

**CONVENIENT IMMORALITY:
A SUBSTANTIVE THEORY
OF COMPETITIVE PROCUREMENT IN THE NEW ZEALAND CONSTRUCTION
INDUSTRY**

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ABSTRACT

Fragmented and adversarial are words used routinely to describe firstly the structure of the construction industry, and secondly the inherent culture that continues to exist within it. Both are characteristics that ultimately serve to not only routinely constrain the efficiency, performance and resultant productivity of the New Zealand building sector, but moreover they persist to play a part in increasing related costs whilst diminishing the quality of the built environment surrounding us. The ubiquity of the outsource model goes some way towards mitigating much of the risk and financial encumbrances that large construction companies have historically faced. But consequentially it is directly responsible for an industry now propagated mostly by small, specialist trade subcontracting organisations that for the most part are reliant upon securing work through construction companies. Contiguous to a degree is the propensity of an industry focussed upon procuring construction by means of competitive tendering, an approach whereby successful bids are traditionally weighted towards those incorporating the lowest initial cost.

To garner an understanding of the role that contextual significance plays in construction procurement this study was facilitated by utilising a constructivist grounded theoretical approach. Data was generated by the way of fifty interviews with construction industry stakeholders, inclusive of Sub-Contractors, Main Contractors, Consultants, Architects and Clients. Subsequent analysis reveals that in response to power asymmetry and other environmental conditions, organisations have developed numerous proactive, reactive and opportunistic strategies and behaviours that become evident as the procurement process progresses. This study highlights and explains the relationships and factors from which an industry actor's rationale is drawn. Furthermore, however, it argues that the proponents of construction industry procurement will when necessary, relax their ordinarily pre-conditioned moral constraints and consciously venture into business practices considered by their peers to be somewhat immoral.

DEDICATION

To my late brother Kevin who passed never knowing the inspiration he gave me.

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Glossary of Terms

Bid	The process of offering a quote or proposal to a third party for acceptance.
Bidder	The party submitting a bid
Consultant	Individuals or organisations with specialist knowledge employed in the building design process
Design & Build	A construction process wherein a contractor is responsible for both the design and construction of a building or project usually for a lump sum price.
Main Contractor	A contractor employed to manage and oversee construction projects.
Project Manager	An individual or organisation employed by a building owner to plan and manage the construction process
Quantity Surveyor	An individual responsible for quantifying and measuring the amount of materials and costs necessary to complete a construction project
Retention Payments	Money held back by a Client to ensure a Contractor completes any remedial work that may become evident during the post practical completion defects period.
Schedule of Quantities	A list of materials and/or labour rates compiled by a quantity surveyor for the purpose of calculating the cost of part or all of a construction project.
Subby	A slang term used to refer to a Sub Contractor (See below)
Sub Contractor	Can be either an individual or organisation employed by a larger organisation to complete a particular or specialist aspect of a construction project
Tag	A term used amongst the construction industry fraternity to denote a variation or omission included in a bid that differs from the intent of the original specification documentation
Tender	A term used when an organisation wishes to procure a construction project, i.e. the project is 'put out to tender'. Often however tender is used interchangeably with bid and understood by many to have the same meaning.
Tender Bombing	A phrase used to describe a process wherein a contractor submits bids to all parties (both known and unknown to them) who maybe compiling a proposal for a construction project in the hope of improving the likelihood that they can secure part of, or all of the project.
Turnkey	Is used to indicate a project that is complete in all regards and ready for immediate use/occupation

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Amongst organisations adopting functional line management the classical norm has traditionally facilitated tight control and governance whilst maximising organisational learning and efficiencies. The Construction industry's organisational structure differs, in so much as it is primarily project based, remote from head office, reliant upon decentralised control and contracted Small and Medium Enterprises (SMEs). This transient governance is partly responsible for the inefficiencies inherent within an industry that at year end June 2009 had contributed 4.4 per cent of New Zealand's Gross Domestic Product (GDP) (Investment New Zealand, 2009), a figure which could be increased by almost twenty five per cent if efficiency were increased by ten per cent (Le Masurier, 2006). The net effect of this would be an industry sector with a greater GDP than Agriculture (4.9 per cent) (Investment New Zealand, 2009).

It is widely accepted that both customer/supplier and supplier/supplier relationships in the construction industry are adversarial by nature (Khalfan, Eriksson, Dickinson, & McDermott, 2006; Maturana, Alarcón, Gazmuri, & Vