government groups. So there's a joint brand advantage if you like, so our brand alongside the brand say of (charitable organisation), which is one of our major partnerships.

Other organisations were shown to regard partnerships with NGOs as fundamental to future business prosperity, in much the same way as they view their relationships with suppliers.

> ...all of those partnerships have been developed with the idea that we are engaged in societal terms in reducing risk in society. So we, that they play a very fundamental role for our business success in the long term.

Similar to NGO partnerships, relatively few organisations had established formal partnerships with government organisations.

> We also would consider we have partnerships with a lot of environment groups and NGOs which are part of the broader sort of public thinking and development.

> Yeah, well I do consider the Government as a partner very much.

Several organisations expressed an interest in establishing partnerships with NGOs; but, after thorough investigation, finding a common platform was found to be an obstacle. Furthermore, on closer examination most participants found these partnerships appeared to be weighted in favour of one party, which is expressed in the quotations below by a range of organisations. These comments infer that organisations are investigating the possibility of partnership based on the existing communication stage with some NGOs.

> We are looking at what does the partnership look like? It's got to be a benefit for both.

> We had a bit of chat with him about forming a partnership in some way; we just can't find anything in common. We can't find a common leg.

> We want to actually do something that has an outcome for us, something that has an outcome for them and something that has an outcome for the community.

Another organisation raised a word of caution suggesting that formalised arrangements with NGOs may jeopardise their independence and bring into question their credibility, which could be perceived of as taking advantage of NGOs and specifically their function as community watchdogs.

> No, we don't formalise it and certainly I think NGOs are very nervous of that when they start to be inducted into some sort of formal process … a) because I think they feel then that their names are being used and b) that they're beginning to be free consultants as opposed to campaigners.

Government and partner organisations in government programs have similar issues, realising that in a partnership there is equality on both sides.

> So I think we could do a lot more with that, and I think that we do need to move more towards genuine partnerships rather than a to-do list with a cheque at the end.

Peer organisations were also found to be forming partnerships to standardise processes and share systems and approaches.

> …we had some relationships with (organisation) and to lesser extent with (organisation) and mostly because they've been trying to drive sustainability down their supply chain…

> The (initiative), if we can make that kick off that will be significant for us and that will see us working with our peers, other (organisations).

In closing there are partnerships formed across several actor groups, which take the form of networks or alliances.

> I think those partnerships, they're natural partnerships that you think
> of, manufacturers, consumers or purchasers and government, are all
> very important and the glue that fix them together are research outfits
> … like universities, industry bodies and trade bodies

The collaboration stages previously discussed were between the procuring
organisation and one stakeholder group, whereas networks and programs
frequently include a variety of stakeholders and organisations as discussed below.

4.3.7.5 Networks and programs

Networks were found to connect a range of stakeholders to assist organisations
progress sustainable procurement by sharing information, time and resources. My
research identifies three main actors that form networks: suppliers, NGOs and
employees. Membership of a network is often an entrée into sustainable
procurement, which supports organisations with specialist advice, ongoing support
and frequently tools to assist implementation. Several participants were members
of networks and programs that included a community of suppliers aligned to
support recycled products.

> … we are members of something called (supplier network) and again
> there are certain minimum points that suppliers have to meet and then
> assessments to improve to best practice within that.

> Through the (alliance) … we sort of work with suppliers to encourage
> them either to become part of that or just attempt to understand how
> they can incorporate it into their business.

> … we've got really good relationship with suppliers … we have a
> discussion about how they can most effectively work with the (alliance)…
> that's an important relationship that we continue to develop.

Several organisations also referred to sustainability networks within organisations.
Staff networks have several valuable features, where issues are raised and owned
by staff and are likely to have a greater chance of success because of staff
ownership and support. One organisation had 'an environmental champion's
network' where staff raised the issues of using recycled paper and recycling used
paper. Discussions in this network 'led to procurement getting on to the CSR
agenda and it is firmly there in place'.

> Our environmental management committee … provides I guess a
> community of practice to share best practice and knowledge across the

group as well and our procurement people are represented on that as
well.

Another organisation brought suppliers into their staff networks as an essential part
of their transition to sustainable procurement.

And we have done things like our environmental management
committee, our facilities managers are key to us managing our
environmental performance as suppliers. They sit on our environmental
management committee across the group.

4.3.7.6 Program providers

Networks and programs are frequently facilitated by a range of actors to assist
implementation. Government and environmental NGOs were identified as the main
program providers for sustainable procurement in the qualitative component of my
research. NGOs were singled out for the role they play as 'brokers' to support
organisations to undertake sustainable procurement.

...so organisations like (green purchasing program) and (Australian
ENGO) and potentially (alliance) are sort of brokers to help, to assist in
that process and provide the sort of air of independence and encourage,
there's no doubt about it they're active organisations, that encourage
procurement to go down this path and to give them the tools with which
to do that.

Only a few corporate interview participants referred to government-facilitated
programs: 'We've got good relationships with the (association) and (program)'.
'We decided to be a partner in the carbon disclosure project (government
program)'.

Government has also facilitated programs to support organisations and their supply
chains to become more sustainable with one participant noting that realising a
partnership arrangement required a balanced commitment. Participants also
participated in government-facilitated programs to improve sustainability outcomes
in their supply chains. However, one participant questioned the outcomes of this
government partnership:

I've been a little bit critical of the government partnership we've had to
date, in that it's been, I think, a little one-sided. And there's a fine line
around a true partnership, and the values that you get out of that true

> partnership, versus us writing down a list of things that we're going to do, and then the government checking that we've done...

Stakeholders play a number of collaborative roles in the progression of sustainable procurement: as partners and in some instances, particularly NGOs and government as partners and program providers. Networks and alliances were found to provide peer procuring organisations a forum to discussion issues, share information and access specialist knowledge in the pursuit of sustainable procurement.

Analysis of the interview material suggests a networked perspective, where procuring organisations have different levels of engagement with stakeholder groups. Based on my findings I present a nomenclature of collaborative relationships for sustainable procurement adoption. These stages, which are not necessarily path dependent, include engaging stakeholders, communication with stakeholders, stakeholder relationships, stakeholder partnerships and networks and alliances.

4.3.8 Summary

Results from the qualitative component show sustainable procurement is conceptualised as green purchasing by most participant organisations. By exception, organisations with head offices outside Australia were found to conceptualise sustainable procurement to include social criteria. Correspondingly among sample organisations the findings show the level of adoption of a triple bottom line approach is low and organisations were seen to be progressing from green to incorporate ethical and social considerations. While adoption was found to be low its prominence was seen to be growing as observed by participants.

Creating an organisational culture that supports and encourages adoption was found to be important. Findings show senior management support is integral to successful adoption to create an organisational culture that supports adoption. While most organisations were found to have broad sustainability awareness programs in place, sustainable procurement training was not widespread and about to start in some organisations. Several participants mentioned the challenge of bridging the gap between environmental behaviour at home and workplace with awareness programs. The perceived cost of sustainable products was seen to be an obstacle, but participants were also aware of trade-offs between products and other savings like reduced packaging as potential savings.

Potential loss of reputation was found to be the most significant driver of adoption combined with an organisational moral reasoning of 'the right thing to do'. This was also related to maintaining performance in external sustainability indices and systems, like an EMS, were seen to trigger green and sustainable procurement. While sustainable procurement was seen to 'slot really neatly into CSR activities' interviewees mentioned the supply of sustainable product alternatives was not always available in commercial quantities.

Findings show all sample organisations had some form of collaboration to progress sustainable procurement and mostly with suppliers based on long term mutual relationships that were the platform for innovative solutions. Other collaborators included NGOs and to a lesser extent government agencies with peer organisations and employees. The findings show five not necessarily path-dependent stages of collaboration associated with adoption between procuring organisations and stakeholders. These stages of collaboration are (i) engaging stakeholders, (ii) communication, (iii) relationships, (iv) partnerships and (v) networks and alliances.

NGOs were seen to be a source of specialist knowledge particularly in the early stages of engagement and communication and establishing stakeholder relationships, however most organisations were reticent to establish formal partnership agreements. The findings show association with NGOs was seen as a way for organisations to differentiate themselves, although only one organisation had formal partnerships with NGOs.

Suppliers were found to be the key stakeholders and organisations were mentoring and supporting them to adopt sustainability principles to manage potential risk in the supply chain. Based on long term contractual relationships organisations were found to be working towards mutual goals and innovative solutions and were most frequently referred to as partners. Organisations were also customising sustainability instruments to accommodate and encourage environmental compliance by smaller suppliers.

Networks and alliances were found to be another vehicle to support organisations adopting sustainable procurement, most frequently facilitated by NGOs and government to a lesser extent. Only two corporate organisations had partnerships with government and expressed reservations about their underlying motivations for 'true partnership'.

This chapter has presented the conceptualisation of sustainable procurement by the sample organisations, motivations for adoption and the role of collaboration with other organisations. The findings presented here were found to be common across the cohort. In the next chapter, I present themes from each case as a unique contribution to a collection of cases, as part of the qualitative research component. Chapter 5 applies arts-based inquiry techniques to the qualitative material discussed in this chapter to present the collection of cases.

'The aesthetic understanding of organisational life is an epistemological metaphor, a form of knowledge diverse from those based on analytical methods' (Strati 1992: 569)

Chapter 5.   An arts-based interpretation

The previous chapters reported on research results examining the progress of sustainable procurement adoption based on the quantitative and qualitative results and analysis. Discussion in these chapters centred on common themes and drivers across all the research data in both components. By contrast, this chapter presents the themes unique to each of the seventeen cases in the qualitative component expressed through art works. This was done to expand on the understanding of sustainable procurement adoption utilising an additional method of analysis and representation. The chapter is divided into two parts. I commence by giving a brief outline of arts based inquiry, its background and my rationale for its selection, before presenting my application of this technique through photographs of my collages, which are accompanied by short vignettes of each organisational case.

5.1.1 Application of arts-based inquiry

Arts based approaches represent one of the possible choices available to the qualitative researcher. This field of research is referred to as arts-based inquiry or arts-based educational research, as it is often applied in pedagogical applications. Schwandt (2007) defines this form of qualitative research as:

> an intellectual and practical development within the broad field of qualitative inquiry that challenges the idea that social inquiry and educational research must conform to the norms of science. It reflects multiple interests in the intersection of arts, education, the humanities and research.

Arts-based research forms part of a new tradition of inquiry where creativity (Lincoln,1995, Lincoln & Reason,1996) and the 'use of image enhance understandings of the human condition' (Weber 2008:43). I selected art as a form of expression to engage the research audience in an alternate language (Kerr & Darso 2008) to complement my existing textural findings. My *artworks* are intended to reveal the progression of individual organisational participants towards sustainable procurement through the medium of collage.

Each organisational case is represented in an art form expressing novelty and paradox. I express an impression of the whole organisation through the lens of sustainable procurement. This can be understood on two levels: as an individual

work and collectively as an anthology representing sustainable procurement at a point in time when my research was conducted. Strati (1992: 557) suggests:

> the purpose of aesthetic discourse is to focus on unique, ephemeral and ambiguous organisational facts which, although not experienced directly by the reader, can be perceived at the level of imaginative experience and fantasy and are thus credible.

Equally, as Eisner (1995: 3) states that 'artistically crafted work creates a paradox, revealing what is universal by examining in detail what is particular'.

Creative works engage audiences in a particular discourse that transcends linguistic barriers. At the same time, visual expression is also a contemporary form of communication; internet, television, cinema and 'interactions with multi-media are part of the popular culture' (Bathurst et al. 2008: 531). Dewey (1934: 36) pronounced, 'art is a spontaneous and a real everyday experience'. In combination with my previous analysis of the interview material in Chapter 4 these art works supplement my research by presenting a distinctly contemporary idiom, unconstrained by encryption on paper or electronic displays.

My art works are the result of construction and assemblage. It is important to delineate between *art* and *aesthetic* and my application of these terms. Dewey (1934: 47) stated, 'art is a process of doing, from a producer's standpoint; whereas aesthetic refers to experience (of art) as appreciative, perceiving and enjoying from a consumer's standpoint' (Dewey 1934: 47). Kerr and Darso (2008: 476) define artful, 'as a quality of expanded consciousness that evolves through profound personal experiences, and often facilitated by artistic processes'. The purpose of my art works was as 'a producer' to represent organisational themes; and they were not intended to be aesthetic forms as such.

This form of inquiry has several intrinsic synergies with my research disposition and the evolving nature of organisational studies. The use of collage was sympathetic to the transdisciplinary nature of this sustainability study and matched well with my personal abilities. These aspects are discussed in greater detail in the following sections.

5.1.1.1 Arts-based inquiry and methodological synergies

As set out in Chapter 1, I approached my research as a bricoleur and transdisciplinary researcher; predilections that share several similarities with arts-

based inquiry, mainly their focus on action-orientated change outcomes. Finely (2003) claims that arts-based inquiry is one genre of qualitative inquiry that 'is an action-orientated worldview among qualitative researchers who value inquiry for its usefulness within the community where it originates' (Finley 2003: 281). My research centres on ways to accelerate sustainable procurement in Australian organisations. Additionally, the purpose of transdisciplinary studies as vehicles of societal change bears strong resemblance to what Denzin (2000) refers to as a 'radically ethical aesthetic'.

Self-reflection is a defining characteristic of the transdisciplinary researcher. My bricolages are the outcome of reflective engagement with the approaches of organisations and the perceptions of my research participants. In the same way that Berger and Luckmann (1966: 211) propose 'reality is a social construction where the object is society as part of a human world'. My collages are artefacts of my analysis and self-reflection, expressing the adoption of sustainable procurement in organisations and therefore social constructions open to multiple interpretations by multiple viewers.

My artworks were the result of prolonged engagement (Lincoln & Guba 1985) with the subject material and with some of the research participants over a considerable time. Bathurst *et al.* (2008: 522) paraphrase Dewey by suggesting, 'what is required is that the artist reflects on life experiences, and through a process of inner engagement with feelings and perceptions, distils them into an expression: a work of art'..

Artistic expression cannot occur without a sustained period of compression (Bathurst et al. 2008; Dewey 1934). This is very similar to one of Lincoln and Guba's (1985) constructs for validity: prolonged engagement with the research material and the subjects. My phase of compression was over an extended period of time with the research participants as my peers in introducing sustainable procurement in organisations and through the detailed interview process and reflection on it. Finley (2003) observes that it is the researcher's expert knowledge 'that offers her or his understandings of phenomena'. Through this close proximity coupled with my experience as a practitioner I gained a deeper understanding and insight into the organisational cases than would have been accessible solely through the interview process.

While my bricolages may appear to be spontaneous expressions they are the outcome of prolonged engagement and self-reflection; 'a construction in time, not an instantaneous emission' (Dewey 1934: 65). Dewey (1934: 70) notes that:

> ... the spontaneous in art is complete absorption in subject matter that is fresh, the freshness of which holds and sustains emotion. Reflection even long and arduous reflection may have been concerned in the generation of the material. But an expression will nevertheless manifest spontaneity if that matter has been vitally taken up into a present experience.

Bathurst *et al.* (2008: 522) commenting on Dewey claim 'that it is what we do with our emotional responses that forms the material form which art is developed, Hence an artistic approach to life's experience, maximised by reflectivity and the deliberate exploration of spontaneous feelings'. I have given a brief overview of art-based inquiry as a whole and now outline its application to organisational studies.

5.1.2 Arts-based inquiry and organisational studies

Arts-based typologies are also becoming more prominent in organisational studies and 'could have an important and positive impact on future management development, business and society' (Kerr & Darso 2008: 476). Alder (2006: 487-488) suggests that the time is right for the cross-fertilisation of the arts and leadership, that twenty-first century business is 'anything but usual' and that is why 'companies are including artists and artistic processes in their approaches to strategic and day to day management skills'. Arts-based organisational research rests on the literature of aesthetics and organisation studies. Strati (1992: 569), one of the seminal authors in this field suggests 'the aesthetic understanding of organisational life is an epistemological metaphor, a form of knowledge diverse from those based on analytical methods'. The 'texture' of the aesthetic of an organisation is another quality which Gherardi and Strati (1990: 605) refer to as 'a socially invisible artefact that has to be read from with the interpretation made of it by organizational actors'. Practices such as organisational purchasing can be construed as part of the 'texture' of the organisation. Unlike Strati and Gherardi, I did not study organisational artefacts or aesthetics, but, I used this technique to elucidate and express sustainable procurement as part of the 'texture' of the organisation through individual cases.

Another way to conceptualise the themes raised by interview participants is through parts of the organisation or organisational fragments. Strati (1992: 180) suggests that 'during empirical study researchers "see" certain fragments of organisational life, not details of it … and sometimes construct icons'. Aesthetic experience is a type of sense experience that enables us to understand the organisation as a whole (Strati 1992). 'Researchers have their own direct experience of aesthetic dimension of the organisation, they collect organizational facts of an aesthetic nature and have their own aesthetic experiences of the relationship with the interlocutor' (Strati 1992: 576). In my case I collected facts about organisations' experiences of sustainable procurement as an organisational fragment.

5.1.2.1 Collage as a medium

Dewey (1934: 195) states 'every work of art has a particular medium by which, among other things, the qualitative pervasive whole is carried'. The medium I selected as the most appropriate for my purpose was collage, which originates from the French verb 'coller' meaning to stick, and has a long tradition as an art form. It refers to a genre of art in which 'found materials that are either natural or made are cut up and pasted on some sort of flat surface' (Butler-Kisber 2008: 266). Butler-Kisber (2008: 257) claims 'the intention of the cubists in using collage was to challenge the long held conventions of painting, oppose the 19th century notion of a single reality or truth by portraying multiple realities, and merge art with the more banal, everyday aspects of life as a critique of the elitist nature of high art'. Especially as a research bricoleur, I found collage was the most complementary medium. Employing collage as a medium, the next section describes my journey in applying this technique.

5.1.3 A bricoleur's journey

Building on my role as a research bricoleur described in Section 1.4.1 I now describe the procedures used to create the bricolages, as an alternative method to communication and to build knowledge. My experience and motivation for employing arts-based inquiry is similar to Kerosuo (2007) who studied the care of twenty-six patients during an organisational change project in health care. She suggests 'we gain access to emotional engagement with the research subject through art and aesthetics in organisational ethnographies' (Kerosuo 2007: 56). I outline my journey by referring in parts to Kerosuo and some of her decisions and reflections.

Like Kerosuo (2007), I was actively engaged with organisations as participants in change to accelerate the adoption of sustainable procurement. Kerosuo (2007)

claims 'emotional engagement with the research subject is an important part of constituting the research subject in complex organization'. Weber (2008) notes 'artistic expression taps into and reveals aspects of the self and puts us in closer touch with how we really feel and look and act'. I was engaged emotionally with organisations ethnographies through art, which Kerosuo (2007) claims is a form of making sense and searching for meaning.

Principally, arts-based expression offered a supplementary form of analysis and representation when I felt that words has exhausted their usefulness. These artworks with a combination of images provided an 'all at once ness' (Eisner 1995: 1) in a single manifestation. Weber (2008) proposes 'arts-related images in research can capture the *ineffable* the hard to put into words and images literally help us adopt someone else's gaze, and borrow their experience for a moment'. She continues that 'the more visual detail that is provided about the context and phenomenon being investigated, the better able the audience is to judge how it may or may not apply to its own situation' (Weber 2008: 45). Images and objects were ideal communication vehicles especially when augmented by textural forms.

> It is this ability of the image to convey multiple messages, to pose questions, and to point to both abstract and concrete thoughts in so economical a fashion that makes image-based media highly appropriate for communication of academic knowledge (Weber 2008: 43).

While my bricolages were spontaneous expressions, the process I used was planned and consistent. I took particular care to restrict all the collages to a uniform size, building on a base of approximately A5 grey recycled cardboard. Each collage is also annotated with the case identifier, for example G4, which corresponds with the classification of case studies detailed in Section 4.3.1.

Each bricolage is intended to capture the quintessential elements of each case. I was very deliberate in my selection of the objects and images to compose each case. These objects and images are metaphors.

> In essence the creator works by reviewing different images and then selecting ones or pieces of some that resonate with or feel like the particular focus. It is useful to work conceptually rather than literally choosing images that stand metaphorically for an idea (Butler-Kisber 2008: 270).

In some instances, I would wait a few days to complete an artwork, until the pertinent object or image appeared to finish the case. The models represent my interpretation of major themes at a point in time. They were not reworked later because I sought to capture the *originality* and *freshness* of the moment and first impressions after the initial case analysis. 'The ambiguity that remains present in collage provides a way of expressing the said and the unsaid and allows for multiple avenues of interpretation and greater accessibility' (Butler-Kisber 2008: 268).

Being a thesis centred on sustainability, all images, objects and materials used to compose the models were *found* either recycled or reused and included photos and images from existing magazines and newspapers, small toys and remnant paraphernalia frequently found around a house with children. While the materials were *found objects,* the images were also intended to be commonplace and easily recognisable. Butler-Kisber (2008: 268) claims 'collage reflects the very way we see the world with objects being given meaning not from something within themselves, but rather through the way we perceive they stand in relation to one another'. This infers the way in which elements and image juxtapose each other.

My artworks became part of qualitative analysis procedure, which was not conceived at the outset of the research design. I started building models intuitively, without prior knowledge of the existing literature on arts in qualitative analysis, until during the write-up phase. To me it just appeared to be a natural response, providing an additional vehicle for personal expression. Routinely, I would complete the case memo, followed by a one-page dot-point synopsis of the case, and then build the three-dimensional representation of the dominant themes while fresh in my mind. Butler-Kisber (2008: 268) suggests that:

> ...collage can contribute to qualitative research in several profound ways. The potentially evocative power of art forms, in particular visual ones, produces a sensory or embodied response that can help the viewer/responder generate meanings in very concrete ways.

Just as the writing process undergoes a number of interactions in the analytic process, becoming more succinct and clear, the same is true for collage. Butler-Kisber (2008: 269) summarises the process below.

> The collage process goes through a number of iterations before the images are actually glued into place, but it results in a metaphorical product that is then subject to or available for different responses,

providing alternate ways of interpreting both conscious and unconscious ideas.

Butler-Kisber (2008) suggests three main approaches for using collages although she emphasises there may be others, including collage as a memoing/reflective process, collage as a conceptualising approach, and an as elicitation for writing or discussion. I used collage as a representational medium to elucidate themes that emerged from my analytic processes.

Like Kerosuo (2007), I also, partitioned my research work and artistic pursuits; for me artful creation is 'part of my personal life'. Echoing the same sentiment as Kerosuo 'this artwork represents my experiences in the field that I did not consider appropriate or important to reflect on during the fieldwork' (Kerosuo 2007: 56). I was unaware at that time of creating collages that this form of analysis was a valid representation of knowledge and an appropriate and acceptable method of academic research with an accompanying literature. Additionally, for me, subconsciously it was also a way of separating the fragments of my former profession as an architect to differentiate myself as a sustainability scholar.

In conclusion, arts-based inquiry offers organisational research several complementary features. It engages multiple audiences in different 'ways of seeing' and engaging with research. It leads the participant through the door of the organisational research to explore fragments of organisational life expressed by images and objects as metaphors. In my case, I expressed the approaches of Australian organisations adopting sustainable procurement. Through my bricolages I open the discourse between art, transdisciplinarity and sustainability, using the medium of collage as a language. As a research bricoleur this form of inquiry was a harmonious partner to my mixed-methods methodology and transdisciplinary research. Additionally I was comfortable and proficient in the application of collage. Butler-Kisber (2008: 273) recommends 'that because the analytic and representational potential of collage is so powerful that no one should shy away form exploring this avenue if it seems appropriate'. This technique delivers a number of opportunities to future researchers; it is a contemporary form, speaks a universal language that is accessible and novel. The next part of this chapter showcases my artworks.

5.1.4 Art works as collages

This first part of this chapter introduced arts-based inquiry as a complementary analysis technique by outlining the current literature and my application of the

method. This section presents photographs of the seventeen organisational cases as bricolages accompanied by a short written description.

5.1.4.1   G1 Standardisation through systems and processes

In combination with an initial focus on greener office buildings establishing EMSs was the impetus for sustainable procurement with elements related to this practice hanging off an EMS. As part of this systematised approach the organisation started with establishing environmental specifications for contracts to be implemented across a number of organisations as part of a large program. Elements of sustainable procurement including specifications hung off the EMS.
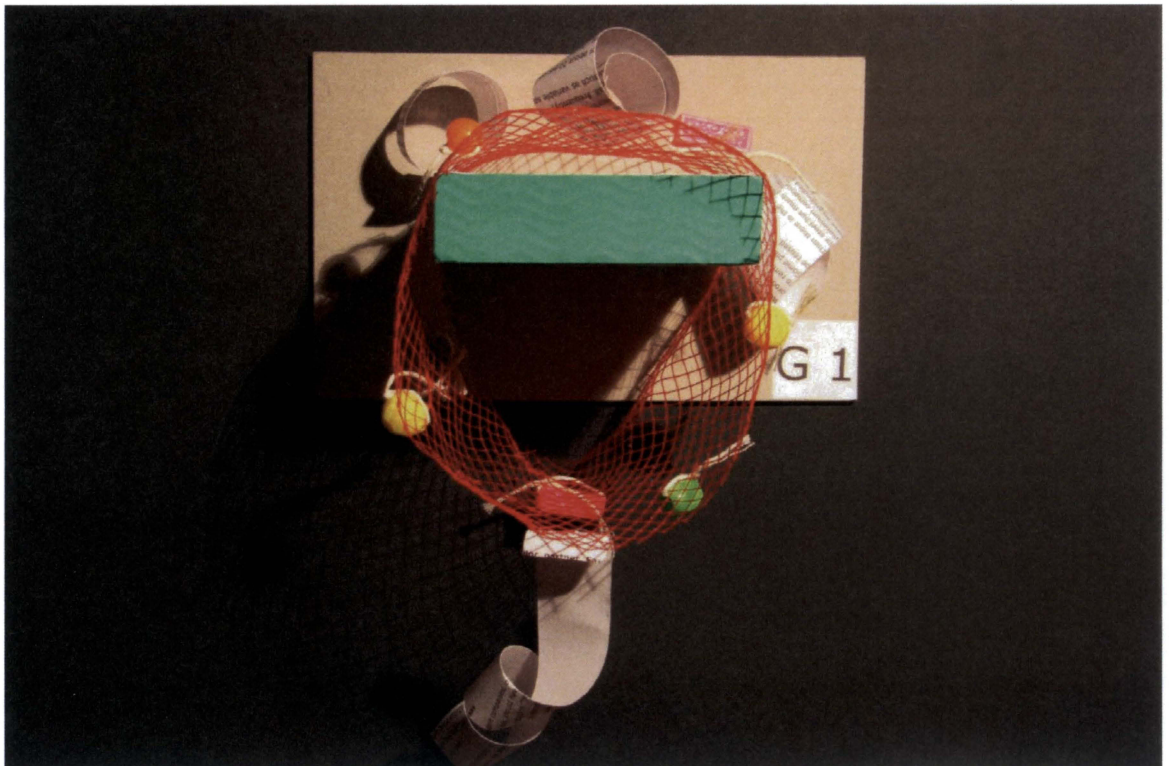
5.1.4.2 G2 Guided support and communication

This organisations administers a program is based on trust and communication to 'encourage green products not the greenest' that engages a broad range of stakeholders and actors around green purchasing as the jewel in the crown. It is 'a behavioural change program meaning that it's our belief that it is people within organisations that make purchasing decisions'. Its focus is to help people and demonstrate 'a really practical way they are able to demonstrate leadership back to their community'. Here there were multiple actors that were united by this collaborative program as the jewel in a crown.

5.1.4.3 G3 Global sustainable outcomes through local practice

This organisation shares information by creating 'a patch work of good practice', particularly at the local level'. Sustainable procurement is clearly understood and communicated as environmental, social and economic considerations because 'unless we can capture those benefits (social) as well we are only getting at the maximum two thirds of the three part set that we decided made up sustainable procurement'. The program aims to raise performance across the sector and establish relationships with suppliers to make this effective transition. Clearly an unambiguously sustainable procurement is understood as threefold social, environmental and economic overlaid on the current patch work of good practice.

5.1.4.4   G4 Delivering on the rhetoric

Reputation is a key driver of sustainable procurement. This interview participant observed that 'there is a gap between espoused values of organisations and actually what is happening' with some window dressing and in 'some cases it's a veil of smoke and mirrors'. Companies were using sustainable procurement as a form of 'branding and window dressing'. The success of sustainable procurement is linked closely to support from the finance director and ideally a champion in that unit.

5.1.4.5 G5 Between the bookends of purchasers and producers

This organisation sees their role in sustainable procurement as one of capacity building in the purchasing community. It's about approaching the issue from both ends of the spectrum 'helping manufacturers and producers to provide the right information with their products' to 'enable a more sustainable consumption and production pattern". Their focus is on products and tools for the purchasing community based on life cycle assessment (LCA) techniques to mitigate 'the environmental impacts of a life cycle of a product or service'.

5.1.4.6 C6 Cost is in the driver's seat

Procurement decisions in this organisation are determined ultimately by cost: 'the management directive is quite clear that we won't wear a cost penalty for environmentally preferable products but we do have a preference for environmentally preferable products'. Sustainable procurement was started by a new director who was passionate about environmental issues. The interview participant acknowledged that middle management is the 'fly in the ointment' and can cause roadblocks occur due to lack of commitment.

5.1.4.7 C7 Brand in the balance

Heavily aligned to protecting their brand this organisation's focus is ethical purchasing where the country of origin of raw materials and manufacture is tied to 'concept of brand risk' and this extends to promotional items and indirect services. 'If the company brand is stamped on a t shirt being produced in a factory which suddenly been picketed by an NGO or someone like that and they happen to be making our t shirts at the time the news crew are there it doesn't look good'. CSR is one of the key pillars of their business strategy where 'one stream of that is procurement'. Ethical sourcing is complex; it is not 'a cookie cutter approach, you can't just download a solution to ethical procurement that is going to fit your organisation'.

5.1.4.8 C8 A packaging sandwich

As signatories to the national packaging covenant (Covenant) this appears to be the impetus for the majority of this organisation's sustainability work in procurement coupled with the establishment of a sustainability taskforce endorsed by the CEO. The Covenant is their default environmental purchasing system. Contracts with major suppliers exist 'within a co-regulatory environment of the Covenant' and this provides the dialogue 'to look at how the environmental performance of the packaging that we use can be improved'. As joint participants in the Covenant 'we don't actually have some environmental clauses covering the way in which they operate' with suppliers. Strategic alliances are formed with suppliers to deliver joint programs.

5.1.4.9   C 9 Recycle your way around

This company were pioneers in a recycled product range 'without knowing the wordings to describe it'. The product range emerged out of necessity given the cost of virgin material spurred by the oil crisis in the 1990s and competitive tendering by government: environmental considerations were a competitive advantage. 'I was really interested in the environmental area but didn't know much about it. It was a way of transitioning'. At the time there was a perception that 'using waste it was just not acceptable and we didn't have the language to talk about it at that time'.
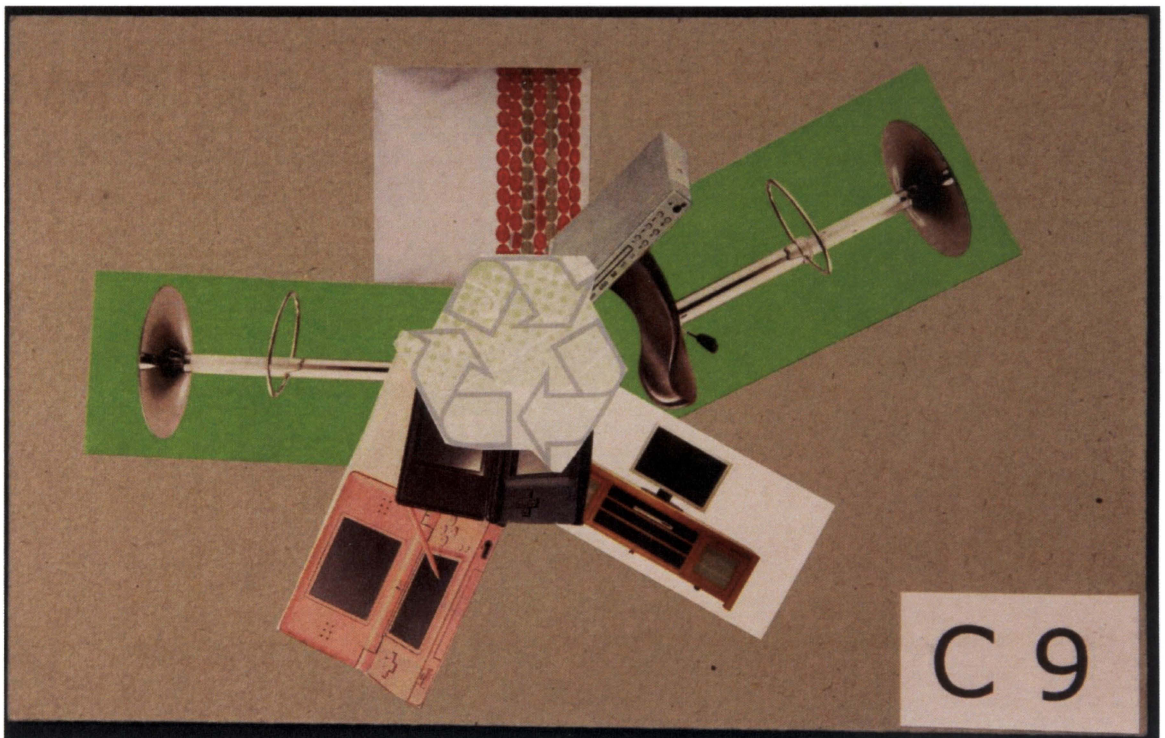
5.1.4.10 C10 Sustainable procurement steered from the top

Sustainability is entrenched in the culture and structure of the organisation with 'a board level CSR committee that's chaired by the Chairman and we have what's called a CSR forum which is made of heads of department'. They embraced sustainability as a way 'to redefine the business so that in the eyes of both shareholders and consumers we kind of had a clear place in the market' and 'broaden its appeal to younger consumers'. As a means of competitive advantage they 'needed to develop a model that kind of gave sustainability added values but in a way that our competitors would struggle to match ...' They sought to use the sustainable attributes of products, mainly focusing on food and clothing as a competitive advantage convinced 'it is very much is about unique selling hypotheses to us'
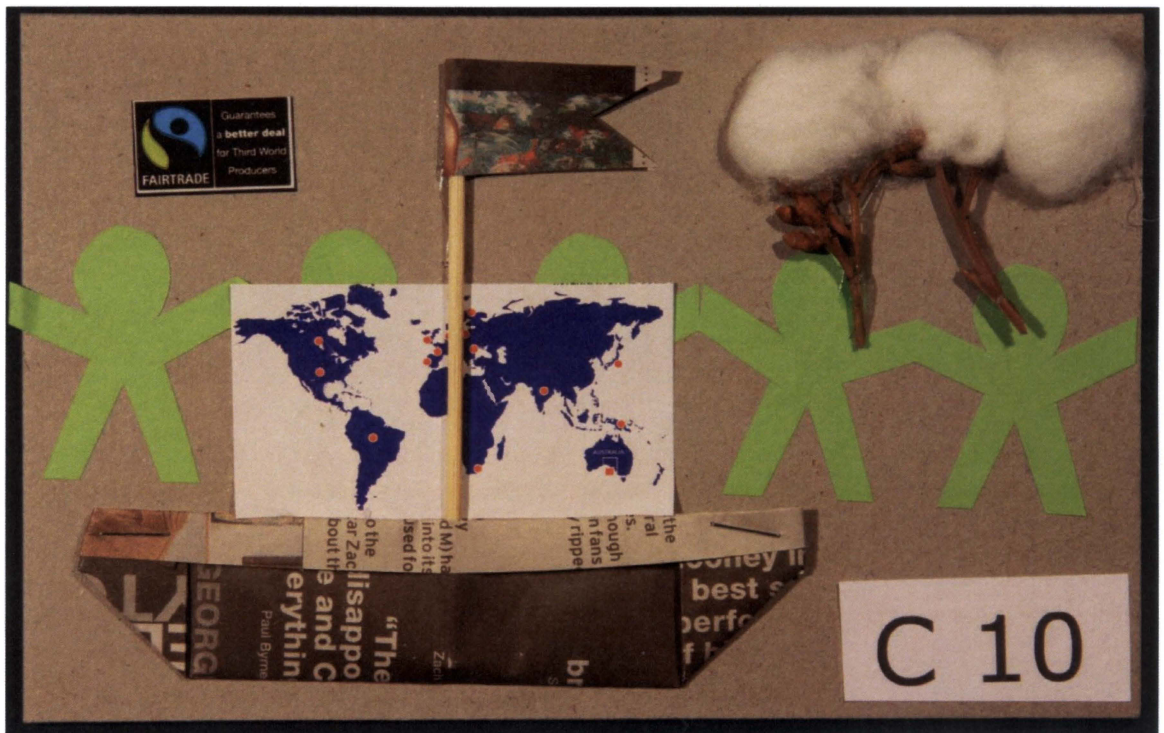
5.1.4.11 R11 Leading the pack

This company's focus is 'sustainable supply chain management which is about screening of companies, not screening of products'. Reputation and maintaining their strong performance in external indices was a major motivator for this initiative. 'We were scoring and will continue to score very highly in Dow Jones Sustainability Index … and we were aware that our lowest area of score was supply chain management, so that's probably why corporate responsibility kicked it off… We're very committed to maintaining that Dow Jones'.
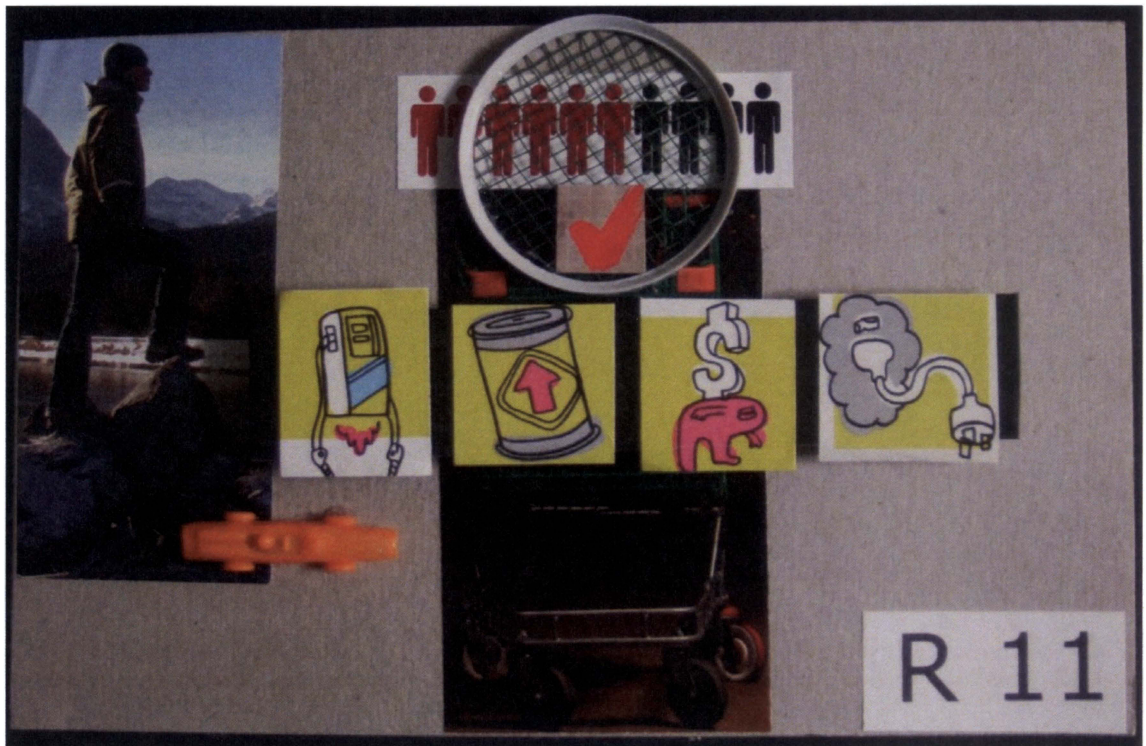
5.1.4.12 R12 Ready for action

Clearly this organisation is on the cusp of a wave with a suite of tools refined and tested 'that it is now a measurable component of quarterly performance for the team'. The organisation has got 'a number of tools now so this is gaining momentum as a business as usual process'. It plans to 'continue this sort of work at the pointy end - where it is going, what does it mean, who else is doing' what are they doing what can we do and bring it back in and true success to improve our sustainability in performance has to be demonstrated and executed right across the organisation'.

> It's not worth the powerpoint presentation if doesn't translate into practical execution so you have got to take a high level of intent when you actually build it then prove to me as a sceptic why I should do it and what value is that going to create.

5.1.4.13 R13 Innovate for environmental solutions at work and home

Indirectly reputation and indices are sustainability drivers for this organisation. 'Whist the company does not participate it perceives compliance with external rating systems necessary to its reputation and in some ways as practice for some time in the future'. Sustainability is a procurement consideration. 'We have a framework to do procurement and that framework states what factors we will take into consideration etc. and one of the factors we take into account is sustainability issues'. Innovative solutions are linked to the level of awareness if there were no environmental awareness a staff member would not be aware of the possibilities, which 'just shows you the advantage of educating your staff'.
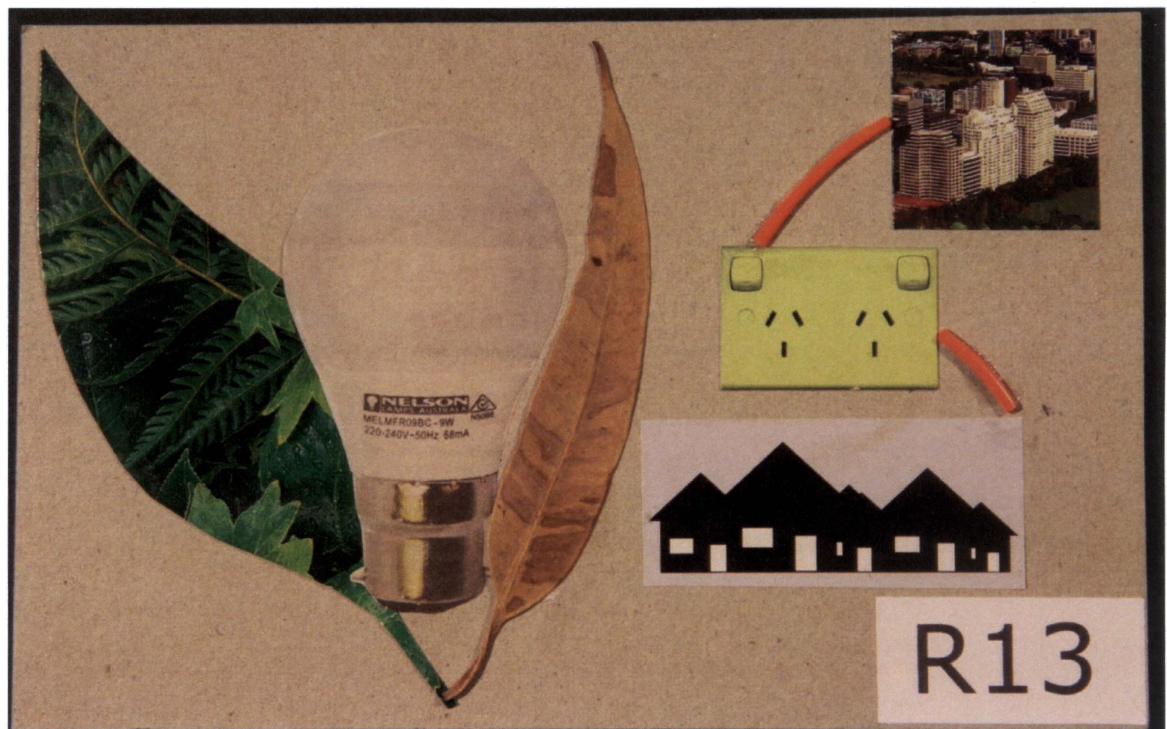
5.1.4.14 R14& R15 Risk management is the key to global sustainability

Reducing risk is fundamental 'reducing risk, reducing risk on community, reducing risk for our customers, is avoiding the obvious one when you think about it'. They 'price risk and assess risk, thirdly we manage our costs, so we aim to be an efficient organisation, and....we reduce risk in society'. Commitment to sustainability is embedded in their business principles: 'our commitment to sustainability or sustainable development, is not there for the whim .... but it is in fact, a core business strategy, because it's effectively a value add to the four planks of our purpose'.
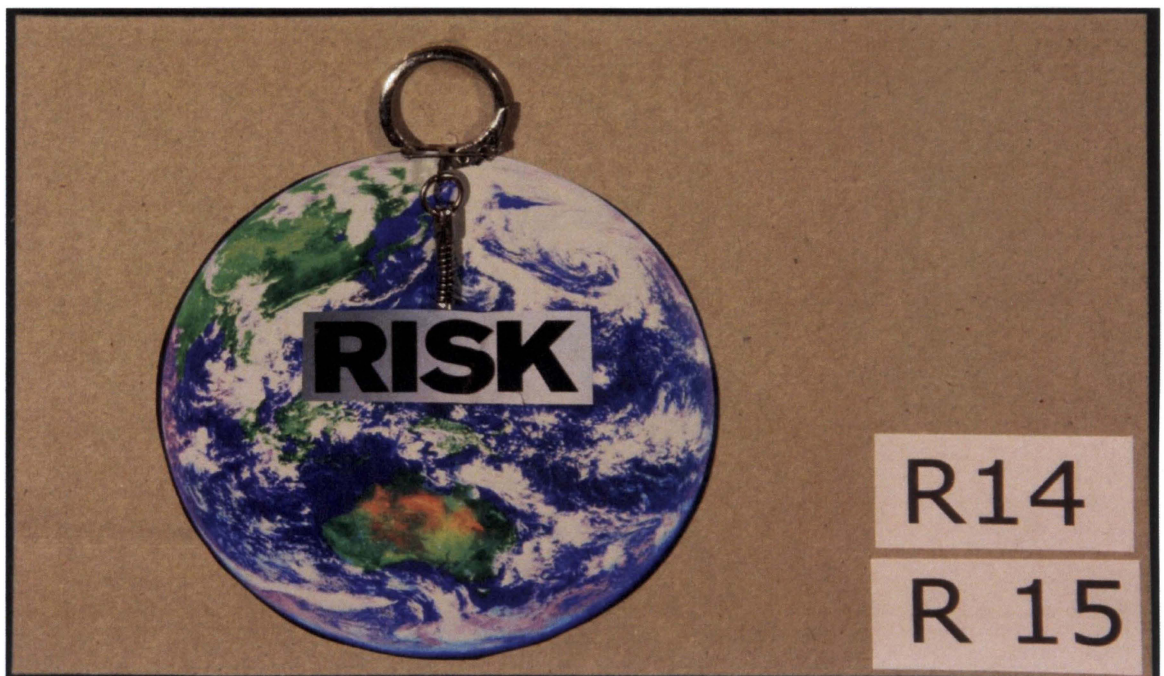
5.1.4.15 R 16 A jigsaw of intermeshed approaches

This organisation is approaching sustainable procurement from a wide range of intermeshed approaches. Examining the organisation's environmental footprint and issues raised in a staff environmental network 'lead to procurement getting on to the CSR agenda and it is firmly there in place'. Then the first step was to 'put in place an environmental procurement policy'. While occupational health and safety were on the agenda the organisation only started to focus on the social side of procurement in the last 12 to 18 months. 'Risk and reputation management and that's... they are still fairly significant drivers of the (organisation)'.
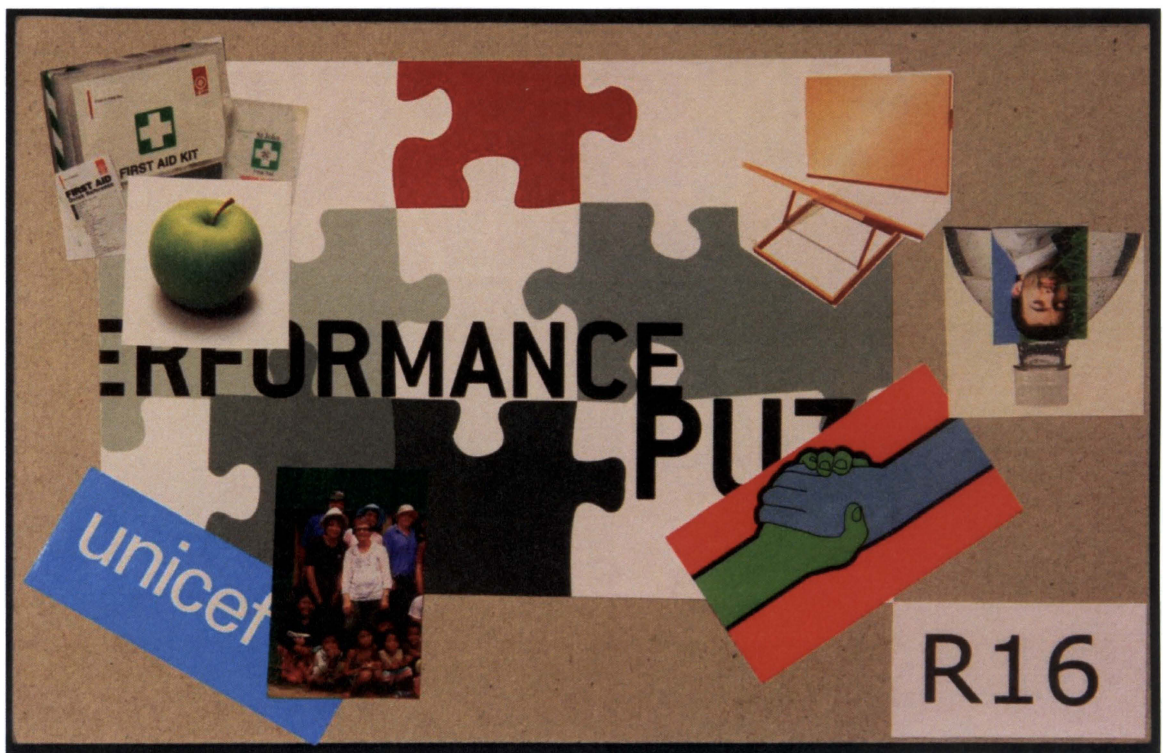
5.1.4.16 R17 Central control to protect the business

Clearly and explicitly their environmental commitment is profit driven and not reputational. From the outset environmental aspects delivered cost savings and this 'was never altruistic in terms of being done on environmental grounds there was definitely a very big economic part to it'. Their vision is 'about enhancing the sustainability and profitability of its customers'. Performance is measured throughout the supply chain and again 'sustainability and profit go hand in hand'. Their focus is predominantly on environmental considerations. 'I guess presenting sustainable purchasing as being a new framework within which you have to do all these things, we would say, well not really, you have to focus mostly on environmental'.

5.1.5 Summary

This arts-based inquiry perspective of sustainable procurement makes significant contribution towards transdisciplinary research and delivering alternative methods of engaging audiences with research findings. While the results and analysis of the qualitative material in Chapter 4 discuss commonalities, this anthology of bricolages acknowledges individual approaches by organisations as unique across the qualitative cohort. It demonstrates a pioneering way of expressing paradox and complexity and recognises emotive responses to research, when words appear to be insufficient alone. It presents a novel and innovative method of engagement with multiple audiences beyond written forms and language.

'(sustainable procurement) is a really practical way (organisations) can demonstrate that they are doing something about sustainability' (Interview participant).

Chapter 6.   Discussion – Pathways to sustainable procurement

6.1 Towards a theoretical scaffold for sustainable procurement

This thesis explores mechanisms and organisational determinants to institutionalise sustainable procurement as a normative practice in Australian organisations. To embed this practice, transitions will need to take place in two domains: within individual organisations and between organisations. This includes internal organisational changes; and instruments to enable the spread of this practice from one organisation to another, as a cohort of Australian organisations. In this chapter, I explain these two perspectives, drawing on the qualitative and quantitative findings presented in chapters 3 and 4 in conjunction with the relevant literature.

While sustainable procurement studies are growing, since the late 1990s several authors have emphasised that accompanying theoretical development has been a limiting factor (Carter & Ellram 1998; Carter & Rogers 2008; Kleindorfer et al. 2005; Sarkis 2001b; Seuring & Müller 2008; Zsidisin & Siferd 2001). Seuring and Muller (2008) suggested borrowing from strategic management (Seuring & Müller 2008:1706). To address this deficiency, I applied a theoretical framework composed of strategic management theories, described in Section 2.4, which has been utilised by corporate sustainability studies.

The theoretical frameworks I applied include institutional theory (DiMaggio & Powell 1983; Meyer & Rowan 1999), diffusion of innovations (DoI) theory (Rogers 2003), the Natural Resource Based View (NRBV) (Hart 1995), stakeholder theory (Clarkson 1995; Donaldson & Preston 1995) and were supplemented by the green purchasing literature. As previously outlined in sections 2.1.2 and 2.2, there are relatively few scholarly studies of Australian sustainable procurement (Keating et al. 2008); therefore, I discuss and compare my research findings in this thesis primarily with international examples.

Hart's (1995) NRBV is helpful for comprehending the current context of sustainable procurement. I selected Hart's (1995) theory (see Section 2.7) as the main theoretical base because it has several noteworthy applications to my research. Hart's three NRBV strategies can be applied to trace the progression from green

purchasing to incorporating social considerations, culminating in sustainable procurement. Further, Hart's (1995) conceptual framework delineates the influence of internal determinants and external relationships, which was particularly applicable to examine the experience of Australian organisations. Additionally, Hart's framework, displayed below in Figure 21, acts as a theoretical scaffold to overlay the green purchasing literature, stakeholder theory, diffusion of innovation and the sustainable organisations literature to discuss my findings.
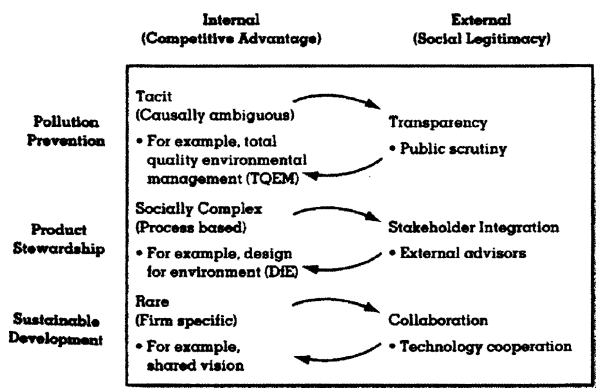
Figure 21 Hart's model of sustained competitive advantage (Hart 1995: 999)

My research results suggest that sustainable procurement forms part of implementing corporate sustainability; therefore, it is appropriate to apply Hart's framework to describe sustainable procurement. A short outline of the three strategies - pollution prevention, product stewardship and sustainable development and their application to sustainable procurement follows and is displayed in Figure 22.

Applied to sustainable procurement, the phase of 'pollution prevention' is analogous to eco-efficiency and ecological responsiveness (Bansal & Roth 2000), as a reactive response (Wartick and Cochran, 1985 (Hunt & Auster 1990), 'resulting in a cost advantage relative to competitors' (Hart 1995: 992). Continuous improvement frameworks like environmental management systems and public reporting form part of pollution prevention. Green purchasing also commences with this strategy, but there is a trade-off between green purchases and cost containment.

Environmental purchasing in the next strategy of 'product stewardship' focuses on product attributes and supplier selection, including environmental performance of suppliers and green products (Lewis & Gerstakis 2001). In the same way, this strategy integrates the 'voice of environment' (Hart 1995: 993) into manufacturing processes and external stakeholders are consulted in product and supplier selection processes (Maignan et al. 2002; Roberts 2003). This entails identifying and

engaging with stakeholders, and frequently, the establishment of working parties and the inception of relationships with salient stakeholders. In the 'sustainable development' strategy, sustainable procurement is integrated into the organisation's policies and processes as a contribution to 'social and economic development, while simultaneously ensuring the integrity of ecological systems'. There is equal attention given to the environmental and social criteria of product selection, including supply-chain auditing. Partnerships and closer relationships are forged in this phase, particularly with suppliers, as the platform for innovation.

	Internal Competitive Advantage	External Social legitimacy
Pollution prevention	Green purchasing	
Product stewardship	Green purchasing	Ethical purchasing Stakeholder theory
Sustainable development	SUSTAINABLE PROCUREMENT	Collaboration Innovation
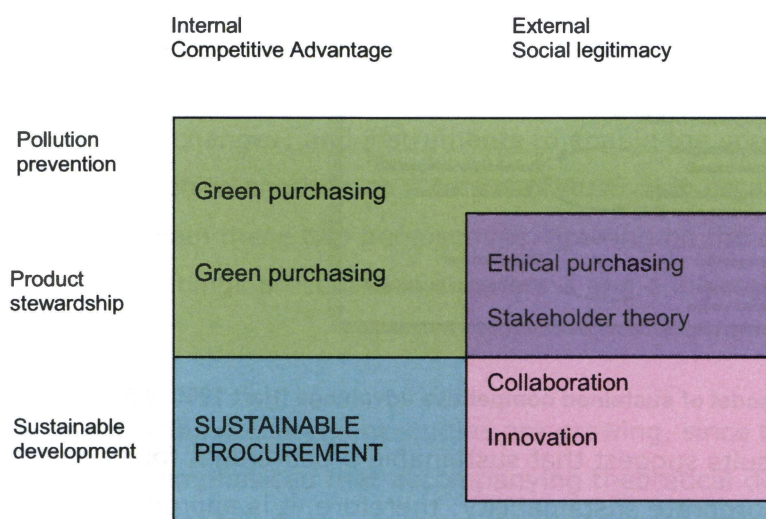
Figure 22 Interplay of theories that explain organisational adoption (adapted from Hart 1995: 999)

In this chapter I discuss the results from both research components in association with the management theories previously outlined in this section. In Section 6.4, I utilise the green procurement literature to discuss the influence of internal determinants, including organisational size and purchasing practices, before examining the effect of separate factors that contribute towards an organisational culture receptive to adoption. I apply stakeholder theory in Section 6.6 to explore the relationship between stakeholder salience and organisational culture and I conclude this chapter in Section 6.7 by presenting a phase model for sustainable procurement, which articulates stages that range from reactive approaches to exemplary practice in sustainable procurement. Before discussing the internal and interorganisational domains of inquiry, I start by presenting how sustainable procurement is conceptualised by Australian organisations and the current state of adoption.

6.2 Conceptualisation of sustainable procurement

Sustainable procurement may be conceptualised as part of corporate sustainability (Carter & Jennings 2004). In this section I address the research question how is sustainable procurement conceptualised by organisations studied. Interview participants referred to it as, 'one of the pillars' of CSR and part of the path 'towards corporate sustainability'. However, results from the interview participants in Section 4.3.2 also reveal that sustainable procurement is currently understood and practised predominantly as 'environmental purchasing' by the majority of Australian organisations.

This conceptualisation aligns with earlier green purchasing studies (Carter & Carter 1998; Carter & Ellram 1998; Carter & Narasimhan 2000; Green et al. 1996; Handfield et al. 2002; Min & Galle 1997, 2001; Zsidisin & Siferd 2001). By exception, only a few participants in the qualitative sample practised sustainable procurement incorporating social considerations (Carter & Jennings 2004; Carter & Jennings 2002b; Drumwright 1994; Maignan et al. 2002). These findings suggest that most Australian organisations are overlooking the 'multi-dimensional relationship' approach of sustainable procurement, that incorporate environmental, social and economic considerations (Australian Procurement and Construction Council 2007; DEFRA 2006; UNEP 2001) and the potentially benefits to their reputation and improved competitive advantage (Hart 1995) from triple bottom line response (Elkington 1997) to procurement.

A point of departure from this 'green' conceptualisation were findings from interview participants representing organisations with head offices outside Australia and those with global supply chains. These organisations were shown to incorporate the social as well as the environmental considerations into their purchasing decisions. My findings align with Bansal (2005) and Bansal and Roth (2000), who found organisations with exposure to 'foreign' customs transfer this experience into their head office operations because they recognise the value of achieving high environmental and social standards.

Interview results also reveal that organisations commence with green purchasing before progressing to sustainable procurement, incorporating ethical and socially responsible dimensions. Most organisations agreed that they 'have probably got environmental considerations fairly well built into their processes', although, one participant conceded that they 'haven't sort of taken that step beyond into terms of your impact in the broader community' and the processes are 'not good enough for

human rights and ethical trading issues'. There was also general consensus among participants that embedding the social dimensions required more customisation, which infers a longer timeframe demonstrated by the following quotation: 'It's not a cookie cutter approach; you can't just download a solution to ethical procurement that is going to fit your organisation'.

These findings suggest that the transition from green to sustainable procurement takes more time and requires adaptation of current organisational practices. Another explanation for this transition offered by one participant is that 'environmental supply issues are more tangible than social or economic ones', which implies that awareness training may need to accompany a progression to sustainable procurement.

6.2.1 Adoption in Australian organisations is formative

Results from both data sets show that the adoption of sustainable procurement in Australian organisations is in its formative stages. This section presents results from both research components to answer the question what is the current state of adoption in the organisations studied. Survey findings in Section 3.3.2 show a low level of environmentally sustainable purchasing (ESP) adoption across organisations, which infers that ESP may be sporadic, that environmental sustainability is not considered in every purchasing decision or it may only be applied in specific circumstances. ESP adoption increased in proportion to a decrease in number of staff in an organisation, with the highest levels of adoption in organisations of fewer than four employees.

Results in Section 4.3.3 show interview participants described sustainable procurement as 'a really new issue' in Australia and although gaining 'traction' with a wide range of stakeholders, most participants agreed that their organisations were 'in the process of integrating sustainability into their supply chain'. Together the combined findings indicate that sustainable procurement is an emerging practice in Australian organisations.

6.2.2 Diffusing sustainable procurement across Australian organisations

Having outlined my framework of theories and the current context of sustainable procurement in organisations I now apply theoretical perspectives that explain the spread of this emerging practice across Australian organisations as a group. These theories include DoI and institutional theories.

6.2.3 Sustainable procurement as an organisational innovation

I commence by discussing survey results that related to DoI, examining the types of decisions attributed to sustainable procurement, the stages of implementation, and sustainable procurement as an organisational innovation. This section addresses a number of research questions centred on Rogers' frameworks, the types innovation decisions, stages of implementation and when the critical mass of organisations adopt ESP.

Survey results in Section 3.3.7 reveal that sustainable procurement is predominantly an optional decision (Rogers 2003), where business units have the freedom to carry out ESP as long as they meet targets and adhere to policies. However, Rogers (2003) found the fastest rate of adoption occurs from authority decisions. The high proportion of organisations that reported sustainable procurement was an optional decision is therefore likely to account for a slower rate of adoption across the entire survey sample (Rogers 2003). The fact that sustainable procurement was found to be voluntary suggests the rate of adoption to be influenced by other factors, which are discussed in subsequent sections, including internal determinants and stakeholder relationships.

Examining sustainable procurement as an organisational innovation outlined in Section 2.5.5.3 provides an insight into the stages of implementation. In combination with strong business unit autonomy, results in Section 3.3.8 show that most organisations were in the 'initiation phase' of ESP adoption (Rogers 2003) and identified strongly with the matching stage, suggesting that at the time of the survey they were in a process of assessing the organisational fit of ESP as a potential initiative.

Findings in Section 3.3.8 also show most organisations registered an interest in ESP in two non-consecutive years, an initial group of organisations indicating an interest in 2000 and another group of the same number of organisations in 2006. The early interest in 2000 may be explained by the establishment of ECO-Buy, the local government green purchasing program in Victoria (previously discussed in Section 2.1.2). The second peak in interest in ESP may be explained by the interview findings (although different sample audiences), which suggest that most organisations started CSR activities in 2000. Following CSR implementation, this group of organisations were made aware of anomalies in their purchasing practices and registered interest in ESP in 2006. From initial interest in 2000 and 2006 results in Section 3.3.8 show that most organisations were buying environmentally

sustainable products in 2004 and conducting trials in ESP in 2005. This lag concurs with Rogers' (2003: 422) assertion that 'a performance gap can trigger the innovation process where a performance gap is the discrepancy between an organisation's expectations and its actual performance'. These findings also lend support to the hypothesis that sustainable procurement forms part of the CSR business model.

Another explanation for this organisational lag between interest and adoption may be explained by economic factors and market capacity. Some interview participants' expectations of the availability of sustainable alternatives were not apparent in tender responses they received from the marketplace. On this barrier one participant commented; 'I think the Australian marketplace is another one though, especially with regard to the advancement of certain commodities like bio diesel' (See Section 4.3.5.4). These findings align with Bessant and Tidd (2007: 325), who suggest an effective innovation method is to 'understand how technology, markets and society co evolve through a process of negotiation, consultation and experimentation with new ways of doing things'. This comment suggests that the demand for sustainable products may as yet be available in commercial quantities from suppliers.

The cumulative S shaped innovation adoption curve displayed in Section 3.3.9 illustrates the successful diffusion of ESP across the survey cohort by 2010 when the curve reaches its asymptote. Rogers (2003) suggests that at this time the critical mass of adopters will have implemented ESP. Based on the findings from the qualitative sample discussed in Section 4.3.2, which suggest a staged approach (from green to sustainable procurement), I propose that sustainable procurement will be the next practice to diffuse amongst this cohort from 2010, potentially accelerated by the influence of isomorphic mechanisms outlined in the next section.

In conclusion, diffusing sustainable procurement across Australian organisations is contingent on several factors and conditions. This section has examined its path as an organisational innovation and indicates that ESP will be diffused by 2010, it is optional in most business units, forms part of introducing organisational sustainability programs and is currently in its early stages. These findings concur with the literature that found institutional pressures exist in the early stages of corporate sustainable development, because of the ambiguity and significant externalities associated with sustainable development (Bansal 2005). I now discuss

some of the instruments that will contribute towards the institutionalisation of sustainable procurement in Australian organisations.

6.3 Institutionalising sustainable procurement

Institutional pressures which include, mimetic, coercive and normative (described in Section 2.5.1 of the literature review) have the capacity to spread sustainable procurement between organisations (DiMaggio & Powell 1983; Meyer & Rowan 1999). This section addresses research questions examining the mechanisms and enablers that lead to the spread of sustainable procurement explained by institutional theory. Jennings and Zandbergen (1995) argue that the type of institutional pressure influences the rate at which sustainable development practices diffuse among firms. I now discuss the range of institutional forces that appear to be at work in the adoption of sustainable procurement across Australian organisations based on the findings of my empirical studies.

Organisations within an industry sector form strong organisational fields and are subject to the mimetic tendencies as a form of legitimacy (DiMaggio & Powell 1983). Several interview participants referred to the spread of environmental management systems (EMS) adoption across sectors, 'which started with the chemicals and industrial sector, then progressed into well, you know some of the mineral sector'. Like the introduction of EMS, sustainable procurement has the potential to permeate from one sector to another, spread by mimetic tendencies.

As outlined in Section 4.3.7.4, three of the four participating organisations in one particular industry sector demonstrated strong field cohesion and had formed an alliance to pursue sustainable procurement. Referring to this joint initiative, one organisation commented that it 'will be significant for us, and that will see us working with our peers'. Bansal and Roth (2000) found that firms in fields with high cohesion were less likely to be motivated by competitiveness. These findings suggest that the benefits of sharing information, tools and resources associated with sustainable procurement are of greater priority than their competitive interests in this area.

In line with the views put forward by Bansal and Roth (2000) and DiMaggio and Powell (1983), my findings indicate that the perceived negative images of an industry's ecological impacts across a field were an impetus for isomorphic behaviour. This was found to result in organisations that formed part of an industry sector monitoring each other's ecological responses by collectively managing the

image of the industry sector. One participant singled out the negative images associated with the mining and financial sectors as a motivating force.

> There is no doubt, that a lot of the mining companies and banks have a distinct motivation, their rating in the community is poor and particularly (referring to an organisation); this is their point of difference.

As well as peer organisations, suppliers also constitute a recognised area of institutional life (DiMaggio & Powell 1983). Sections 4.3.6.6 and 4.3.6.7 outline the sustainability requirements placed on suppliers by procuring organisations that have adopted sustainable procurement through frameworks and systems. These include EMS and supplier codes of conduct, incorporating international agreements, which act as coercive instruments in supplier relationships to spread sustainability through the supply chain. The outcome of these 'imposed sustainability requirements' is that sustainability is spread from procurer to supplier, across multiple relationships that may lead supplier organisations to also adopt sustainable procurement. Concurrently, once adopted by supplier organisations, these sustainability requirements are then imposed down the supply chain to their supplier's supplier and so on. My findings concur with Matten and Moon (2008) and Preuss (2009) that compliance with codes and frameworks spreads sustainability among organisations.

In combination, coercive and mimetic tendencies can be used to explain and potentially accelerate broader diffusion of sustainable procurement through numerous supply chains across multiple industry sectors. I now discuss in further detail selected instruments that lead towards coercive isomorphism, starting with EMS.

6.3.1 Environmental management systems as coercive devices

In this section I initially discuss EMS as coercive devices in the context of institutional theory and will discuss them again in Section 6.5.1.4 as part of the internal determinants of sustainable procurement. Environmental purchasing is one of the requirements of an EMS introduction; therefore the spread of these systems across sectors will also influence the rate of green procurement adoption as a precursor to sustainable procurement. This is reflected in the following comments by interview participants:

...now we're seeing ISO 14000 going into the service sector in a big way, so you've got office based organisations worrying about the office paper and stuff...

...so what tends to happen is that once you get it into a sector, it suddenly washes and falls on a major segment of the sector and it goes up and I think, that's probably the same with environmental purchasing for organisations, where there are some sectors it's quite easy to see how market penetration and pull-through happens...

This type of organisational mimicry to adopt an EMS is a form of legitimation that ensures 'peers are less likely to suffer public or financial sanctions because of legitimacy, that is often conferred when many players are engaged in the same practice' (Bansal 2005: 202).

Corporate environmental programs, such as sustainable purchasing, can trigger supplier management systems (Noci 1997), particularly in South East Asia (Rao 2002, 2005). Approaching purchasing from a whole of life perspective is one key process assessed in ISO 14000 (Chen 2005; Handfield et al. 2002). In alignment with Gonzales *et al.* (2008), most organisations interviewed that had implemented an organisational EMS, had subsequently passed these requirements to suppliers.

Results from both methods are somewhat contradictory. Interview findings reveal that supplier size determines the level of documentation for environmental performance required by procuring organisations. Findings in Section 4.3.6.7 show that larger supplier organisations were mandated to have EMS certification, compared to a modified version for smaller sized suppliers. This contrasts with the survey findings in Section 4.3.6.6, which show smaller procuring organisations as leading adopters and more frequently passing on environmental compliance requirements. I would suggest the motivations to monitor their supply chains differ depending on organisational size. As discussed in Section 6.4.1, small organisations are motivated by developing innovative niche products or specialist services, whereas larger ones are motivated by social legitimacy and more predisposed to institutional pressures. These results show that regardless of supplier size, some form of environmental compliance is part of organisations' procurement requirements. As a form of isomorphism my findings align with Darnell *et al.* (2008: 42) who found 'EMS adopters have a stronger probability of improving the environment not just within their organisation, but throughout the network of buyers and suppliers'.

6.3.1.1 Human rights standards

In addition to environmental compliance, there are several frameworks and guidelines used in supplier relationships to administer and audit labour practices in supply chains. Preuss (2009) found that ethical sourcing codes illustrated the importance of isomorphic pressures in the adoption of CSR tools (Preuss 2009). Comments by interview participants suggest these codes are not as established as environmental frameworks. 'International Labour Organization (ILO) standards are the universally accepted benchmark for human work conditions and are set by the International Labour Conference' (Dunphy et al. 2003: 96). One interview participant acknowledged the misalignment between these standards as aspirational codes against the reality of supplier practices.

> ...everybody is comfortable with the total aspirational standard being something based around the ILO[5] core conventions, the difficulty being, that ... they are so bloody aspirational, that nobody gets anywhere near them ... and therefore what people want is a standard somewhere between doing nothing and that...

This comment suggests that frameworks governing social aspects are developing and that, over time, these are likely to be customised like their environmental equivalents, including an EMS, to reflect actual practices and recognise diverse supplier capabilities to encourage adoption. I would suggest that when these frameworks are imposed by more organisations down their supply chains, ethical purchasing requirements will become more commonplace, which is likely to lead to the second wave of sustainable procurement diffusion, discussed previously in Section 6.2.3. These immature frameworks and emerging adoption, along with the findings in Section 4.3.2.4, show that the social components require time to embed and some form of customisation in the way organisations are tailoring EMS requirements discussed in the previous Section 6.3.1. My findings align with Preuss (2009) that the application of ethical purchasing codes is not widespread (Preuss 2009) and offers a further explanation for the low implementation of sustainable procurement.

6.3.1.2 Media attention

Another source of coercive isomorphism is the media, discussed in Section 4.3.5.2. Bansal (2005: 203) found that the media can apply coercive pressure to firms 'to commit to sustainable development by eroding the legitimacy of a firm, if found unacceptable'. Dunphy *et al.* (2003: 97) suggest that 'organisations failing to

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[5] International Labour Organization

comply with environmental and social standards can be targeted and their transgressions given huge publicity'. This was also confirmed in my findings, in which all organisations interviewed were conscious of the potential risks to their reputation associated with negative media publicity. The influence of the media as a stakeholder is also discussed in Section 6.6.1.4 of this chapter.

6.3.1.3 Regulatory influences

Overall, sustainable procurement was found to be an optional practice by organisations, although there are a few exceptions and in alignment with Carter and Jennings (2004) government regulation was not found to be a driver of sustainable procurement. As outlined in Section 2.5.2.1, federal government agencies are mandated to implement sustainability under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and some state government agencies are required to implement an EMS. These requirements are likely to result in agencies adopting sustainable procurement, although this is not a certainty.

The influence of these directives on government organisations is not reflected in the survey findings (see Section 3.3.5.1). Not-for-Profit (NFP) organisations had the highest rate of adoption while government agencies as a cohort recorded the next highest rate of adoption. It is therefore difficult to draw conclusions between these results and the influence of these policy and legislative requirements, as they were not specifically addressed in the survey. However, these results from government organisations are likely to be explained by a mediating factor, the establishment of a program to assist government organisations to execute green purchasing.

Overall, as previously discussed, sustainable procurement is not a regulated process. However, the National Packaging Covenant (Covenant) is a co-regulatory device, which places environmental responsibility on suppliers as a coercive instrument for procuring organisations to meet their recycling targets. As outlined in Section 4.3.6.7, participating organisations, generally corporate brand owners of packaged goods and their suppliers, were both frequently signatories to the Covenant and agreed the targets cannot be achieved without working in partnership with their suppliers. The Covenant embeds environmental packaging requirements as a form of coercive isomorphism on all supply chain participants.

The Covenant framework was found to provide the impetus for some innovative product solutions as proposed by one participant, like 'biodegradable packaging'. In agreement with Porter and van der Linde (1995) that environmental regulation

can trigger innovation and cost savings, one interview participant acknowledged that 'often with good environmental outcomes sustainable outcomes are built in, because we will start to understand how we can reduce packaging as a way of saving cost'. The significance of these types of frameworks is that they establish a minimum standard of performance, which can act as a catalyst for wider diffusion of sustainability awareness and consequently sustainable procurement.

In addition to coercive forces, networks, committees, programs and trade and industry associations also provide vehicles to disperse sustainable procurement practices throughout organisations, through normative isomorphism (DiMaggio & Powell 1983). These are discussed in the next section.

6.3.1.4 Committees and networks within organisations

Several interview participants also referred to sustainability networks within organisations (see Section 4.3.7.5) as vehicles for raising staff awareness. One participant noted that discussion at an environmental committee 'led to procurement getting on to the CSR agenda and it is firmly there in place'. Hanna *et al* (2000) also found a positive relationship between employee involvement and operational and environmental performance. One organisation had 'an environmental champions' network', where staff raised the issues of using recycled paper and recycling used paper. Staff networks have several valuable features: to build consensus and ownership by employees and spread new practices and approaches, like sustainable procurement across workforces.

Industry bodies and professional organisations are frequently referred to as sources of normative isomorphism. However, my results show that only two interview participants mentioned industry bodies as sources of training for procurement professionals. Preuss (2007b: 533) proposed that 'business schools and professional associations could incorporate sustainability issues into their teaching and professional development activities'. These findings highlight the missed opportunity of professional associations to reinforce the spread of sustainable procurement among procurement professionals.

6.3.1.5 Programs and alliances

Networks composed of participants from different sectors, in particular suppliers and NGOs, are also contributing to the spread of sustainable procurement. Bessant and Tidd (2007: 340) suggest 'these linkages between organisations and suppliers may subsequently evolve into a full network, with the participation of secondary and tertiary suppliers'. Findings in Section 4.3.7.5 show that several interview

participants were members of a network that establishes a minimum standard of compliance for labour rights on suppliers. Preuss (2007b) suggests this form of collaboration 'is a gateway to knowledge, not available within an organization that extends innovation to users' products or suppliers'.

Examples of networks discussed in Section 4.3.5.2 reveal NGOs bring an added dimension to alliances. Kong *et al.* (2002: 109) suggested that acting as 'brokers' to business and industry, 'NGOs provide innovative partnerships for product development, labelling and green purchasing'. The contribution of NGOs in my research was found to be twofold: participants highlighted that NGOs bring 'the sort of air of independence' and, secondly, assist in a practical way with know-how and 'tools'. Donaldson and Preston (1995: 86) also found that organisations join in such collaborative activities as stakeholders, based on non-competitive interests.

Government programs also support corporate social responsibility in the market system (Moffat & Auer 2006). Results from both data sets (see sections 3.3.4 and 4.3.7.6) acknowledge a green purchasing program. In a very similar case study Kong *et al.* (2002) noted the success of Japan's green purchasing network, with its product purchasing guidelines and promotional activities including seminars, exhibitions, presentation of success stories, awards and surveys and carrying out public relations activities. Foster and Green (2000: 289) suggest 'that the flow of information and the signals between these different groups is perhaps more important than the links themselves'. In line with this, an Australian green purchasing program previously outlined in Section 2.1.2 assists organisations purchase green products and supports them to introduce behavioural-change programs.

Survey respondents recorded a particular green purchasing program as the single most common program provider (see Section 3.3.4) and concomitant with these results interview participants also identified the same green purchasing program as a current and potential program provider (see Section 4.3.7.6). Overall, while government was the popular partner for survey respondents, only two corporate interview participants identified government as a partner and one as a program provider (see Section 4.3.7.6). As with the survey results, one organisation referred to a program facilitated by the Australian Government. The different composition of sectors represented in the two sample audiences may account for the disparity in results. Interview participants most frequently referred to suppliers as partners and NGOs as other collaborators and program providers. In

combination, the results suggest certain industry sectors are more likely to partner with particular stakeholders. In the survey, the government organisations cohort made up the majority (35.1%) of the sample, which may also account for the dominance of the green purchasing program as a key provider to local government (21.9%). This compares with the qualitative sample, where government collectively represented only a relatively small proportion (19.5%) of the sample and the remainder were corporate organisations, although the government participants predominantly took part in government-facilitated programs. The inference that may be drawn from these findings is that government typically partners with government programs while corporate firms more frequently partner with NGOs.

In summary, the first part of this chapter has outlined mechanisms and devices that support the spread of sustainable procurement across Australian organisations through the perspectives of diffusion of innovations theory and institutional theory. Across both research samples, the level of sustainable procurement adoption was found to be low and typically practised as environmentally sustainable purchasing. Survey results indicate that, by 2010, ESP will be embedded by the critical mass of organisations in the sample. Results from the qualitative component indicate that organisations characteristically embark on green purchasing before progressing to sustainable procurement. I propose that sustainable procurement will be the next organisational innovation to diffuse, utilising isomorphic mechanisms such as supplier frameworks, networks and alliances and professional organisations more effectively. This next part of the chapter focuses on determinants and factors in individual organisations that influence the adoption of sustainable procurement.

6.4 The influence of internal organisational determinants

In association with isomorphic mechanisms and innovation diffusing sustainable procurement, there are internal determinants within individual organisations that influence adoption. Figure 22 shows that green purchasing forms part of Hart's (1995) pollution prevention and product stewardship strategies and sustainable procurement is part of sustainable development. This section discusses the influence of internal determinants on adoption. It addresses part of the research question examining the drivers and barriers to adoption by reporting on the effect of organisational size. The study results examining other potential drivers and barriers are discussed in Section 6.5.

Section 6.5.1.4 reports on the influence of organisational management systems which frequently pre-empt green purchasing and are instigated in the pollution prevention strategy (Hart 1995). As organisations move beyond pollution prevention strategies the cost of programs and products (see Section 6.5.1.3) are less of a barrier and social legitimacy becomes a driver as discussed in Section 6.5.2. Internal adoption factors such as support from senior management (see Section 6.5.1.1) and staff awareness (see Section 6.5.1.2) contribute towards creating an organisational culture conducive to adoption outlined in Section 6.4.2. Aligned with Hart's (1995) sustainable development strategy, the introduction of sustainable procurement ensures social and economic development supports the integrity of ecological systems.

Several theorists have also examined the affect of organisational size on green purchasing introduction, suggesting that larger organisations with more slack are more predisposed to adoption. Section 6.4.1 sets out my finding, examining the effect of organisational size on adoption, purchasing practices and supplier requirements.

Green *et al.* (1996: 188) refer to green purchasing as 'an emergent line of research, which may prove to be one of the most fertile for those concerned with the environmental transformation of economies'. This literature has proposed environmental improvements to the internal operations of purchasing management (Green et al. 1998; Zsidisin and Hendrick 1998: Bowen et al. 2001; Min and Galle 2001; Zsidisin and Siferd 2001) and supply chain management (Lamming and Hampson 1996; Handfield et al. 2005; Sarkis 1998; Zhu and Sarkis 2007; Rao and Holt 2005). I draw on examples in the green purchasing literature to contextualise my research findings examining internal organisational determinants, starting with the effect of organisational size as a determinant of sustainable procurement.

6.4.1 Influence of organisational size

Several authors have examined the affects of organisational size and the adoption of environmental programs, environmental purchasing and sustainable procurement (Carter & Jennings 2004; Klassen & Angell 1998; Min & Galle 2001; Zhu et al. 2008), its role in organisational innovation (Bessant & Tidd 2007; Rogers 2003) and its influence on reputation (Hall 2001; Preuss 2005b; Russo & Fouts 1997). In this section I discuss the relationship between organisational size and adoption, as well as its influence on purchasing practices and supplier performance.

6.4.1.1 Organisational size and adoption

While the survey results showed low adoption of environmentally sustainable purchasing (ESP) outlined in Section 3.3.5, small organisations with fewer than five employees recorded the highest rates of adoption. It should be noted that smaller organisations (1-200 employees) represented slightly less than half (42.5%) of the survey sample (see Section 3.2.1). My findings also demonstrate an upward trend in ESP adoption relative to a decrease in employee numbers.

In contrast to my findings, most previous studies found that green purchasing was not significantly related to organisational size (Carter & Jennings 2004; Klassen & Angell 1998; Min & Galle 2001). Zhu *et al.* (2008) found green purchasing was at a similar implementation level amongst all manufacturing organisations surveyed (Zhu et al. 2008). The relationship between adoption and annual purchasing spend in my results was less explicit. Min and Galle (2001) found involvement in green purchasing was positively associated with larger purchasing volumes, but overall my results display that the breadth and depth of ESP was higher in organisations that spent less than $5 million annually on goods and services.

The high adoption rate by smaller organisations in my research may be explained by their agility and also their collaborative and technological cooperation. These are features of the final stage of Hart's sustainable development linking to competitive advantage (Hart 1995) and innovative capacity (Hart & Milstein 2003). Schumpeter (1934) stressed that innovation was the preserve of larger organisations with more organisational slack (Bourgeois 1981); however, innovation is also the product of interorganisational links (Goes & Park 1997) and supply chain engagement (Bessant & Tidd 2007). By contrast, Bansal (2005) found that organisational slack was important in the early stages of sustainable development, which correlates with Hart and Milstein (2003) and others who say innovation is not confined to larger organisations. Rogers (2003) found larger organisations were more innovative (Rogers 2003). Small to medium size Australian businesses are translating the benefits that innovative corporate social responsibility practices can bring to the community. (Lloyd 2006) states, 'the innate nimbleness of small to medium sized enterprises helps them to innovate around corporate social responsibility' (Lloyd 2006: 63) and they display a variability in implementing organisational strategies (Min & Galle 2001). In concurrence with Hart and Milstein (2003) and Lloyd (2006), my survey findings suggest that smaller organisations are in the early stages of adoption and capitalising on their agility to innovate.

Organisations in the qualitative sample were selected as lead adopters (von Hippel 1986) in sustainable procurement (see Section 2.9.2.1) and their size was inconsequential. Aside from one organisation, all had over 1000 staff. Several scholars have suggested that larger organisations have an advantage over smaller ones in introducing new programs. They suggest larger organisations have more spare resource capacity or organisational slack (Bourgeois 1981; Cheng & Kesner 1997), are more receptive to introducing innovations (Rogers 2003) and are more motivated by the potential of reputational gains (Hall 2001; Preuss 2005b; Russo & Fouts 1997). Hart (1995: 1000) also suggested that a sustained competitive advantage was acquired 'through the accumulation of tacit (causally ambiguous) resources, embedded in large numbers of people'.

In summary, combining these results infers that, while larger organisations have existing capacity or organisational slack to support new programs such as sustainable procurement, smaller organisation capitalise on their size and agility and innovative capacity to implement sustainable procurement. In line with the view of Henriques and Sadorsky (1999) my findings show that organisational size influences earlier phases of sustainability and organisations with more mature programs are influenced by innovation and knowledge based technologies (Goes & Park 1997; Hart 2007; Hart & Milstein 2003).

6.4.1.2   The effect of organisational size on purchasing practices

Organisational size was also found to affect the influence of purchasing practices and supplier performance. The size of an organisation moderated the influence of policies, programs, instruments and arrangements on purchasing. Survey results detailed in Section 3.3.6 reveal that the influence of purchasing on organisational activities increased with an increase in staff numbers and purchasing volume. Indirect purchasing is dominated by longer term collaborative relationships with preferred suppliers (Cox et al. 2005). Consistent with these results, organisations in the interview sample (see sections 4.3.7.3 and 4.3.7.4) were also found to have contracts with suppliers and strategic partnerships, especially in large organisations with over 1000 staff. The finding is significant; having existing documented procedures and arrangements like contracts in place makes it easier to incorporate sustainability criteria into existing programs and policies, potentially leading to faster rates of adoption. Handfield *et al.* (2002: 73) suggest, 'the most practical way to integrate environmental criteria is to modify the existing purchasing process'. In addition, contracts are routinely negotiated on a three year cycle. This means that consistent sustainability criteria can be integrated into tender arrangements on a periodic basis, compared to repeatedly considering sustainability

criteria for every individual purchase on an ad hoc basis. Strategic partnerships with suppliers are usually longer term and imply a closer relationship than a contractual arrangement. In line with Handfield *et al.* (2002) my results found the preparatory organisational procurement processes are in place to effectively introduce sustainable procurement. Furthermore these types of supplier partnerships establish the base for innovation and mutual benefits (Goes & Park 1997; Hart & Milstein 2003), which will be discussed in greater detail in Section 6.6.3.

Survey findings set out in sections 3.3.6 and 3.3.7 suggest a two-tiered arrangement, where procedures and instruments are established at a whole-of-organisation level and implemented by business units in large organisations and employees in smaller organisations. This suggests that, while sustainability may be incorporated in contracts and partnerships with supplier, the support of business unit managers in large organisations and employees in smaller organisations are critical for effective implementation and this may be addressed by awareness training discussed in Section 6.5.1.2, and incentives, discussed in Section 6.5.1.1.

In summary, the combined results from both data sets lend support to the view that the foundational steps of a procurement system are in place to readily integrate sustainability criteria into existing purchasing processes, policies and supplier contracts and partnerships. This finding is further enhanced by results from the interview participants who identified strong partnerships with suppliers as prospective sources of innovation discussed in Section 6.6.3.

6.4.1.3 Size and supplier performance

Survey results in Section 3.3.3 show larger organisations were not imposing stricter environmental standards than smaller organisations. These results show an increase in organisational size did not have a corresponding effect on environmental sustainability as a key criterion in supplier selection. Given the survey sample was comprised predominantly of SMEs, a plausible explanation is that these organisations were responding to requirements from larger organisations, that were not part of the sample audience and imposing sustainability down the supply chain to their suppliers. These results were unexpected, as many larger Australian firms, especially financial institutions, are seen to be promoting their sustainable supplier management systems (Collins 2004).

In combination with the size of an organisation, there are internal determinants that will affect the adoption of sustainable procurement in Australian organisations,

particularly in shaping the underlying values, organisational culture and management support. I examine these internal elements collectively first, by discussing the application of Rogers' (2003) attributes of innovation framework that was applied in the survey of ESP, before a more detailed discussion of the individual elements drawn from the survey and interview material.

6.4.2 Attributes of sustainable procurement as an innovation

Results of factor analysis outlined in Section 3.3.10 show only partial alignment with Rogers' five attributes of innovation. Rogers (2003) proposes that the rate of adoption of an innovation is explained by five groups of variables including (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability and (5) observability. In addition to these five I tested a sixth variable, voluntariness (6) (Moore & Benbasat 1991). Rogers found that alignment with these attributes indicates a faster rate of adoption of an innovation. This section responds to the research question, what factors influence the adoption of sustainable procurement as an innovation and are these consistent with Rogers' (2003) attributes of innovation? As sustainable procurement is an emerging literature, comparison studies are drawn from other diverse literatures that have tested Rogers' framework. Results of factor analysis in Section 3.3.10 reveal that sustainable procurement is a special type of innovation that does not appear to conform to Rogers' attributes, except for one variable, complexity, which was associated with products.

There has been limited application of DoI to sustainability studies, including (Beise & Rennings 2005; Yaw 2005) hotels adopting cleaner technologies, environmentally benign products, solar panels (Beerepoot, 2005) and most articles concentrate on marketing consumer products, health programs and new technology (Kim & Srivastava, 1998; Robertson & Gatignon, 1986; (Chakravarty & Dubinsky 2005; Gulati 1998; Pankratz et al. 2002). In the following paragraphs I compare the results of factor analysis outlined in Section 3.3.10 with Rogers' attributes of innovation, which is displayed in Table 36 and the DoI literature. I begin with a discussion of my findings with Rogers' five attributes.

Section 3.3.10 shows the survey items that were assigned to Rogers' five attributes and the additional attribute, voluntariness, from Moore and Benbasat (1991), which were described earlier. These survey items were then factor analysed which resulted in seven factors. These factors were values, cost, knowledge, products, external support, CEO innovation and purchasing options. A comparison of these

factors and Rogers' five attributes of innovation is displayed in Table 36 which shows the alignment of survey items from Table 27 with Rogers' attributes and the seven factors. I now discuss Rogers' attributes and my findings.

Survey results in Section 3.3.10 show that Rogers' first attribute, relative advantage, did not emerge as a separate factor in my study; items related to organisational values formed one factor while items related to cost formed another factor. Studies from other disciplines including the introduction of decimals for trading in equities and stocks (Chakravarty & Dubinsky 2005) and drug prevention (Pankratz et al. 2002) found relative advantage was the strongest attribute. By contrast, my findings concur with Tornatzky and Klein (1982), that relative advantage, as a scale, is a very generalisable concept and recommended breaking it down into separate components to make it more meaningful (Tornatzky & Klein 1982) where cost and values emerged as separate factors of relative advantage. (The effects of the cost of products and introduction associated with adoption are discussed in greater detail in Section 6.5.1.3.)

Results of my study show that items related to compatibility aligned with four of the seven factors. These are values, knowledge, external support and CEO innovation and all these factors aside from CEO innovation were significant. These findings contrast with studies by Chakravarty and Dubinsky (2005) and Pankratz et al. (2002), which found compatibility was unrelated to adoption. My results suggest that Rogers' attribute of compatibility was the most influential for sustainable procurement adoption.

Complexity was the only attribute to align with a single factor products. Al-Gahtani (2003) found all of Rogers' attributes, except complexity, correlated with adoption of computer technology at work in Saudi Arabia (Al-Gahtani 2003). In my research, complexity, related to the type and perception of products, emerged as the only identical factor. Again, this finding suggests that sustainable innovations are likely to differ from technology-based innovations previously studied. In contrast to other studies where the innovation was mandated, sustainable procurement was found to be an optional decision for most organisations, suggesting that users needed to understand and trial the innovation including sustainable products before adopting the practice.

Items assigned to Rogers' (2003) trialability and observability attributes aligned with the dominant factor, values. In a study of the adoption of the internet as a

teaching aid in foreign language schools, observability and trialability were the most significant predictors of adoption (Martins et al. 2004). The prominence of these attributes may be explained by the type of innovation, setting and social system. Martins *et al.'s* (2004) study was in schools, whereas my study examined adults in a workplace and the social system was Australian organisations (Rogers 2003).

The three items related to the sixth attribute, 'voluntariness', were spread across two factors. Moore & Benbasat (1991) defined voluntariness as the degree to which use of the innovation is perceived as being voluntary or of free will. Results of factor analysis (see Section 3.3.10) showed that a mandate from senior management identified with values, whereas ESP was an optional activity for business units and employees and aligned with purchasing options.

Attributes	Factor 1 Values	Factor 2 Cost	Factor 3 knowledge	Factor 4 products	Factor 5 External support	Factor 6 CEO innovation	Factor 7 Purchasing options
Relative Advantage	7,8,9	4,5,6					
Compatibility	10, 17 18, 19		11,12, 13		14, 15	16	
Complexity				20, 21, 22			
Trialability	23, 24						
Observability	25, 26						
Voluntariness	27						28, 29

Table 36 Rogers' attributes of innovation and factors influencing sustainable procurement adoption

Figures in this table refer to survey items in Table 27

In summary, the results of factor analysis discussed in Section 3.3.10 reveal that the adoption of sustainable procurement is most concerned with Roger's attribute of compatibility, comprised of items related to internal factors and external relationships. However, overall my findings concur with Rogers (2003) that the five attributes of innovations may not always be the five most important perceived characteristics for a particular set of respondents (Rogers 2003).

In addition, the results of factor analysis identified that the most significant factor, values contained items from all of Rogers' attributes, aside from complexity. These results suggest that the adoption of sustainable procurement is reliant on a compatible organisational culture. Organisational culture is the 'invisible force' in

the organisation, particularly the values and norms shared by the dominant conditions which shape decisions' (Stace & Dunphy 2001: 9). 'Organisational culture is inextricably associated with the mission and strategy of the organisation, with technology and the production process' (Dunphy & Stace 1991: 187-188). Dunphy et al. (2003: 82) suggest that 'sustainability values need to become a core theme of sustainable organisations'. Survey results in Section 3.3.1 show that alignment with existing purchasing practices and environmental policies and programs was strongly predictive of adoption. Hence, it in line with the view of Dunphy et al. (2003) it could be surmised that the corporate climate of sustainability was conducive to introducing sustainable purchasing. Among survey sample organisations, the introduction of sustainable procurement was compatible with the corporate values and programs, senior management support, staff awareness, relationships with suppliers and customers and an innovative CEO.

My findings align with Klein and Sorra (1996) and infer that sustainable procurement is being embedded in organisations due to organisational or cultural fit and innovation fit and that sustainable procurement is understood as the next logical step in organisational sustainability. Based on Rogers' framework the attributes that influence the adoption of sustainable procurement as an innovation are more concerned with organisational values. This contrasts with previous studies on technical innovations that tend to be more directly related to cost and financial considerations (Al-Gahtani 2003; Pankratz et al. 2002).

6.5 The influence of internal organisational factors

The previous section discussed factors that were predictive of sustainable procurement adoptions based on Rogers' (2003) attributes of innovation (Rogers 2003). In this section I discuss some individually selected internal determinants that constitute organisational values and the other factors studied. This section addresses the research question if the drivers and barriers to adoption reported in international studies are present in this study of Australian organisations. Part of this question was addressed previously in Section 6.4, which reported on the effects of organisational size. Drivers and barriers discussed here include cost (discussed in Section 6.5.1.3), knowledge (discussed in Section 6.5.1.2), CEO innovation (discussed in section 6.5.1.1), external support (discussed as part of stakeholders in section 6.6) and purchasing options (discussed in Section 6.4.1.2).

6.5.1.1 Senior management

The support of senior managers is critical to create an organisational environment that is receptive and supportive of sustainable procurement implementation

(Dunphy et al. 2000; Dunphy et al. 2003). According to many authors, senior management support (Berry & Rondinelli 1998; Hunt & Auster 1990), their perception of environmental issues (Banerjee 2002; Bansal & Roth 2000; Sharma 2000) and their stakeholder salience (Gonzalez-Benito 2008; Henriques & Sadorsky 1999) are important elements in implementing proactive environmental strategies. Alignment of manager's values and organisational values has also been shown to support sustainable procurement implementation (Carter & Jennings 2002a; Drumwright 1994). Survey results in Section 3.3.3 show a high correlation between senior management support and adoption.

The qualitative material (see Section 4.3.6.1) also found the commitment of senior management is influential in implementation, particularly aligning their personal values with organisational goals and in shaping a culture that encourages adoption amongst employees. Unprompted by specific questions related to senior management, most interview participants recognised that 'individual commitment and support from management seems to be quite influential' and also from upper management. In agreement, Carter and Jennings (2004: 168) found that 'senior management leadership had a significant mediating effect on sustainable procurement, through a people orientated organisational culture'. Preuss (2005b: 136) found that purchasing managers 'remain sceptical of the economic benefits of greener supply, also profitable companies can afford greener supply activities'. Some participants suggested incentives to encourage alignment with organisational goals, which contradicts Sharma's (2000: 692) findings of a proactive organisation, which 'may not need formal controls and incentives, to act accordingly'. For voluntary environmental strategies, like sustainable procurement, Sharma (2000) suggests managers require creative problem solving and innovation.

A manager's commitment and perceptions of environmental problems is another factor influencing adoption. One participant suggested that a sustainable procurement champion should have the support of 'their finance director or chief executive'. This observation identifies with Anderson and Bateman (2000), who recommended environmental champions should present new initiatives, emphasising their financial merit, to build employee support. Another interview participant reported that sustainable procurement was instigated by 'a new director of the group (...), who brought some fairly definite ideas and he was quite passionate about environmental issues', which reflects a sincere commitment to the environment, and aligns with Drumwright's (1994) concept of leaders. This role is

representative of Hanson and Middleton's (2000) concept of eco leaders and Green *et al.'s* (2000) green procurement campaigners (Wycherley, 1999)

My findings highlight that senior management support plays an influential role in adoption, along with alignment of their personal values to organisational aspirations. Drumwright (1994) was less definitive, finding that a supportive senior management was not imperative. I suggest that a lack of senior management support and endorsement may delay the rate of adoption. Sharma (2000) found that senior managers are instrumental in shaping an organisational culture that 'embraces environmental issues as opportunities' and Carter and Jennings (2002b: 167) suggest this is aligned to a personal conviction and 'the desire to be a good corporate citizen'. Given the high degree of business unit autonomy (91.7%) from survey respondents described in Section 3.3.7, the role of senior managers as gatekeepers of units (Bessant & Tidd 2007) and change agents appears to be pivotal in the diffusion of sustainable procurement programs. This is in agreement with Preuss (2007b: 516), who suggested that 'the gate keeper role of the purchasing function could foster ecological product or process innovation amongst supply chain members'.

In addition to business unit managers that implement sustainable procurement strategies, purchasing managers also have a critical role, particularly in their interface with stakeholders. Carter and Jennings (2002b: 37) assert that purchasing managers are in unique position to contribute to sustainability, primarily through their interface with stakeholders, who include 'customers, suppliers and regulatory agencies'. Carter (2000: 192) suggests that it is the purchasing manager's relationship with stakeholders that 'influence how the firm is viewed by suppliers and others outside organisations'. Purchasing managers have dual responsibilities, internally as business unit managers to support implementation, and externally managing a range of stakeholder relationships, that support the implementation of sustainable procurement, particularly the supply of sustainable products. The role of stakeholders will be discussed separately in more detail in Section 6.6.

The purchasing manager is ultimately responsible for evaluating and selecting suppliers who can proactively contribute to their firm's environmental strategy and whose products and services meet or exceed government environmental regulations (Handfield et al. 2002: 82). Bessant and Tidd (2007: 340) suggest that supplier relationships based on strong interpersonal features 'evolve into a full

network, with the participation of secondary and tertiary suppliers'. The findings suggest the support of business unit managers, together with purchasing managers are critical determinants to successful implementation of sustainable procurement.

6.5.1.2 Staff awareness

In association with senior management support, employee awareness and knowledge are part of an organisation's internal capabilities that lead to competitive advantage and 'facilitate environmentally sustainable economic activity' (Hart 1995: 991). Survey findings in Section 3.3.3 identified staff awareness and organisational knowledge as significant factors in adoption. These findings suggest that, while lack of staff awareness and organisational knowledge were not identified as significant barriers to adoption, the comments raised in the interviews (see Section 4.3.6.1) indicate that staff awareness and knowledge support successful programs.

Most participant organisations interviewed had, or were about to roll out, general sustainability awareness programs to staff (Hunton-Clarke et al. 2002; Russo & Fouts 1997) targeting procurement managers as the first cohort for training, while other organisations had instigated specialist training for procurement managers, particularly attuned to ethical aspects. In concurrence with Preuss (2007b: 533), there appears to be 'an organisational lag integrating environmental procurement elements' and social criteria into organisation wide programs. Rather than adopting sequential training programs, Fowler and Hope (2007: 36) recommend 'that companies would be best served by viewing sustainability as a continual process of organisational innovation and development on all fronts'. Lack of buyer awareness has been raised as a barrier in previous studies (ECO-Buy 2005, 2008; Min & Galle 1997). Interestingly, the Victorian Government's ECO-Buy program continues to record awareness and knowledge as the largest impediment to purchasing green products (ECO-Buy 2008), despite an active training program and regular forums and information-sharing sessions (ECO-Buy 2008).

Interview findings in Section 4.3.6.2 reveal that several interview participants highlighted a perceived disconnection between employee environmental behaviour at work and at home, which suggests that awareness programs should target general environmental behaviour. One organisation was addressing this issue with newsletters that staff 'can take home to where their practices may also help change culture in the workplace'. Another participant observed that staff remarked on recycling at home, but 'they are not environmentally responsible at work'. Stern and Dietz (1994) found an individual's concern for the environment can be linked to their values, attitudes and behaviour. Carter and Jennings (2004: 168) found,

'employee values play a pivotal role when employees decide to initiate actions on their own or when employees are chosen to develop or manage a purchasing social responsibly effort'. Indicative of second order CSR learning, proposed by (Hunton-Clarke et al. 2002), several organisational representatives commented on employee perceptions of sustainable products; 'a sustainable computer would be perhaps something that has recyclable materials or something'. Organisational awareness programs appear to play a wider role in diffusing sustainable behaviour at home and in the workplace.

6.5.1.3 Cost of products and programs

Survey results in Section 3.3.3 show that the cost of sustainable products and the cost of introducing ESP programs were not perceived as significant barriers to adoption. However, based on the spread of responses, this could indicate that cost was an obstacle rather than an explicit barrier to adoption. My findings contrast with other green purchasing studies. Min & Galle (1997) ranked the high cost of environmental programs as the primary barrier to effective green purchasing and this finding was confirmed in a subsequent study (Min & Galle 1997, 2001).

In contrast to my survey findings, the qualitative component (see Section 4.3.6.3) did suggest the cost premium for environmentally preferable products was a barrier to adoption. One participant stated that 'the management directive is quite clear that we won't wear a cost penalty for environmentally preferable products, but we do have a preference for environmentally preferable products'. In line with my findings an Australian study by ECO-Buy reported that the cost (perceived or real) of green products was a major barrier to buying green products (ECO-Buy 2006).

The composition of the sample audiences may explain the divergence in these results. In general, survey respondents recorded low levels of ESP adoption, which suggests that most organisations had little experience of buying sustainable products and implementing programs; therefore, it could be assumed their responses were based largely on the perceived costs. This perception of cost contrasts with Min and Galle's (1997) findings that purchasing professionals were dissuaded from green purchasing, due in part to a misconception that programs are expensive to initiate and implement. By comparison, participants in the qualitative cohort with established programs were in a position to speak from actual experience. The findings infer that organisations contemplating sustainable procurement do not perceive cost as a barrier to adoption. It could also be interpreted that other variables meditate the cost of implementation as suggested by Carter (2005). He found no direct relationship between sustainable procurement

and costs; however, organizational learning and supplier performance act as key, mediating variables between sustainable procurement and costs, with sustainable procurement leading to organizational learning, improved supplier performance, and ultimately reduced costs (Carter 2005).

6.5.1.4 Organisational management systems

Survey results in Section 3.3.3 revealed that organisations with environmental and sustainability programs in place were more predisposed to sustainable procurement adoption, as part of implementing CSR. These include a quality management system, an environmental management system and sustainability reporting frameworks. Adoption of these frameworks influences organisations in several ways. In Section 6.3.1, I discussed these instruments as coercive devices institutionalising sustainable procurement across organisations, whereas here I discuss the relationship between procuring organisations adopting these systems and frameworks and sustainable procurement adoption.

Results from the interview material (see Section 4.3.6.4) indicate that sustainable procurement forms part of an organisation's sustainability program and its policies, slotting 'really neatly into CSR activities of the organisation' and 'procurement is a stream of CSR'. Survey results in Section 3.3.3 revealed that sustainability programs and policies were strongly predictive of sustainable procurement adoption. Several organisations acknowledged that participation in external sustainability reporting frameworks had alerted their potential exposure to supply chain activities. These external indices form part of an organisation's public validation of their commitment to sustainability and subsequently affect their reputation. Addressing the demand by the community and stakeholders (Freeman 1984) for greater organisational transparency, participation in voluntary codes and reporting frameworks has led to increased legitimacy and reputational gains (Roberts 2003), with subsequent gains in competitive advantage (Hart 1995). Therefore, maintaining performance against all indicators is integral to maintaining a strong external reputation, which is demonstrated in the quotation below.

> We were aware that our lowest area of score was supply chain management, so that's probably why corporate responsibility kicked it off, but certainly that was another one. We're very committed to maintaining that Dow Jones.

Corporate environmental management systems can also trigger sustainable procurement initiatives. According to several authors, adoption of an

environmental management system is frequently the impetus for purchasing green products and supplier selection (Green et al. 1996; Klassen & Angell 1998; Rao 2005; Sarkis 2001a, 2001c; Walton et al. 1998). Several authors coined the phrase total quality environmental management (TQEM), to combine environment and quality management systems (Lamming & Hampson 1996; Shrivastava 1995). The combined results reveal a distinct relationship between an organisational EMS and adoption. One participant noted that the establishment of an EMS was the motivating force for 'government departments to implement sustainable purchasing' and this requires organisations to 'get specific information about their products'. Chen (2005) proposed that environmental purchasing has a positive effect on the implementation of ISO 14001 environmental management by educating the public to engage themselves in green consumption, which leads to the attainments of both environmental and financial performance. My findings concur with Handfield *et al.* (2002) that an EMS focuses attention on the component parts of green purchasing, which include vendor selection, product labelling and product life cycle, and encourage adoption.

Together with established procurement systems of supplier contracts and strategic partnerships, discussed in Section 3.3.6, organisational systems including an EMS and external reporting frameworks form the building blocks for creating an organisational environment amenable to successfully embedding sustainable procurement. These initiatives are part of 'the process of linking purchasing and business strategy results in clear functional objectives, that drive the formulation of specific environmental strategies' (Handfield et al. 2005: 3) that would include sustainable procurement for purchased materials, or commodities. Their role in diffusing sustainability to suppliers and industry peers is detailed earlier in Section 6.3. The importance of the organisational systems described in this section is that they impose a minimum environmental standard on organisations and in combination with ethical codes set out in Section 6.3.1.1, are strong forms of legitimation that are likely to induce adoption.

6.5.1.5 Summary of internal determinants of adoption

Results in this section have demonstrated that collectively the organisational elements of senior management support, staff awareness and organisational awareness, cost of programs and organisational programs are some of the internal factors that determine successful adoption. In the same way as Daily and Huang (2001) found factors such as senior management support and training were key elements in EMS implementation (Daily & Huang 2001) my findings suggest that management support and training were found to influence sustainable procurement

adoption. Additionally, results of factor analysis detailed in Section 3.3.10 highlight that compatibility with existing internal conditions and external relationships was predictive of faster adoption. This suggests that organisations planning to introduce sustainable procurement would be advised to examine their current organisational climate to ensure an organisational fit and innovations-values fit for successful innovation implementation (Klein & Sorra 1996). My findings also align with Carter and Jennings (2004) who found a found a significant relationship between environmentally and socially responsible purchasing activities and an organisational culture that considers the welfare of others and is fair and supportive.

While internal factors affect an organisation's internal environment, influencing its receptiveness to sustainability programs such as sustainable procurement, the ways an organisation responds to its stakeholders or its salience can also be predictive of organisational culture. In the next section, I discuss the role and perception of stakeholders in adoption and commence by discussing the key motivations found to influence adoption.

6.5.2 Gaining legitimacy through adoption

Interview results detailed in Section 4.3.5 show that organisations legitimated their adoption of sustainable procurement 'as the right thing to do' which suggests a proactive and moralist posture (Clarkson 1995; Jones et al. 2007) in their commitment to sustainability. This section addresses the research question that asks why organisations are motivated to adopt sustainable procurement. Most corporate organisations interviewed expressed the view that protecting their reputation was the primary motivation for embarking on sustainable procurement, which is related to seeking legitimacy. Bansal and Roth (2000: 727) found that 'firms motivated by legitimation were focused on the stakeholders most influential in prescribing or articulating legitimacy concerns'. Threats to a firm's legitimacy are 'believed to undermine a firm's licence to operate or its long term survival' (Bansal & Roth 2000: 727). Hart (1995: 999) argues that 'external (legitimacy based) orientation may reinforce and differentiate the firm's position through the positive effects of a good reputation'. To protect their 'licence to operate' and secure future reputational worth and subsequent competitive advantage, organisations in the interview sample were found to concentrate their efforts on two stakeholder groups: suppliers and NGOs.

6.5.2.1 Suppliers and legitimacy

Several authors have concluded that many reputational risks reside in supply chains (Bowen et al. 2001; Hall 2000; Handfield et al. 2002; Roberts 2003). One participant stated that customers want assurance that they 'can purchase from a company that they believe is operating responsibly'. Noci (1997) found that customers do not delineate between a company's products and those in their supply chain. Hall (2001: 116) suggests 'depending on the exposure of the customer firm, there is a risk that the poor environmental performance of a supplier may become the problem of the customer firm' Results in Section 4.3.6.6 show that to manage their supply chain risks, most organisations are assessing their suppliers for compliance against sustainability criteria, particularly environmental performance, premised on a 'very collaborative approach' through continuous improvement, slow change, education and encouraging open communication: '...we actually want you to tell us if something goes wrong, in case there is a reputation impact back to us'.

This type of supplier mentoring for sustainability is a critical part of spreading sustainability through interorganisational relationships and discussed in more detail previously in Section 6.3.1 examining institutional forces.

Predominantly results in Section 4.3.5 show that organisations were motivated to adopt sustainable procurement to protect their reputation: 'Risk and reputation management, they are still fairly significant drivers of the (organisation)'.

These results reveal that perceived threats to an organisation's legitimacy stem from potential risks in their supply chain, raised by NGOs. One participant stated that 'you need to be proactive in this area'. This proactive stance to managing reputational risk adds credence to the types of organisations typically introducing sustainable procurement, suggesting that they are seeking to differentiate themselves through this practice as a form of legitimation.

6.5.2.2 NGOs and legitimacy

Results in Section 4.3.5.2 show that NGOs are viewed as potential collaborators for organisations to gain legitimacy. NGOs, particularly environmental NGOs, are influencing consumer behaviour by encouraging more sustainable patterns of consumption (Kong et al. 2002). They found 'the level and depth of engagement between NGOs and companies still varies' (Kong et al. 2002: 109); yet the extent to which these programs affect environmental performance is still unclear (King & Lenox 2000; Rivera & de Leon 2004). In the past NGOs would have lobbied government directly, but today the consumer and the corporation are targeted

directly through NGO marketing campaigns (Hart & Sharma 2004). More is demanded of organisations by a wide range of stakeholders including those with sustainability interests (Dunphy et al. 2003). O'Rourke (2005) suggests that in response to the new role of NGOs, global companies are moving closer to NGOs and collaborating for mutual benefit. (O' Rourke 2005)

Results in Section 4.3.7.4 show only one organisation had partnership arrangements with NGOs. This participant noted that their organisation benefited from 'a better understanding of the external world', which suggests the integration of external perspectives into internal capabilities (Hart 1995). The other benefit derived from partnerships was a 'brand advantage', directly linked to competitive advantage 'their brand alongside their partner's brand'. However, most participants were either, reticent to formalise these arrangements or had difficulty finding a common platform and expressed concern at potentially taking advantage of NGOs as 'free consultants, as opposed to campaigners'. These cautious responses suggest careful management of NGO partnerships.

External indices were also found to be a source of differentiation for participant organisations. Roberts (2003) found, in a climate of strong stakeholder pressure, organisations are more likely to implement frameworks. These frameworks also respond to institutional norms and are the result of isomorphic tendencies (Bansal & Roth 2000; DiMaggio & Powell 1983). The importance of these reporting frameworks is that they frequently alert an organisation of their sustainable procurement responsibilities as part of corporate responsibility.

As previously discussed in Section 6.3, networked relationships build up around recognised areas of institutional life (DiMaggio & Powell 1983: 64-65) and networks and alliances also form through interorganisational relationships (Oliver 1990). Bansal and Roth (2000) cite environmental committees, networks and committees with local community representation as examples of legitimation. Results from sections 4.3.5.2 and 4.3.7.5 reveal several networks and programs that, in addition to direct stakeholder engagement and partnership confer legitimacy on procuring organisations.

This section has demonstrated the links between stakeholders and organisational legitimacy and identified potential loss of reputation as the key motivating factor influencing adoption. 'Corporate reputation is usually defined in terms of the opinion of those who have an interest in an organisation, its stakeholders' (Roberts

2003: 160). In the next section, I discuss the role of stakeholders, in particular NGOs and suppliers as stakeholders, in framing organisational stakeholder cultures and postures (Clarkson 1995; Jones et al. 2007) for adoption.

6.6 Role of stakeholders

Stakeholder theory offers an additional perspective of sustainable procurement. Hart's NRBV also acknowledges stakeholder integration as part of sustained competitive advantage (Hart 1995). Organisations recognise stakeholders' concerns for organisational procurement, which is incorporated into strategies to make purchasing more sustainable and improve relationships with key stakeholders. The section addresses the research questions that examine the influence of managers' salience of stakeholders and, based on managers' salience of different stakeholders, what organisational postures and cultures does this suggest for adoption.

Although there are many aspects of stakeholder theory, I discuss stakeholder salience and its relationship to organisational postures and cultures predisposed to sustainable procurement adoption, by drawing on qualitative results in Section 4.3.7. I selected this aspect of the theory because, as shown in Section 4.3.5, most organisations were motivated to adopt sustainable procurement based on a perceived loss of reputation, which frequently resulted in NGO stakeholder engagement. Coupled with this form of legitimation, several participants noted that adopting sustainable procurement was 'the right thing to do', which displays a type of 'moral reasoning' (Wood 1991) and salience of social issues, which may be helpful to identify the type of organisational culture that is more amenable to adopting sustainable procurement.

6.6.1 Stakeholder salience

Managers, and especially purchasing managers, occupy a critical position in the 'centre of a stakeholder model of the firm, because they contract with all other stakeholders' (Jones 1995: 408). They manage 'stakeholder issues (which may also be presented as social issues) in their relationships with stakeholders' (Clarkson 1995: 99). Donaldson and Preston (1995: 87) advocate that managers should 'respond to stakeholders within a mutually supportive framework, because that is a moral requirement for the legitimacy of the management function'. Managers' perceptions of stakeholder attributes are critical to stakeholder salience (Clarkson 1995; Jones 1995; Jones & Wicks 1999; Mitchell et al. 1997), to identify legitimate stakeholders (Donaldson & Preston 1995) and whether they are latent, expectant or definitive stakeholders (Mitchell et al. 1997) and is predictive of a

stakeholder culture (Jones et al. 2007). Mitchell *et al.'s* (1997) typology is widely used to identify stakeholder salience. They classify stakeholder salience by the attribution of power, legitimacy and urgency. A commination of all three attributes result in high salience, 'definitive stakeholders'; two attributes described as expectant (dominant, dangerous, and dependent stakeholders) result in moderate salience; and one attribute described as latent (dormant, discretionary and demanding stakeholders) results in low salience (Mitchell et al. 1997: 873). The following sections examine interview participants' salience of key stakeholders in sustainable procurement adoption.

6.6.1.1 NGOs as stakeholders

Results in Section 4.3.7 describe a range of stakeholder relationships; however, another way to present this data is to examine the salience of stakeholders in sustainable procurement by applying Mitchell *et al.'s* (1997) nomenclature. To examine the relationship between stakeholder culture and salience, I singled out participants' salience of NGOs for special examination. Table 37 shows participants' quotations that referred to NGOs according to Mitchell *et al.'s* (1997) nomenclature, based on their attribution of power, legitimacy and urgency. This reveals that most participants perceived NGO stakeholders as definitive or dominant stakeholders and to a lesser extent discretionary. NGOs were latent stakeholders in the engagement stage and dominant in the pre partnership stages of collaboration, where legitimacy is acknowledged, yet not urgent, because finding common ground and an 'outcome for the community' was considered more important. NGOs were definite stakeholders in the relationship and partnership stages and dominant when organisations are considering formalising a partnership.

Stakeholder type (Stakeholder attributes based on Mitchell et al.'s (1997) nomenclature	Examples of NGO quotations by interview participants
LATENT Discretionary (Legitimacy only)	ENGAGING STAKEHOLDERS ...we've had discussions with (International NGO) and have discussions with them around the human rights issue in supply chain. We have spoken with a number of environmental NGOs as well, around the environmental side of things. I think that's where NGOs and government have a role to play, in helping people in kind of sharing that knowledge. ...we can have good discussions with some of the NGOs, around how we do some of these things better, because they have some useful information to share. We have regularly forums, where we invite NGOs to have a look at what we are doing and we certainly accept their feedback.

Stakeholder type (Stakeholder attributes based on Mitchell et al.'s (1997) nomenclature	Examples of NGO quotations by interview participants
EXPECTANT Dominant	**COMMUNICATION**
(Legitimacy and power)	We also do a lot of dialogue with NGO's and others and we carry that information internally, that kind of says they're very appreciative of what we are doing.
DEFINITIVE	**RELATIONSHIPS**
Legitimacy, power and urgency	(Australian environmental NGO), we have had a couple of those programs running for a number of years and we are talking about introducing some more so that has been a solid relationship.
	I guess, community wise, we have got a couple of obvious relationships with (Australian environmental NGO).
	We get the value add, if you like, of third party endorsements from respected external parties, non-government groups. So there's a joint brand advantage if you like, so our brand alongside the brand say of (NGO), which is one of our major partnerships.
EXPECTANT Dominant	**PRE PARTNERSHIP**
Legitimacy and power	We are looking at, what does the partnership look like? It's got to be a benefit for both.
	We had a bit of chat with him about forming a partnership in some way we just can't find anything in common. We can't find a common leg, because we don't want to just give money.
	We want to actually do something that has an outcome for us something that has an outcome for them and something that has an outcome for the community.
DEFINITIVE	**PARTNERSHIP**
Legitimacy, power and urgency	We see them as very much sort of two way relationships. Obviously any NGO, who's receiving reasonably substantial sums from us, is going to say that they derive a benefit. But I think what we get out of that is firstly, a better understanding of the external world.
	We also would consider we have partnerships with a lot of environment groups and NGOs which are part of the broader sort of public thinking and development.

Table 37 Organisational representatives' salience of NGO stakeholders, based on Mitchell et al's (1997) nomenclature

Interviewees' salience of NGO stakeholders identified strongly with legitimacy, which is consistent with corporate social responsibility and performance (Carroll 1979; Wood 1991) and corporate philanthropy literatures (Jones et al. 2007; Mitchell et al. 1997). In the absence of power and urgency, Mitchell *et al.* (1997: 875) state, 'there is absolutely no pressure on managers to engage in an active relationship with stakeholders, although managers can choose to do so'. However, stakeholder salience in association with corporate sustainability exhibits different tendencies and motivations (Carroll 1979; Wood 1991); legitimacy is the most potent attribute, as a window to corporate culture (Jones et al. 2007).

Based on Mitchell *et al.'s* (1997) nomenclature, Table 37 shows NGO stakeholders were classified as three main stakeholder types: dominant, discretionary and definitive. Classifying stakeholder types is also useful to identify an organisation's stakeholder culture. By applying Jones *et al.'s* (2007) stakeholder culture framework (previously described in Section 2.8.1.1 and in Figure 4) to these NGO stakeholder types, Table 38 shows that dominant, discretionary and definitive stakeholders share legitimacy as a core attribute, which Jones et al. (2007) suggest is indicative of a moralist culture (Jones et al. 2007). This classification suggests that organisations adopting sustainable procurement exhibit moralist cultures in their engagement with NGOs as stakeholders. Jones *et al.* (2007) suggest that 'moralist firms have a genuine concern for stakeholder interests, making legitimacy the primary driver of salience for their managers'. However, moralist firms are also sensitive to power issues, since power may give stakeholders derivative legitimacy (Phillips 2003), a secondary driver of salience (Jones et al. 2007: 152). As with NGOs, findings in sections 4.3.7.3 and 4.3.7.4 show suppliers were the most prevalent and definite stakeholder in sustainable procurement adoption.

Power	Legitimacy	Urgency	Stakeholder Type	Stakeholder Salience	Corporate Egoist	Instrumentalist	Moralist	S'holder types
Yes	Yes	Yes	Definitive	High	High	High	High	NGOs
Yes	Yes	No	Dominant	Moderate	Moderate	Moderate	Moderate	NGOs
No	Yes	Yes	Dependent	Moderate	None	Moderate	High	
No	Yes	No	Discretionary	Low	None	Low	Moderate	NGOs
Yes	No	Yes	Dangerous	Moderate	High	High	Moderate	

Table 38 NGO Stakeholder salience as an indicator of organisational stakeholder salience (Jones *et al.* 2007: 150; Mitchell et al. 1997)

6.6.1.2 Customers as stakeholders

Results of factor analysis in Section 3.3.10 show that items related to supplier and customer support were strongly predictive of sustainable procurement adoption. By contrast, the interview findings in Section 4.3.7 show that participants did not refer to customers as stakeholders. Together with the strong representation of NGOs as stakeholders, it could be postulated that issues from customers as stakeholder are meditated through NGOs.

6.6.1.3 Suppliers as stakeholders

There appears strong agreement amongst authors that suppliers are definite stakeholders (Clarkson 1995; Jones 1995; Mitchell et al. 1997). Most participants referred to suppliers as definite stakeholders and supplier relationships as trusting 'long term relationships', 'very collaborative' and 'not just contractual, but

partnerships, in that we are working towards mutual goals'. Preuss (2009) found commitment to collaboration and partnership by suppliers featured strongly in ethical sourcing codes (Preuss 2009). In concurrence with Hart's (1995) NRBV that advocates stakeholder integration was an external component of competitive advantage, Jones (1995: 432) asserts that firms 'entering trusting stakeholder relationships will have a competitive advantage, because the costs of opportunism and of preventing or reducing opportunism are significant'. Indicative of Jones' (1995) approach, most interview participants expressed a commitment to work collaboratively with suppliers. Carter and Jennings (2002) found that sustainable procurement had a direct and positive impact on supplier performance, as well as an indirect mediated effect through improved trust and co operation. The significance of long term trusting relationships with suppliers is twofold: firstly, it delivers competitive advantage and, secondly, it establishes a platform for innovation, which is discussed in greater detail in Section 6.6.3 in this chapter.

Stakeholder salience can be an indicator of an organisation's culture (Jones et al. 2007), as set out earlier in the discussion of NGOs as stakeholders. Additionally, it can offer an insight into an organisation's posture towards sustainable procurement, as was based on several models presented in Section 2.8 of the literature review. I start by examining the application of the reactive, defensive accommodative proactive (RDAP) scale (Henriques & Sadorsky 1999; Hunt & Auster 1990; Roome 1992) by applying it to supplier stakeholder relationships (Clarkson 1995), set out previously in Figure 3 in Section 2.8. Based on this typology stakeholder relationships with suppliers were accommodative, accepting responsibility and 'doing all that is required' (Clarkson 1995). Clarkson (1995: 109) classifies a proactive stakeholder culture by organisations that anticipate responsibility and 'do more than is required'. Based on interviewee descriptions, only one organisation demonstrated a proactive strategy towards suppliers in trying to drive industry change, stating:

> ...there is an absolutely genuine desire to support those supply chains in any way that we can. I mean, I think because we just want to, because it's the right thing to do...

> It's about building a community, if you like, around that relationship and sharing information ... because again, that's where the biggest relationship is...

> But there's still a long way to go, and there was a sense that we could
> have a crack at implementing some initiatives that would help them...

Interview findings in Section 4.3.7 show organisations had a high commitment to collaborative supplier relationships. Based on the RDAP scale, this suggests that organisations are prepared to devote time and resources to manage these relationships. Henriques and Sadorsky (1999) suggest this commitment indicates a proactive disposition towards environmental management (Henriques & Sadorsky 1999); therefore it could be proposed that organisations displayed a proactive posture to suppliers in adopting sustainable procurement. This proactive predilection is further supported by results in sections 4.3.5.2 and 2.5.2.1 respectively, indicating the secondary role of the media and regulatory stakeholders as stakeholders and drivers for adoption, as discussed further below.

6.6.1.4 Media as a stakeholder

In concurrence with Henriques and Sadorsky (1999), my findings in Section 4.3.5.2 show the media was not referred to as a primary stakeholder, but as a dormant stakeholder with the single attribute of power (Mitchell et al. 1997).

> ...I think it will come back and bite us because before long, there will be
> NGOs pressure and media interest...

> I mean we've got quite a savage media as well, so things can be ... it
> can be quite damaging, if people are found to not be behaving ethically.

Bansal (2005) found that institutional pressures, such as the media, are important in the early periods of sustainability, but its importance may erode over time. The quotations above show that these organisations fear negative publicity and suggest that the due diligence and governance systems and processes are not in place to respond to negative media comments. This is indicative of the preparatory stages of sustainable procurement, discussed in the phase model presented in Section 6.7 of this chapter.

6.6.1.5 Regulatory stakeholders

Consistent with other studies of environmental awareness in firms (Bansal 2005; Bansal & Roth 2000) environmental logistics (Gonzalez- Benito & Gonzalez- Benito 2006) and environmental purchasing (Carter & Carter 1998) and socially responsible buying (Maignan et al. 2002), government did not feature as a prominent stakeholder in the adoption of sustainable procurement. Survey results showed that government was more routinely referred to as a program provider,

discussed in Sections 3.3.4. Carter and Carter (1998) also found regulatory agents were not drivers of environmental purchasing activities.

In general the way organisations in the qualitative sample responded to stakeholders can be described as proactive (Berry & Rondinelli 1998) to incorporating sustainability in procurement practices (Gonzalez- Benito & Gonzalez-Benito 2006; Henriques & Sadorsky 1999; Maignan et al. 2002), rather than responsive (Bansal & Roth 2000) or reactive (Henriques & Sadorsky 1999), supported by limited acknowledgment and influence of the media and regulation as stakeholders. Many organisations expressed a normative justification (Donaldson & Preston 1995; Jones 1995) for adoption, or a corporate morality (Jones 1995) consistent with what an organisation 'ought to do' expressed by several as, 'it's the right thing to do'.

In summary, the response by interview participants to stakeholders, suggests that this group of organisations has a proactive or accommodative organisational culture to sustainable procurement adoption. Organisations were shown to exhibit a predominantly moralist stakeholder culture (Jones et al. 2007) in their salience of NGOs as stakeholders and an instrumentalist approach to suppliers as primary stakeholders and in line with Clarkson (1995) displayed a proactive posture in their salience of suppliers. Supporting this stance, results show that regulation was not a significant driver and also the media was not regarded by most organisations as a 'dangerous' stakeholder (Mitchell et al. 1997).

My findings concur with Gonzales-Benito and Gonzales-Benito (2006: 1369) who found environmental logistics was mediated by the influence of perceived stakeholder pressure particularly by NGOs that carry considerable influence in forming an organisation's reputation (Kong et al. 2002). In combination with manager's salience of stakeholders and corporate culture, collaboration with stakeholders, particularly suppliers, offers another insight into sustainable procurement adoption, which is discussed in the next section.

6.6.2 Collaborators in Sustainable procurement

Organisations are building relationships with a range of stakeholders including suppliers and NGOs to access the benefits of social capital (Dunphy et al. 2003). My interview findings in Section 4.3.7 reveal that the main collaborating organisations in adoption were suppliers, NGOs and government agencies and to a lesser extent peer organisations and employees. This section addresses the

research question, what types of organisations are the main collaborators in the pursuit of sustainable procurement. The survey results in Section 3.3.4 show that as a group government organisations were the most frequent partners, followed by environmental purchasing programs, private companies, alliances, programs and associations, and environmental NGOs. A comparison of my findings with other studies previously outlined in Section 2.8.2 of the literature review is displayed in Table 39. It shows that collaborating organisations identified in my research diverged from those in other related studies. In comparison to other authors a major point of departure is that customers were not found to be prominent collaborators in sustainable procurement adoption.

Organisational types applied to this thesis	Seuring & Muller (2008)	Roberts (2003)	Carter & Carter (1998)	Achrol, et al. (1983)
Suppliers	Suppliers	Business partners	Suppliers	Input sector
Procuring Organisation	Customer	Customer groups	Buyers	Output sector
			Competitors	Competitive sector
Government	Government	Authorisers	Government	Regulatory sector
Non-government organisations	Stakeholders	External influencers		

Table 39 Stakeholder categories in sustainable procurement

The four main stakeholder categories are suppliers, government, NGOs and the procuring organisations. The buyer or purchaser is common to all organisations because, at any point in time, all organisations purchase goods and services to deliver their core activities. Government includes all levels of government, federal, state and local, and their role as a regulator establishing regulation and monitoring compliance, as well as a program provider outlined in Section 4.3.7.6. NGOs have a main role as a program provider in addition to lobbying government for policy and legislative reform and producers directly, for responsible products and fair and equitable treatment of employees in the supply chain. The supplier category includes manufacturers, producers and distributors of completed commodities, service providers and organisations in these supply chains. The next section discusses suppliers as the key collaborators in sustainable procurement and the added value these relationships bring to adoption.

6.6.3 Collaboration and innovation

The networked nature of procurement and supply chain management is predisposed to collaborative arrangements. Findings from both the survey (see Section 3.3.6) and interview material (see sections 4.3.7 and 4.3.6.6) confirm collaborative supplier relationships were commonplace and also that strategic

partnerships with suppliers were prominent in large organisations with sizable procurement budgets. This implies that larger organisations have committed to longer term supplier relationships over several iterations of contracts, to develop sustainable innovations for mutual benefit.

Trusting relationships with suppliers (Jones 1995), previously discussed in Section 4.3.6.6, are the outcome of repeated transactions and exchanges, resulting in reduced costs and favourable conditions for innovation (Bessant & Tidd 2007). Several participants acknowledged this form of mutual growth predicated on concerns 'beyond cost, to thinking about what suppliers can offer in terms of innovative capacity'. In the absence of prevailing regulation, one participant suggested that innovation would drive competitive differentiation, saying 'innovative ideas, such as biodegradable products, they are things that would fall at the value end of the spectrum'.

Collaborative partnerships with stakeholders, particularly suppliers, forms an integral part of the innovation process for sustainability (Berkhout & Green 2002; Hall 2000; Hall & Vredenburg 2003), environmental purchasing (Green et al. 2000; Preuss 2007b) and creating a green multiplier effect (Preuss 2005a). Collaboration also features as part of Hart's final strategy of sustainable development (Hart 1995). Bessant and Tidd (2007: 325) suggest that 'processes of negotiation, consultation and experimentation are the new ways of doing things, and is more effective'. Berkhout and Green (2002: 230) state that engagement with stakeholders contributes towards 'use of life cycle approaches; greening of the supply chain; and establishes environmental performance criteria for new products'. While several theorists have suggested engaging with a wider variety of stakeholders for innovative solutions, interview findings outlined in Section 4.3.5.4 single out suppliers as the primary source of innovative products.

Interorganisational relationships (Oliver 1990) and partnerships provide an alternative strategy for competitive advantage (Goes & Park 1997; Hart 1995; Oliver 1990). Results from the qualitative component (see Section 4.3.5.4) suggest that collaborative relationships with suppliers are sources of ideas and competitive differentiation: '...we are starting to ask suppliers, can they provide us with ideas to give us advantage, competitive advantage...'

This section has discussed collaborative arrangements with suppliers as stakeholders as potential sources of innovative solutions for sustainable

procurement. The next section integrates the various themes discussed in this chapter to propose a sequential model for sustainable procurement adoption.

6.7 A phase model for sustainable procurement adoption

As a transdisciplinary researcher adopting a pragmatic approach, one of my research aims is to provide 'practical ways' to help entrench sustainable procurement as a standard organisational practice. One participant acknowledged the role sustainable procurement plays in sustainability, by commenting that is was 'a really practical way (organisations) can demonstrate that they are doing something about sustainability'.

In this final section I answer the research question what phases do organisations embed sustainable procurement. I propose a phase model to introduce sustainable procurement based on templates of organisational sustainability proposed by several authors (Carroll 1979; Dunphy et al. 2003; Hart 1995; Henriques & Sadorsky 1999; Hunt & Auster 1990; Maignan et al. 2002; Roome 1992) displayed in Table 40. These models, particularly the RDAP model outlined in Section 2.9, have been customised to stakeholders (Clarkson 1995), environmental commitment and stakeholder salience (Henriques & Sadorsky 1999) and stakeholder responses in socially responsible buying (Maignan et al. 2002).

Several authors have been critical of the application of stage models to corporate sustainability (Newton and Harte, 1997; Schaefer and Harvey, 1998; Vickers 2000) arguing that progression towards sustainability in organisations is seldom consistent and linear and at times even incremental or transformative (Dunphy et al. 2007). In concurrence with Schaefer and Harvey (1998: 110) I acknowledge that there is infrequently 'a line of progression from a company that is not engaged, not interested in environmental issues through to the extreme where a company is highly interested'. Additionally these phase models are based on the assumption that organizations will voluntarily become greener' (Newton and Harte, 1997: 75). In a single case study Vickers (2000: 266) shows an organisation experimenting with a more proactive approach (Roome 1994), but then regressing to a more inward looking and reactive culture. I present a phase model for sustainable procurement recognising that the phases may not be path-dependent and that progression may non-uniform and at times spasmodic.

Appraising the phase models for sustainability I apply an amended version of Dunphy et al.'s (2003; 2007) model to explore sustainable procurement adoption.

Their interpretation of corporate sustainability is congruent with sustainable procurement, flexible for application to all organisational types, and the finer granularity in their phases is more suited to describe the path of sustainable procurement as an emerging literature and practice.

I outline the features of each phase starting with descriptions of organisations from Dunphy *et al.* (2003, 2007) before describing the sustainable procurement characteristics. These descriptions are based on my analysis of the case material, from both data sets, together with descriptions of sustainable organisations, predominantly from Dunphy *et al.* (2003, 2007), and I also draw on my knowledge as a practitioner and the related literature.

Sustainable procurement phases in this thesis	Dunphy et al. (2003, 2007)	Hart (1995)	Wartick and Cochran (1985) Carroll (1979)	Hunt and Auster (1990)	Roome (1992)
Cost driven purchasing	Rejection				
Non responsive purchasing	Non-responsiveness		Reactive	Beginner	Non-compliance
Risk driven purchasing	Compliance		Defensive	Firefighter	Compliance
Eco purchasing	Efficiency	Pollution Prevention	Accommodative	Concerned citizen	Compliance plus
Green Procurement Ethical Procurement	Strategic proactivity	Product Stewardship	Proactive	Pragmatist	Commercial and environmental excellence
Sustainable Procurement	The sustainable organisation	Sustainable Development	Proactive	Proactivist	Leading Edge

Table 40 Comparison of phase of sustainability, incorporating Henriques and Sadorsky (1999: 88), Dunphy *et al.* (2003) and Hart (1995)

The model draws on results in all the previous chapters, and incorporates the stages of collaborative relationships, described in Section 4.3.7. Categorising the cases in the qualitative sample, most organisations identified with the strategic proactivity phase, primarily because of their environmental conceptualisation of sustainable procurement, as discussed in Section 4.3.2.3, and their approaches to stakeholder engagement in Section 4.3.7. No organisations were found to be practising sustainable procurement in the 'first wave' stages of rejection and non-responsiveness (Dunphy et al. 2003); although, some individual strategies aligned. Two organisations displayed organisational approaches commensurate with the efficiency phase, which matches Hart's pollution prevention strategy (Hart 1995).

6.7.1.1 Rejection

Rejection represents a minimal level of compliance with environmental and occupational health and safety legislation and in some cases organisations may not even meet the legislated requirements (Dunphy et al. 2003, 2007).

My findings show procurement in this phase is dominated by a cost savings approach, with little regard for sustainability. Organisations may deliberately attempt to circumvent their mandatory or legislative requirements in an attempt to save costs. Procurement is regarded as an administrative activity, characterised by maverick buying and inefficient processes. Employees may have a commitment to sustainable purchasing, but this is not actively encouraged except when complemented by cost savings. Organisational stakeholders, including the community, are not recognised as a significant component of the organisation's operating environment (Jones et al. 2007). The environmental and social implications of product selection, quantities of supplies used, raw materials used and of production techniques are not considered.

6.7.1.2 Non-responsiveness

The narrow technical or financial focus of the organisation excludes significant consideration being given to the human or ecological sustainability. Employees are viewed as a resource cost to be minimised, social responsibility and community concerns are ignored and little regard is given to environmental degradation resulting from the organisation's activities (Dunphy et al. 2003, 2007).

In this phase organisations are aware of their mandatory requirements, yet, dismissive of compliance. Jones *et al.* (2007) describe this type of organisation as a corporate egotist in its tendency towards external stakeholders. They are frequently forced to implement systems and processes as a licensing requirement to manufacture or perform a service to the standards required by a regulator or a major customer.

In contrast to the survey findings in Section 3.3.6, procurement is characterised by duplication and ad hoc activities, with no documented policies or systems and cost savings. In this and the former phase the media is a dormant stakeholder (Mitchell et al. 1997) and along with fringe dwellers (Hart & Sharma 2004), NGOs are poised to create negative publicity resulting from organisational indiscretions, including labour conditions of suppliers (Maignan et al. 2002; Roberts 2003). Henriques and Sadorsky (1999) suggest these organisations are 'more concerned about being

caught doing something wrong by a reporter, than about being caught by a regulator' (Henriques & Sadorsky 1999: 96).

6.7.1.3 Compliance

Compliance is undertaken as a risk-reduction exercise for the organisation, in regard to both community concerns and environmental issues. Employee relations are often characterised by benevolent paternalism (Dunphy et al. 2003, 2007).

The Australian Compliance Institute (2004) defines compliance 'as the provision of services that facilitate an organisation identifying and meeting its obligations, whether they arise from laws, regulations, contract, industry standards, or internal policy' (The Australian Compliance Institute 2004). Applied to sustainable procurement, only mandatory requirements are integrated into organisational procurement processes. Comments by one participant illustrate a compliance approach to sustainable procurement, where legislation is the maximum requirement.

> As a personal view, the concept of sustainable purchasing itself does create a bit of a problem, because if you look at the facets, particular in terms of ethical and social activity, they are actually already regulated.

Purchasing is driven by a compliance approach, with an emphasis on probity, and legislative compliance integrated into documented systems, such as quality management systems and corporate governance frameworks including a code of conduct for employees setting out standards of probity, employee conduct and acceptable behaviour. Several authors have highlighted that these procedures and protocols frequently form the base for introducing other systems and protocols, such as environmental management (Handfield et al. 2002; Hart 1995) and ethical purchasing codes (Roberts 2003). One organisation showed a risk management approach to purchasing: 'They don't want people to find out that they are buying products that are toxic and that seems to be the issue, risk management, so we've seen...'

Legislative instruments also influence sustainable procurement adoption, including compliance with legislation (EPBC Act), discussed in Section 2.5.2.1. Co-regulatory practices are also present (Dunphy et al. 2003), where 'government, business and the community play a part in sustainable development' (Dunphy et al. 2007: 50). An example of this form compliance is the requirements imposed on suppliers under the Covenant detailed in Section 4.3.6.7. Training and contractual requirements

are also restricted to legislative compliance, including obligations to health and safety legislation.

6.7.1.4 Efficiency

Teamwork among employees is encouraged and used to add value to the organisation's activities. Poor environmental practice is seen as an important source of avoidable cost. Community and environmental issues are primarily addressed on a cost-benefit basis for the organisation (Dunphy et al. 2003, 2007).

This phase could equally be classified as compliance plus (Roome 1992), equivalent to pollution prevention (Hart 1995), ecological responsiveness (Bansal & Roth 2000) or eco-efficiency[6] (World Business Council for Sustainable Development 1992). A combination of environmental integrity and economic prosperity (Bansal 2005) was found to influence environmental purchasing and environmental supply chain performance; however, as one participant acknowledged, organisations 'won't wear a cost penalty for environmentally preferable products'.

My findings indicate that establishment of organisational performance indicators and internal reporting of resource consumption draws attention to products purchased and their life cycles, particularly end-of-life alternatives. Organisations typically commence preliminary public environmental reporting of resources and may include consumption of commodities like office paper.

Building on quality management systems, typically organisations were found to implement an EMS that is often the impetus for green purchasing, as outlined in Section 4.3.6.5. In combination, the environmental performance of suppliers is monitored. One participant suggested the 'links between an (EMS) and purchasing policy ... are often very direct links, so you end up with a company environmental policy'. Product selection criteria are typically restricted to one or two environmental attributes, including recycled material, water or energy saving using government labelling systems.

Environmental issues are socialised throughout all levels of the organisation. These issues are represented at board or management committee level and these bodies 'endorse sustainable procurement policies' and staff environmental awareness

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[6] eco-efficiency is achieved "by the delivery of competitively priced goods and services that satisfy human needs and contribute to quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle, to a level at least in line with the Earth's estimated carrying capacity"

programs are implemented (see Section 4.3.6.2), starting with senior management as a priority. The eco-efficient organisation also begins to engage with stakeholders on environmental issues surrounding procurement. Clear channels of communication and open dialogue are established with suppliers, NGOs and peers, to understand 'the expectations of stakeholders' before formal engagement processes in the next phase of strategic proactivity.

6.7.1.5 Strategic proactivity

Intellectual and social capital is used to develop the organisation and achieve the desired organisational outcomes. The organisation views itself as a member of the community and one of its major roles is seen as contributing to enhancing community wellbeing. Proactive environmental strategies supporting ecological sustainability are pursued (Dunphy et al. 2003, 2007).

This phase is equivalent to a 'proactive' approach to sustainability (Henriques & Sadorsky 1999; Hunt & Auster 1990), environmental responsibility (Bansal & Roth 2000), an environmentally conscious enterprise (Handfield et al. 2002) and applying product stewardship strategies (Hart 1995).

In an extension of public reporting, organisations participate in external indices to demonstrate their commitment to sustainability (Dunphy et al. 2003). Some of these include Reputex, Business in the Community, Dow Jones and FTSE, which like an EMS highlight shortfalls like, 'our lowest area of score was supply chain management'. Complementing these indices external sustainability reporting was found to be in place. Several organisations used 'the Global Reporting Initiative as a model', which may result in a stand-alone sustainability report of portion of an organisation's annual report.

Shifts to sustainable procurement are also spread by sustainability alliances (Dunphy et al. 2003). As a consequent of involvement in external indices, alliances and exposure to external stakeholders in the previous phase, organisations build on their environmental responsibility and become aware of the ethical responsibilities in their supply chains as a potential reputational risk. This was found to precipitate participation and conformance with labour protocols, including the International Labour Organisation, Global Compact and United Nations declarations. My findings show that procedures and directives for sustainable procurement form a stand-alone policy. From a supply chain perspective, there is exposure not only from direct suppliers, but from supplier's supplier's supplier (Hall 2001). To mitigate this supply chain exposure strategically proactive firms begin to monitor their suppliers'

systems. This includes requiring suppliers to have an EMS, which ranges from 'a template that has the minimum to ...for the bigger or more high-risk organisations, we potentially oblige them to have third party assessment done'.

Just as stakeholder engagement is an integral element of CSR (Wood 1991) stakeholder relationships, particularly with suppliers and community stakeholders, are important to ensure responsible management of sustainable procurement (Henriques & Sadorsky 1999). As part of establishing these relationships, policies, product and supplier selection procedures are socialised because 'engaging stakeholders in the process then helps (organisations) further down the supply chain'.

As organisations start to scrutinise product attributes based on life cycle assessment criteria and extended producer responsibility options, supplier relationships and tools to validate product claims become central elements of sustainable procurement. Supplier relationships are based on working 'towards mutual goals' and examine what suppliers can offer 'in terms of innovative capacity that will help us to develop new products'.

Effective supply chain relationships and procurement procedures form an integral part of sustainable procurement in proactive organisations. As outlined in Section 3.3.6, procurement is influenced substantially by policies and documented procedures and holds a strategic position, particularly in large organisations (Preuss 2005b) with long term supplier relationships (Cavinato 1991; Cox et al. 2005) and act as a base for introducing sustainable procurement (Handfield et al. 2002). The procurement and sustainability departments work closely together and are frequently co-located to jointly 'create the tools and the processes' for sustainable procurement.

In this phase, broad-scale staff awareness programs in sustainable procurement are in place and organisation-wide tools and processes mandate purchasing sustainable products. Procurement staff are recruited based on their sustainability experience and their sustainable procurement is a key performance outcome:

> We've made a commitment in the procurement division in terms of the ethical and environmental code of practice and sourcing material, to actually make that one of our measurable proponents of people's performance...

6.7.1.6 The sustainable organisation

The organisation seeks to exert influence on key participants in society in order to promote increased human welfare and equitable and just social practices. It adopts a strong organisational ethical position and is a strong promoter of equal opportunity, workplace diversity and work-life balance as workplace principles. It is an active promoter of ecological sustainability and seeks to assist society to become ecologically sustainable. Nature and people are seen as valuable in their own right (Dunphy et al. 2003, 2007).

Organisations in this phase are conscious of sustainable procurement as an environmental and social response, equivalent to Hart's sustainable development (Hart 1995) 'fostered by a strong sense of socio-environmental purpose' (Hart 1995: 1002). Organisations in this phase direct equal attention to both environmental and social supply chain and product considerations, corresponding with this advanced stage.

As boards of management are increasing concerned with the issues of sustainability (Dunphy et al. 2003), sustainable procurement is given prominence at 'a board level CSR committee that's chaired by the chairman' or equivalent. At the operational level there is a discrete sustainable procurement department, which maintains a close relationship with the CSR department. Dunphy et al. (2007: 171) propose that 'the building of the human and ecological capabilities of an organization contributes to its reputational capital'. All staff are aware of their sustainable procurement responsibilities, which forms part of induction training and senior managers are frequently invited to share experiences with other organisations and which is widely published. The organisation's performance in sustainable procurement is marketed as one of their competitive strengths and makes the organisation an employer of choice.

Organisations are seeking to realize strategic opportunities from the natural environment 'including the generation of "green" products and services and the refinement of supply chain procurement practices' (Dunphy et al. 2007: 157). Life cycle impacts are considered in product selection, reviewing the full production flow from extraction of raw materials to their disposal, reuse or recycling, even where their own operation may control only a link in the total chain (Dunphy et al. 2003: 76). Product selection strategies such as The Natural Step criteria Factor X & 10, ecological footprinting and cradle-to-cradle approaches (Braungart et al. 2007) may

be employed. Organisations collaborate with suppliers to jointly develop and trial sustainable innovative products, capitalising on the latest technological advances.

In this stage of advanced performance, suppliers are sanctioned for non compliance with environmental and ethical standards (Maignan et al. 2002). Interestingly, only one organisation interviewed sanctioned a supplier because they 'kind of felt it was such a bad non compliance', but there was also a prevailing, contrasting view by most organisations that it 'isn't the right approach and that it actually can be more divisive ...'. Generally, most organisations had a collaborative approach to suppliers as outlined in Section 4.3.6.6, which was based on 'good assessment and continuous improvement of companies and in fact, that's really quite important to getting the companies to cooperate'.

Sustainable organisations have strong links with the community and stakeholders that represent its interests on 'community advisory panels', to guide the progress of sustainable procurement (Dunphy *et al.* 2003, 2007). Purchasing is committed to community outcomes, summarised by one participant as, 'let's kind of purchase in a way that's good for the community'. Organisations are motived by ethics of what one ought to do as a type of 'moral reasoning' (Wood 1991), with many organisations stating it is the 'right thing to do'.

To progress sustainable procurement organisations collaborate with diverse stakeholders and alliances (Dunphy *et al.* 2003, 2007) including fringe stakeholders (Hart & Sharma 2004) and the poor and disenfranchised (Hart & Milstein 2003) as sources of creative destruction (Schumpeter 1934) in developing innovative product and service solutions for sustainability (Foster & Green 2000). NGOs lend credibility to organisations pursuing sustainable procurement acting as 'brokers ... that encourage procurement to go down this path'.

Hart and Sharma (2004: 8) suggest engaging with fringe stakeholders is 'an important source for generating the knowledge required for innovation because they may hold knowledge and perspectives that are key both to anticipating potential future sources of problems and to identifying innovative opportunities and business models for the future' (Hart & Sharma 2004: 10). These diverse stakeholder groups are future sources of sustainable innovation, essential for sustainable procurement.

6.7.2 Summary

This research has contributed towards theorising sustainable procurement through a number of established management theories. In Figure 22 Hart's NRBV is used to explain the progression from green to ethical to sustainable procurement and serves as a base to summarise contributions to stakeholder theory, DoI and institutional theory.

Analogous to Hart's pollution prevention strategy most organisations were found to be practising green purchasing. My findings show EMS adoption was commonplace and often precipitated adoption of green purchasing and processes to monitor environmental supply chain performance. In agreement with several theorists (Bansal 2005; Henriques & Sadorsky 1999) my findings show that in the early stages of green purchasing organisational size is important, although in the more mature stages of sustainable procurement this is less influential.

In line with Hart's (1995) product stewardship strategy some organisations were found to be progressing from green purchasing to incorporate ethical elements, engaging with stakeholders. Consistent with the CSR and related literature interviewees' salience of NGO stakeholders identified strongly with legitimacy (Bansal & Roth 2000; Carroll 1979; Wood 1991) and corporate philanthropy literatures (Jones et al. 2007; Mitchell et al. 1997).

This research contributes to stakeholder theory by identifying the main stakeholders in sustainable procurement and, based on managers' salience of stakeholders, puts forward the types of stakeholder posture and culture of adopting organisations. These were found to have a moralist stakeholder culture (Jones et al. 2007) based on managers' salience of NGO stakeholders and an accommodative and proactive stakeholder posture to suppliers (Clarkson 1995) based on managers' salience of suppliers. In line with Roberts (2003) my findings show that organisations were implementing frameworks and participating in external indices in response to perceived stakeholder pressure and risk of reputational loss.

Sustainable procurement is analogous to Hart's (1995) sustainable development strategy. While adoption was found to be formative my findings concur with Bansal (2005) that sustainable procurement was practised as a triple bottom line approach by organisations with head offices outside Australia. In line with the views of Hart (1995) that organisations practicing sustainable development strategies align their vision and operations to this end, my findings were in agreement. Overall

organisations implementing sustainable procurement found the cost of sustainable products and implementing programs was not a barrier because their organisation had committed to sustainability.

Furthermore as part of this strategy, my findings show collaboration was predictive of adoption, however in contrast to other studies (Achrol et al. 1983; Carter & Carter 1998; Carter & Ellram 1998; Roberts 2003) customers were not identified as major collaborators in this study. Government, NGOs and suppliers were the main collaborator groups. Existing long-term relationships with suppliers together with supplier contracts and strategic partnerships were the platform for innovation solutions to sustainability. Aligned with Hart (1995) competitive advantage and potential loss of reputation were found to be the most significant drivers of adoption and in concurrence with Gonzales-Benito (2008) these organisations had a proactive response to sustainability.

My study also explains the spread of sustainable procurement as an innovation using DoI. The findings show that it is predominantly an optional decision that according to Rogers (2003), explains its slow rate of adoption from interest in 2000 to adoption by the critical mass of organisations by 2010. The findings show that factors most predictive of adoption were aligned to Rogers' compatibility attribute, which included internal and external features. In concurrence with Klein and Sorra (1996) my findings show there was an organisational fit to sustainable procurement as an innovation with the support of internal capabilities such as senior management and staff awareness programs, documented procurement processes and existing sustainable systems, frameworks and participation in external indices. These results suggest that the adoption of sustainable procurement is reliant on a compatible organisational environment which supports findings by Carter and Jennings (2004) that sustainable procurement is part of CSR.

This research contributes to institutional theory by explaining the spread of sustainable procurement in Australian organisations through institutional mechanisms. As a form of legitimacy findings show organisations adopt codes, frameworks, such as an EMS, and participate in external reporting, which are spread between peers by mimetic tendencies. In concurrence with Matten and Moon (2008) and Preuss (2009) some of these instruments, particularly EMS were found to be applied as coercive instruments to suppliers. My findings also reveal that in alignment with Bansal (2005) competitor organisations were forming alliances to pursue adoption and capitalise on economies of scale. In contrast with

recommendations by Preuss (2007b) my findings did not reveal a strong influence of normative mechanisms at play in the spread of sustainable procurement.

The next chapter, Chapter 7 clarifies both practical and theoretical contributions made by this thesis and how my research investigating Australian organisations fills the gap in the current literature and practice. It also presents recommendations to embed sustainable procurement based on the findings, the limitations of this study and suggestions for future research.

'...I think we are in a great position to drive this innovation and where does it go what does it look like there is no script...' (Interview participant).

Chapter 7.   Conclusion – embedding sustainable procurement

As the first study of its kind in this location and on this topic, this thesis has made a significant contribution towards revealing why and how Australian organisations are responding to sustainability in their purchasing decisions and what is needed to embed sustainable procurement as a routine practice in these organisations. The purpose of this final chapter is to present the conclusions in response to the research questions and clarify the various research contributions made. The chapter commences with a summary of the key findings, then, based on these, I discuss what it would take to embed sustainable procurement in Australian organisations and make recommendations to accelerate this progression. I then describe the range of theoretical and practical contributions made by this thesis. I conclude with a discussion of my research findings and some of the research limitations before concluding with an outline of opportunities for future research. Some key quotes from participants in the qualitative interviews have been used to maintain a strong grounding in the research material and provide illustration of some of the points made.

This thesis is based on the premise that organisational procurement is a persuasive and practical way of embedding sustainable development into an organisation's operations. While individual customers buy goods and services, organisations as customers consume considerably more. As a collective, Australian organisations have the potential to influence consumption patterns and sustainability substantially. On a financial scale, organisational procurement accounts for up to 30 per cent of GDP. Sustainable procurement is about 'prudence', buying with consideration for the planet and community in a way that is accountable to tax payers, shareholders, the community, the natural environment and their stakeholders. Sustainable procurement means purchasing that considers future generations and in this thesis has been defined as follows:

> Sustainable procurement is where organisations respond to their organisational objectives by engaging with stakeholders in the selection of suppliers, products and processes that respect the integrity of the natural environment and societal responsibilities to the community.

My findings indicate that at the time of this research, sustainable procurement was a discretionary organisational pursuit, not mandated by legislation or by management in organisations researched. Therefore, other drivers are motivating adoption. The findings also demonstrate that sustainable procurement forms a part of corporate sustainability. Research findings show loss of potential reputation to be the primary driver for adoption. One interview participant summarised these reputational drivers for their organisation and these views are indicative of most organisations: 'Unfortunately, as you would know, (...), the cost benefits and environmental benefits from green procurement are very obvious, but increasingly we're looking at other effects around protecting our reputation'.

In the next section I outline practical contributions to support the diffusion of sustainable procurement as the 'prudent organisational procurement practice'. This research has shown that most organisations are already pursuing green purchasing and therefore, these recommendations build on this foundation in combination with internal changes and external initiatives.

7.1 Practical contributions

To embed sustainable procurement in Australian organisations this thesis provides two practical contributions. Given the current state of sustainable procurement and taking into account the key research findings I put forward of new interventions and recommendations to strengthen existing mechanisms to accelerate the spread of this practice across organisations. Supplementing these recommendations I also provide practical guidance for procurement practitioners and researchers documenting the phases of sustainable procurement in organisations.

7.1.1 Recommendations to embed sustainable procurement

7.1.1.1 Facilitate inclusion of the social dimension in procurement

The research findings show that green procurement is the dominant current practice. To establish sustainable procurement as the normative practice green procurement needs to be supplemented with social considerations; otherwise, as one participant put it, 'organisations are at the maximum two-thirds of the three-part set'. According to the diffusion of innovation (DoI) analyses, green procurement is projected to peak in 2010. For broader adoption of sustainable procurement practices, organisations need greater support from networks, alliances and professional organisations, especially given its formative stage of development. Another recommended intervention is customising social compliance instruments and to make it easier for smaller suppliers to respond to conformance

requirements. Based on international examples raised by participants an independent Non-government organisation (NGO), or a coalition of NGOs with 'an air of credibility' are recommended to facilitate supplier and supply chain auditing and monitoring for procuring organisations.

Specific recommendations to enhance the inclusion of social dimensions in procurement include:

- Preparation of customised templates for social sustainability instruments such as International Labour Organization conventions[7] and the Social Accountability 8000 (SA8000) Standard[8] by NGOs specialising in human rights and supply chain issues
- A coalition of Australian NGOs and government to instigate a validation program for supplier accreditation for fair and equitable labour rights modelled on overseas alliances, like the Ethical Trading Initiative[9].

7.1.1.2 Make sustainable procurement a more prominent part of CSR

The research results indicate that Australian organisations are currently implementing corporate social responsibility, with many who have orchestrated large scale employee awareness training, who participate in external indices and have organisational sustainability systems and policies. As one research participant mentioned sustainable procurement is 'a really practical way organisations can demonstrate that they are doing something about sustainability'.

Specific recommendations to raise the prominence of sustainable procurement include:

- Review existing corporate sustainability instruments and reporting frameworks, to ensure inclusion of sustainable procurement practices by relevant bodies, e.g. Global Reporting Initiative and the Corporate Responsibility Index
- Include a sustainable procurement module in existing government and industry support programs that encourage organisations to implement sustainability.

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[7] www.ilo.org

[8] www.sa-intl.org

[9] www.ethicaltrade.org

7.1.1.3 Supplement competencies of procurement managers

Managers' salience of stakeholders was shown to be important in the progression of sustainable procurement. This means procurement managers need to be equipped to identify stakeholders and those stakeholders that are relevant and instrumental in implementing sustainable procurement. In addition, procurement managers require specific skills to integrate sustainability considerations into procurement decision making. Augmentation of existing CSR awareness of procurement managers with specialist procurement training is needed: as one participant put it, 'there can be more appropriate or less appropriate answers'. To prepare procurement managers for this new role will require formalised training, incentives and ongoing professional development, particularly in the realm of stakeholder management towards securing sustainable supply chains and establishing stakeholder partnerships.

Specific recommendations to support procurement managers with sustainability skills include:

- Procurement industry bodies (Chartered Institute of Purchasing and Supply Australia) to conduct training in sustainable procurement, not limited to green purchasing
- Australian Procurement and Construction Council to develop sustainable procurement competencies for procurement managers.

7.1.1.4 Build on existing procurement systems and supplier relationships

Results show that in many cases across all types of organisations documented procurement systems and policies are in place that could readily incorporate sustainability criteria. Most organisations were found to have collaborative relationships with key suppliers. The research findings show these relationships are the foundation for spreading sustainability through codes and frameworks. In association with mutually supportive supplier relationships these instruments could be the catalyst for innovative solutions to sustainability problems. Corporate organisations were found to be conducting mentoring programs with key suppliers in sustainability practices, which could be replicated by government.

Specific recommendations to support suppliers deliver sustainable procurement include:

- Government procurement agencies to develop programs to mentor key suppliers in sustainability.

7.1.1.5 Form alliances to support sustainable procurement adoption

The research findings demonstrate how alliances and networks support implementation. This was particularly true for those managed by NGOs. Findings from each sample indicate that government agencies commonly form collaborative arrangements with government program providers, while corporations favour NGO-led alliances.

Specific recommendations to support adoption through networks and alliances include:

- Industry bodies to facilitate sustainable procurement networks and alliances to support member organisations in similar sectors
- Government programs should assist government agencies implementing sustainable procurement, using specifically focused programs in response to current and future policy and regulatory requirements
- A coalition of NGOs to assist corporations to implement sustainable procurement and provide ongoing support through alliances and networks.

This section has outlined some recommendations to augment sustainable procurement adoption based on the research findings and the next section details the contribution to theory made by this research.

7.1.2 Practical guidance

As transdisciplinary researcher a defining objective is to provide practical solutions based on the investigation. My research presents two practical contributions for sustainable procurement practitioners. Firstly, this research proposes a framework to describe the types of relationships between key stakeholders and procuring organisations pursuing sustainable procurement. To guide managerial decision-making with respect to stakeholder relationships I propose a framework where the collaborative stages are not necessarily path dependent. It comprises five stages: engaging stakeholders; communication with stakeholders; stakeholder relationships; stakeholder partnerships; and networks and alliances.

Drawing the research findings and theoretical contributions together in Chapter 6, I propose a phase model for sustainable procurement based on the model developed by Dunphy *et al.* (2003, 2007). This phase model is summarised in Table 41. This model delivers management researchers and procurement managers an implementation guide. It can be used for categorising research, theory and practice on corporate social performance and sustainable procurement in

organisations in incremental steps, moving from a reactive approach to sustainable procurement to excellence in performance. The next section details the contribution to theory made by this thesis.

Phase	Procurement characteristics	Stakeholder relationships
Cost-driven purchasing (Rejection)	Purchasing is cost-driven with no consistent systems and procedures Health, safety and the environment are not a priority for products or purchasing decisions	Media as a stakeholder is feared
Non-responsive purchasing (Non-Responsiveness)	Aware of potential for integrating sustainability, but viewed as an additional cost Actively try to avoid legislative requirements for products and services	Only suppliers acknowledged as stakeholders
Risk driven purchasing (Compliance)	Reactive to legislative and contractual requirements Quality management systems including ISO 9001 and occupational health and safety guide procurement and production processes Purchasing to minimise potential risk and avoid litigation Manuals and policies for procurement aimed at reducing duplication	Supplier relationships underpinned by compliance with contract conditions and legislation
Eco purchasing (Efficiency)	Key performance indicators and targets set for resource consumption and procurement Environmental management systems based on ISO 14001 Product selected on environmental attributes, including recycled, water or energy saving using government labelling systems	Stakeholder relationships established with suppliers, NGOs and peer organisations
Green procurement *Ethical procurement* *(Strategic Proactivity)*	Supplier sustainability mentoring programs Stand-alone sustainable procurement policy Sustainable procurement is understood as part of CSR and all staff are trained Life cycle assessment considered for all products purchased Suppliers and supply chain partners screened for fair and equitable treatment of their workforces and the communities in which they operate Supplier relationships are based on mutual goals to develop innovative products Sustainability is a key competence for recruitment and professional development of procurement staff	Sustainable procurement policies, product and supplier selection procedures are socialised with key stakeholders
Sustainable procurement *(The Sustainable Organisation)*	Public reporting of purchasing Sustainable suppliers are mandated Organisation engages with community and their representatives to develop new products and services Recognised by industry as a leader in integrating sustainability principles into procurement Board level representation of sustainability and procurement	Formal strategic alliances with all key suppliers NGO partnerships for sustainable procurement

Table 41 Summary of sustainable procurement phases (This model is based on Dunphy *et al's* (2003.2007) phases and amended from the original published in Grob and McGregor 2005)

7.2 Theoretical contributions

Many authors have noted the lack of accompanying theory with sustainable procurement studies and its antecedents (Carter & Rogers 2008; Seuring & Müller 2008; Zsidisin & Siferd 2001). The conceptual framework developed in this thesis is based on established management theories to explain the adoption of sustainable procurement. My application of transdisciplinarity has supported useful and novel integration across methodological and theoretical boundaries. This research makes contributions to individual theories and collectively as a theoretical framework for future studies. These theories include institutional theory, DoI, the NRBV and stakeholder theory. This section details the contribution of these several theories.

7.2.1 Contributions to Transdisciplinarity and Methodology

This organisational procurement research contributes and extends the collection of sustainability studies that adopt a transdisciplinary approach, characterised by exploring solutions that create change in society, particularly those involving human and natural systems (Balsiger 2004; Horlick-Jones & Sime 2004; Klein 2004; Lawrence 2004; Lawrence & Despres 2004; Ramadier 2004; Robinson 2008; Russell et al. 2008; Wickson et al. 2006).

Methodologically my research has expanded the repertoire of complementary tools to examine transdisciplinary sustainability studies, including pragmatic mixed-methods design and the use of arts based inquiry. In addition to criticising the lack of theory, sustainable supply chain scholars have also been critical of case studies as the dominant method (Seuring & Müller 2008).

From a methodological standpoint, my review of the literature revealed no studies that applied transdisciplinarity and mixed methods to sustainability research. Robinson (2008: 75) noted that 'a defining characteristic of transdisciplinarity must be the creation of new theoretical frameworks that encompass but transcend disciplinary frameworks'. My application of pragmatic mixed methods contributes to the types of methods open to transdisciplinary researchers engaging with paradigmatic pluralism and diverse data gathering and analysis techniques. It offers sustainability researchers a methodological design for applying methods to solution-oriented research across diverse disciplines.

Arts-based techniques demonstrated in this thesis offer sustainability and other researchers a complementary method of inquiry, to communicate change in society by opening the discourse between art, transdisciplinarity and sustainability, to

engage with multiple audiences in the process of change. These techniques offer a supplementary tool for transdisciplinary researchers to communicate research like the uniqueness of individual cases through images that have an 'all at once ness' (Eisner 1995: 1), which can capture the ineffable and hard to convey in words that contribute toward understanding and communicating research outcomes beyond language and written forms.

7.2.1.1 A theoretical framework for investigating sustainable procurement

The theoretical framework adopted in this thesis acknowledges two research domains: individual organisations and mechanisms that spread practices amongst several organisations. This framework utilises NRBV as a base to describe the transition from green purchasing to ethical purchasing before culminating in sustainable procurement. The green purchasing literature in combination with stakeholder theory overlay Hart's NRBV strategies to articulate the progression to sustainable procurement in individual organisations. Complementing this perspective, institutional theory and DoI theory explain the forces and instruments that spread sustainable procurement practices between organisations. Together these theories support each other to elucidate adoption from a range of theoretical perspectives.

Recognising that sustainable procurement forms part of introducing sustainability in organisations, this research has theorised sustainable procurement by applying a framework of strategic management theories to the sustainable organisations literature and contributes towards the development of sustainable procurement theory and new knowledge. The relevant theories are:

- Institutional theory
- Diffusion of innovations theory (DoI)
- Natural resource based view (NRBV)
- Stakeholder theory and
- Green purchasing literature.

The theoretical framework presented in this research to explain the adoption of sustainable procurement can be replicated in other studies as a structure, or by applying each theory individually or in combinations. It can be applied to inform the wider diffusion of sustainability initiatives and cultural change programs across diverse contexts; to change behaviours in organisations, households and the community.

This theoretical framework gives researchers a scaffold for organising their research and theory on sustainable procurement and other subsets of corporate social responsibility. The framework advanced here is intended to strengthen the case for using a combination of theories, established in management, as paradigms for sustainability studies. This framework recognises that sustainability research is unique and demands novel and innovative applications to address problems that confront business and society that are beyond the conventional.

In summary, the theoretical contribution of this framework and the perspectives of individual theories are an important element in the broader understanding of the determinants of sustainable procurement adoption and other subsets of corporate social responsibility.

7.2.1.2 Contribution to diffusion of innovation theory

There have been over 5000 diffusion publications applying Rogers' models (Rogers 2004). However, relatively few have been applied to sustainability studies. This research presents the first 26-item instrument comprising seven scales, to examine sustainable purchasing as an innovation and measure its adoption in organisations. The application of Rogers' tools and in particular this framework provides several contributions to the study of innovations, procurement and sustainability. While this study centred on innovations in organisations, it may be possible to apply this model in other audiences and disciplines. Primarily, it serves as a prospective framework for wider promulgation of sustainability programs, recognising that sustainability is a unique innovation.

For sustainable procurement adoption factors, this thesis revealed only partial alignment with Rogers' attributes. The factors identified exemplify the importance of organisational features that contribute towards a receptive culture within the organisation, which also suggests an innovation fit. Theorising sustainable procurement as an organisational innovation presents organisational scholars and managers with alternative avenues to examine the organisational fit of an innovative practice before implementation, which may eventuate in cost savings.

Applying DoI as a predictive tool is helpful to indicate when the critical mass will adopt sustainable procurement. This adoption timetable signals to procuring organisations and their stakeholders, as well as suppliers to systems, products and services for subsequent adoption.

7.2.1.3 Contributions to institutional theory

In combination with DoI, this research builds on other theories to elucidate the spread of sustainable procurement as an organisational undertaking across Australian organisations. Several other authors have applied institutional theory to related research, including the spread of environmental management practices (Jennings & Zandbergen 1995), environmental management systems adoption (Darnell et al. 2008), emerging green supply chain management practices (Zhu & Sarkis 2007) and sustainable development (Matten & Moon 2008; Moon 2007) and ethical purchasing codes (Preuss 2009). However, very few studies have applied institutional theory to sustainable procurement nor combined institutional theory with other theories used in this thesis.

The innovations literature and institutional theory have promulgated the view that mandated and coercive forces lead to faster spread of practices. Sustainable procurement adoption in Australian organisations was found to be a predominantly voluntary activity. In the absence of regulation, sustainability compliance requirements placed on suppliers were found to be the prime source of coercive isomorphism. Through supplier relationships, sustainability is spread between organisations, their suppliers and their supply chains. This research contributes to institutional theory by highlighting how isomorphic forces, particularly compliance-based instruments, networks and programs act in tandem with DoI to spread adoption through groups of organisations.

7.2.1.4 Contributions to stakeholder theory

This research builds on previous studies, applying stakeholder theory to sustainability studies, including the examination of ethical purchasing (Maignan et al. 2002), environmental awareness of managers (Henriques & Sadorsky 1999) and environmental logistics (Gonzalez- Benito & Gonzalez- Benito 2006).

This research contributes towards the theorisation of sustainable procurement through a stakeholder perspective in two ways: it identifies key stakeholders in the adoption process and their relationship with procuring organisations. Key stakeholders in this study were found to be suppliers and NGOs. Based on participants' salience of these key stakeholders the research identified the posture and stakeholder culture of organisations by their response to suppliers and NGOs as stakeholders. Research findings show that most organisations adopting sustainable procurement displayed a proactive posture to suppliers and a moralist or ethical stakeholder culture in their salience of NGOs.

This application of stakeholder theory to sustainability research is useful for future researchers to identify the cultural predisposition of organisations through their stakeholder relationships as a prospective tool. This stakeholder framework also serves as a structure for other sustainability studies that form part of organisational sustainability, which could include sustainable buildings and construction research.

In summary, the framework of theories applied in this research examining sustainable procurement can serve as a template for other organisational studies, particularly those centred on sustainability. In combination these theories bring new and diverse theoretical perspectives to make a substantive contribution towards the development of a sustainable procurement theory.

7.3 Limitations

This research is not exempt from limitations. Limiting factors include the timing of the research, the methodology, the sample selection processes and unintended biases in the application of DoI as a predictive tool, and are discussed below. However, the research design provides a structure for other sustainability researchers to replicate and test the findings, which are still useful for providing a snapshot of programs and an explanation for how to facilitate further adoption.

Since the time the empirical research was conducted in 2005, the public acknowledgment of sustainability issues and subsequent institutional responses has accelerated and it is likely sustainable procurement has subsequently gained further momentum. The timing of this research was before large-scale public awareness of climate change. Internationally, the research undertaken before the release of Gore's *An Inconvenient Truth*, in September 2006, the Stern Review on the Economics of Climate Change (2006) in October and prior to the Fourth Intergovernmental Panel on Climate Change Assessment Report (2007). From an Australian perspective, my research was conducted before a series of reports on climate change in Australia, leading up to the recommendation to establish a national carbon trading scheme in 2010 and associated mandatory reporting and monitoring requirements for organisations. I expect this legislation is likely to lead to further development and greater promulgation of sustainable procurement and emphasis on carbon reduction associated with products and processes.

My research charts new territory and consequently was constrained by the lack of tested methodological models to appraise and emulate. Applying mixed methods was both a strength and a constraining factor. In this research, each method was

conducted autonomously by employing individual data collection stages and analysis regimes. In retrospect, and with greater experience of mixed methods, I would have employed greater interaction and integration between methods in the earlier stages of data collection and particularly in the analysis phase. To capitalise on diversity each method used different sample audiences. Application of both methods to one representative sample would have been a conventional path and permitted use of triangulation as a validity framework. However, such an approach was incongruent with my methodological foundations of transdisciplinarity, which seeks to uncover and celebrate richness, paradox and multiplicity and that supports and validates an evolving approach to methodology (Wickson et al. 2006).

Geographically, the research results from both components reflect adoption predominantly in Australian organisations, aside from three UK-based organisations, in the qualitative sample. The survey sample results were also skewed towards a NSW perspective, followed by other eastern states. While these research findings may be idiosyncratic to Australian organisations this thesis puts forward several approaches that can be tested in other geographic and organisational settings.

The online survey was anonymous and not representative; therefore it is it difficult to make generalisations for all Australian organisations or reproduce it in a longitudinal study using the same sample. I acknowledge that there may be a respondent bias where staff who had an interest in sustainable procurement would be more likely to complete the questionnaire and may also be subject to social desirability bias. Therefore the results, although they show that sustainable procurement practices are not widely practices in Australia, might nevertheless overstate the extent and depth of practices. Also respondents to the online survey questionnaire were self-selected, responding to the invitation out of interest or commitment to the topic area broadcast by peak bodies, which may account for bias to more favourable results. This compares with a controlled study, where invitations would be sent to a cohort as a representational sample of a population giving a sampling frame and would also provide accurate response rates, which was not available in this research. Combined with this it would not be appropriate to regard all organisations associated with the peak bodies as forming the sampling frame, as all organisations within this group might not have been exposed to the request to participate in the study. However, given the time constraints of doctoral research this approach saved time and reduced costs significantly. While the results are not representative, the instrument surveyed a significant number of

organisations and these results together with the qualitative component contribute to the overall findings.

There are also some inherent limitations to a multiple case study approach. The qualitative sample was based on the procurement manager's perceptions and interpretations of the sustainable procurement practices in their organisation. The data is relies on the fact that the interviewee's perceptions accurately reflect the organisation's practices. Boyer and Pagell (2000) note that the reliability of findings improves if data are collected from multiple sources in a single setting. Aside from one organisation, where I interviewed two representatives, and two instances with two interviewees in one interview, all others were with single representatives. This was necessary as the practice was so new and rarely more than one person had responsibility or experience in this area of operations. However, findings from the qualitative sample were essential to provide a broad range of opinions from participants based on practical experience.

Results referring to the predicted diffusion of sustainable procurement, as an innovation should be made in light of some unintended biases. The survey applied DoI as a predictive tool to forecast the adoption in a single instrument. A preferable alternative and potentially more reliable method would have been to collect data at various other points in time to corroborate the S shaped curve. This option would not have been easy, as the survey was anonymous and therefore the same sample audience would be difficult to replicate. Rogers (2003: 113) notes the advantages of this approach, as 'respondents do not have to recall information about their date of adoption of the innovation over such a long time period'. A bias of greater concern is 'the tendency of respondents to answer in a favourable manner, which may have returned an earlier proposed date of adoption' (Rogers 2003). As the survey was conducted in late 2005 this may be an influencing factor based on the high number of responses indicating the next year, 2006, as the likely timeframe for adoption.

The missed opportunity to include social sustainability issues as part of my survey is an additional shortcoming. The survey focused solely on 'environmental' issues in purchasing, which was the dominant focus in Australian organisations at the time. However, based on the interview responses, most Australian organisations were practising sustainable procurement as environmental procurement, which aligns with the survey. The only exceptions in the qualitative sample were companies with head offices outside Australia. Also, an alternative design that

utilised the qualitative method first might have overcome this limitation. However, regardless of these limitations this research stands up and makes important contributions to the theory and practice of sustainable procurement.

7.4 Future research

Taking into consideration the limitations of the research, there are several possible directions for future research, either to extend this research or undertake new supplementary research. For the sustainable procurement theory to develop and the literature to expand the most critical area of future research is a more detailed investigation of the social component of sustainable procurement. This research highlighted the formative nature of sustainable procurement that incorporates social dimensions in Australian organisations. Therefore, future research could focus more clearly on elucidating the social dimensions of sustainable procurement and its conceptualisation in the same way as environmental procurement has been presented in this thesis. Further investigation could investigate how procurement practitioners are prioritising the consideration of environmental and social dimension in their purchasing decisions. Given sustainable procurement was found to be an emerging practice there is potential to replicate the DoI predictive tool and attributes of innovations scales to examine the diffusion of sustainable procurement that incorporates social criteria on the qualitative sample audience.

The support of senior management is another area of potential research. Findings show the role of senior managers was pivotal to introduction. Future research would examine the influence of the procurement manager's involvement in sustainable procurement as a profession by exploring the relationship between their attitudes and behaviours towards sustainability in the workplace and other domains of their lives.

Methodologically, research examining the broader application of art-based inquiry techniques as an alternative method for communicating the potential benefits of sustainable procurement and sustainability more generally to organisations and groups is an additional future research opportunity.

Lastly, collaborative relationships were found to be a defining feature of adoption; therefore, future research could investigate sustainable procurement adoption from multiple organisational perspectives including NGOs, suppliers and government and networks and alliances and their experiences with procuring organisations in the

pursuit of sustainable procurement practices. Extending the collaborative nature of sustainable procurement and characteristics of transdisciplinarity research a future study could work closely with alliances and networks to examine the progression in member organisations against the phases in the phase model presented.

7.5 Significance of this research

This thesis presents novel transdisciplinary mixed-methods research in its application and findings; few studies have examined the introduction of sustainable procurement as a triple bottom line activity and none have applied the combination of management theories in my framework to illuminate the range of insights into adoption. Additionally, there are no scholarly studies that examine the adoption of sustainable procurement in corporate and public organisations in Australia.

As has been described in previous sections of this chapter this thesis contributes with breadth and depth to the body of knowledge, development of theory and practice of sustainable procurement. It makes a contribution towards the development of sustainable procurement theory by applying a range of theories including innovation theory, diffusion of innovations theory, a natural resource based view and stakeholder theory, which may serve as a foundational theoretical scaffold subsequent research. Complementing the scholarly findings this research delivers practical assistance to procurement professionals. It presents a roadmap for organisations to introduce sustainable procurement, which can be applied alongside Dunphy *et al.'s* (2003) model for corporate sustainability. Sustainable procurement forms part of the business model of corporate sustainability. It could be claimed that without introducing sustainable procurement an organisation has not fully integrated sustainability into their operations and potentially risks exposure of their reputation and image.

The ultimate significance of this research is that it demonstrates the potential role that organisational procurement plays in the promulgation of sustainability to foster sustainable innovation. Through sustainable procurement relationships with suppliers and other stakeholders sustainability is diffused through networks and supply chains, which have the capacity to deliver a more sustainable world delivering more innovative solutions to problems confronting our society and the natural environment.

Chapter 8.   References

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Chapter 9. Appendices

Appendix A   Interview participant information

Sustainable Purchasing in Organisations

Purpose of this Research

The purpose of this research is to investigate how and why Australian organisations are incorporating sustainability criteria into their purchasing decisions. Organisations purchase or buy commodities either to support their core business objectives or directly as part of a supply chain in the production or distribution of goods and services.

What is sustainable purchasing?

Sustainable purchasing is part of an organisational culture. It means buying products which contribute towards: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[1] This purchasing practice supports an organisation's core activities or is part of a supply chain. Organisations integrating sustainability into their purchasing activities take into account more than financial aspects. Sustainable purchasing can involve consideration of:

- economic considerations such as price, quality and cost over the life of the product;
- environmental aspects including the impact of the product or service over its entire lifecycle from raw materials extraction, transport, to use and disposal;
- social impacts of the manufacture, use and disposal of the product or services, including respect for human rights and supporting disadvantaged groups in society.

Research Participants

The research focuses on the experience of organisations in the public, private and not for profit sectors and the roles they play in participating in, enabling and encouraging sustainable purchasing practices.

Research Methods

Initially, this study will investigate the adoption of sustainable procurement through a questionnaire distributed to a wide variety of organisations. It aims to gain a broad understanding of the extent and spread of sustainable purchasing and its relationship to organisational profiles.

The next stage of research will examine the approaches employed by organisations and seek to gain an in-depth understanding of why organisations pursue sustainable purchasing. It also aims to document the obstacles and opportunities, learning from the experiences across different industry sectors by interviewing staff in their organisations.

The final stage of research is to evaluate the impact and influence of collaborative arrangements on the implementation and diffusion of this phenomenon. This stage analyses the various roles played by different types of organisations in supporting and encouraging the uptake of sustainable procurement through sustainable purchasing practices, producing sustainable products, regulation and advocacy of the purchase of sustainable products.

These primary research methods will be informed and supplemented by an analysis of published reports, policies and documents.

Research Deliverables

The results of this research will be published in the form of journal articles, conference papers and a PhD thesis, available from the University of Technology, Sydney library upon completion.

Research Outcomes

The outcome of this research is to provide a guide for organisations seeking to pursue sustainable procurement and promoting alternate purchasing models that respect the future of the human and natural environment.

[1] World Commission on Environment and Development 1987, Our Common Future, Oxford University Press, Oxford

Participant involvement in Interview phase

PhD Thesis – "Sustainable Organisational Procurement pathways of transition"
HREC No 2005-072

Research Aims
The overall aim of this research phase is to understand and document the motivations, opportunities and obstacles experienced by organisations integrating sustainability into their purchasing decisions. Sustainable purchasing includes buying sustainable products, manufacturing and supplying organisations with sustainable products and encouraging organisations to adopt practices that take sustainability concerns into account when purchasing as an organisation.

Time commitment
I estimate that the interview will take no longer than one and half hours in total.

Interview format
The interview will take the form of a series of semi structured questions related to the experiences of your organisation regarding sustainability and procurement. The entire interview will be recorded on a dictaphone and later transcribed for analysis.

Participation is voluntary
Participation in this project is entirely voluntary and you are at liberty to withdraw from participation at any time during the course of the project.

Participant anonymity
No findings which could identify any individual participant or organisation will be published. The research data gathered from this project may be published in my PhD in a form that does not identify the participant in any way.

Benefits to participants
Participation in the research will entitle all respondents to a condensed report summarising the combined findings. This will provide valuable feedback on the status of current sustainable procurement activities in Australian organisations.

Supervisors
If you have any concerns relating to this research please contact my supervisor Professor Stuart White on (02) 9514 4944 from the Institute for Sustainable Futures, University of Technology, Sydney.

Ethical concerns
This study has been cleared for circulation by the University's Ethics Committee Reference No 2005-072 and as a condition of approval the anonymity of participants is assured, all responses are confidential and only aggregate findings will be reported. Enquires concerning ethical issues should be directed to the Research Ethics Manager on (02) 9514 1279.

Consent form
As part of the Ethics process you will be asked to sign a formal consent and retain a copy for your records.

Appendix B   Survey questionnaire

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Questionnaire - Environmentally sustainable purchasing in organisations

I invite you to participate in my research survey which is being conducted as part of my PhD studies at the Institute for Sustainable Futures at the University of Technology, Sydney.

I am interested in the purchasing habits and experiences of all types of organisations in Australia, ranging from public, private and not for profit sectors, small to global representing all industry sectors. This study aims to uncover if organisations are considering environmental sustainability in their purchasing decisions and to what extent this practice is occurring across Australia.

Organisations integrating environmental sustainability into their purchasing decisions consider more than financial aspects. For example, taking into account environmental sustainability in purchasing includes consideration of the impact of a product on the natural environment over its entire life, from raw material extraction to disposal. Also, it may consider the resources such as energy and water required, for example, to operate equipment and the greenhouse gases, toxic materials and waste generated as a result of its use.

Please take the time to complete this survey. I estimate this should take no longer than 10 minutes and will provide valuable insights into organisational purchasing and sustainability in Australia. A summary report of the findings will be available to all participants.

If you have any questions, please contact: Suzanne Grob E-mail: Suzanne.M.Grob@uts.edu.au

Please reply by 30th November 2005 to

Fax: (02) 9514 4941 *Any identifying information on your faxed response will be removed.*
Post: Environmentally Sustainable Purchasing Questionnaire, Institute for Sustainable Futures P.O Box 123 BROADWAY NSW 2007
Online: The survey is located at the following website. http://surveys.uts.edu.au/index.cfm?surveyid=1238

If any of your questions or concerns about this survey are not satisfactorily answered, contact:
PhD Supervisor: Professor Stuart White,
The Institute for Sustainable Futures, University of Technology, Sydney
PO Box 123 Broadway NSW 2007 Ph: 02 9514 4944

Or, if the questions are of an <u>ethical</u> nature, contact:
The Research Ethics Manager, Ms. Susanna Davis,
Human Research Ethics Committee.
University of Technology, Sydney
PO Box 123 Broadway NSW 2007 Ph: 02 9514 1279

Part A Organisational Profile

Tick the response that most accurately reflects your organisation

1. In which industry is your organisation primarily involved?

☐ Agriculture, Forestry & Fishing	☐ Finance & Insurance
☐ Mining	☐ Property and Business Services
☐ Manufacturing	☐ Government Administration and Defence
☐ Electricity, Gas & Water Supply	☐ State Government
☐ Construction	☐ Local Government
☐ Wholesale Trade	☐ Education
☐ Retail Trade	☐ Health & Community Services
☐ Accommodation, Cafes & Restaurants	☐ Cultural and Recreational services
☐ Transport & Storage	☐ Personal & Other services
☐ Communication Services	☐ Not for Profit organisation

2. How many (including part and full time) employees are there in your organisation?

☐ Between 1-4 employees	☐ Between 201-1000 employees
☐ Between 5-20 employees	☐ Over 1000 employees
☐ Between 21-200 employees	

3. What is your organisation's annual spending (excluding accommodation and labour costs) on purchasing goods and services?

☐ Less than $50,000	☐ $1 -5 million	☐ $50 – 100 million
☐ $50,000 - $100,000	☐ $5 -10 million	☐ $100 – 500 million
☐ $100,000 - $500,000	☐ $10 - 50 million	☐ Over $500 million
☐ $500,000 - $1 million		

4. What is the primary country of ownership of your organisation?

☐ Australia	☐ Other country *(please specify)*_____

Part B Purchasing in your organisation

Please indicate the extent to which the following influence <u>purchasing</u> in your organisation

	Not at all					Very much	
1. Quality Management System certified to ISO 9001	1	2	3	4	5	6	7
2. Environmental Management System ISO 14001	1	2	3	4	5	6	7
3. Public sustainability reporting eg Global Reporting Initiative.	1	2	3	4	5	6	7
4. Organisation wide policies and programs	1	2	3	4	5	6	7
5. A commitment from senior management to sustainability	1	2	3	4	5	6	7
6. Strategic partnerships negotiated with suppliers	1	2	3	4	5	6	7
7. Contracts with suppliers	1	2	3	4	5	6	7
8. Department or business unit procedures	1	2	3	4	5	6	7
9. Employee driven initiatives	1	2	3	4	5	6	7
10. A central purchasing department for the entire organisational	1	2	3	4	5	6	7

Part C Organisational innovativeness

Please indicate the extent to which the following <u>describes your organisation</u>

	Not at all					Very much	
1. Our CEO is receptive to innovations to improve business performance	1	2	3	4	5	6	7
2. One or two people are responsible for sustainable purchasing	1	2	3	4	5	6	7
3. The majority of our staff possess tertiary qualifications	1	2	3	4	5	6	7
4. There are high levels of communication between departments in our organisation	1	2	3	4	5	6	7
5. Our organisation is willing to make available uncommitted resources to deliver new programs	1	2	3	4	5	6	7
6. Our workforce can be described as highly skilled	1	2	3	4	5	6	7

Part D Attributes of sustainable purchasing

For each statement circle the rating that most accurately reflects your organisation's experiences and practices

	Not at all					Very much	
1. Environmentally sustainable products cost more to buy	1	2	3	4	5	6	7
2. Buying environmentally sustainable products is a means of differentiating our organisation against our competitors	1	2	3	4	5	6	7
3. Buying environmental products delivers savings to my organisation	1	2	3	4	5	6	7
4. Buying environmental products is compatible with our organisational values	1	2	3	4	5	6	7
5. Adopting environmentally sustainable purchasing practices increases the morale of our employees	1	2	3	4	5	6	7
6. It is too complex to consider sustainability in purchasing decisions	1	2	3	4	5	6	7
7. My organisation has piloted buying environmentally sustainable products	1	2	3	4	5	6	7
8. Products that use less resources in their manufacture and use are visible in my organisation	1	2	3	4	5	6	7
9. The experiences of organisations undertaking environmentally sustainable purchasing is discussed in our organisation	1	2	3	4	5	6	7

Part E Organisational purchasing practices and sustainability

For each statement circle the rating that most accurately reflects your organisation's experiences and practices

		Not at all					Very much	
1.	Environmental sustainability is a key consideration of supplier selection	1	2	3	4	5	6	7
2.	Environmental sustainability is a key consideration in product selection	1	2	3	4	5	6	7
3.	Environmentally sustainable purchasing forms part of our sustainability program and policies	1	2	3	4	5	6	7
4.	The cost of environmentally sustainable products is a barrier to implementing sustainable purchasing programs and policies	1	2	3	4	5	6	7
5.	The cost of introducing environmental sustainable purchasing programs is a barrier to introduction	1	2	3	4	5	6	7
6.	Lack of staff awareness of environmentally sustainable products is a barrier to implementing sustainable purchasing	1	2	3	4	5	6	7
7.	Lack of organisational knowledge about environmentally sustainable purchasing practices is a barrier to implementing sustainable purchasing	1	2	3	4	5	6	7
8.	Senior management supports sustainable purchasing practices	1	2	3	4	5	6	7
9.	Collaboration with other organisations has assisted the organisation's progress in environmentally sustainable purchasing	1	2	3	4	5	6	7
10.	The quality of environmentally sustainable products is a barrier to introducing sustainable purchasing programs and policies	1	2	3	4	5	6	7
11.	The availability of environmentally sustainable products is a barrier to implementing sustainable purchasing programs and policies	1	2	3	4	5	6	7
12.	Our suppliers are encouraging our organisation to purchase environmentally sustainable products	1	2	3	4	5	6	7
13.	Our customers are encouraging our organisation to purchase environmentally sustainable products	1	2	3	4	5	6	7
14.	Environmentally sustainable purchasing practices reflect our organisation's desire to be innovative.	1	2	3	4	5	6	7

15.	Does senior management in your organisation mandate environmentally sustainable purchasing?	☐ Yes	☐ No
16.	Do business units have the freedom to undertake environmentally sustainable purchasing, as long as they meet targets and adhere to policies?	☐ Yes	☐ No
17.	Do staff have the option to purchase environmentally sustainable products?	☐ Yes	☐ No

Part F Collaboration with other organisations

1. Is your organisation involved in collaborate arrangements with other organisations to progress sustainable purchasing?

☐	No, go to Part G	☐	Yes,

2. What type of organisations does your organisation partner with to progress sustainable purchasing? *(tick more than one if appropriate)*

☐ Non government organisation ☐ Industry association
☐ Government department ☐ Not for profit environmental advocate organisation
☐ Community group ☐ Other *(please specify)* _____

Name of network/alliance *(please specify)* _____

Part G Integrating environmental sustainability into purchasing

For each statement provide a rating that most accurately reflects your organisation's experiences and practices

	Not at all					Very much	
1. Our organisation has identified a gap between its environmental policies and programs and its purchasing practices	1	2	3	4	5	6	7
2. Introducing environmentally sustainable purchasing is consistent with our organisation's environmental goals and existing programs	1	2	3	4	5	6	7
3. Our organisation has customised environmentally purchasing models from other organisations to suit our organisation	1	2	3	4	5	6	7
4. Environmentally sustainable purchasing has been implemented across the entire organisation	1	2	3	4	5	6	7
5. Environmentally sustainable purchasing is a routine practice in our organisation	1	2	3	4	5	6	7
6. Environmentally sustainable purchasing in the organisation has been reviewed and changed significantly over time	1	2	3	4	5	6	7

Part H Adoption of environmentally sustainable purchasing practices

For each statement write the year your organisation commenced or would consider commencing the relevant phases of sustainable procurement

	19__	20__
1. When did your organisation first become aware of sustainable purchasing practices?	19__	20__
2. When did/might your organisation become interested in sustainable purchasing practices?	19__	20__
3. When did/might your organisation first seek additional information about sustainable purchasing practices?	19__	20__
4. When did/might your organisation first apply sustainable purchasing practices?	19__	20__
5. When did/might your organisation first buy sustainable products?	19__	20__
6. When did/might your organisation trial sustainable purchasing in your organisation?	19__	20__
7. When did/might your organisation adopt sustainable purchasing as an organisation wide practice?	19__	20__

Please make any additional comments you wish to add

Thank you for taking the time to complete this questionnaire

Please return by November 30th 2005 to

Fax: (02) 9514 4941 *Any identifying information on your faxed response will be removed.*
Post: Environmentally Sustainable Purchasing Questionnaire, Institute for Sustainable Futures
P.O Box 123 BROADWAY NSW 2007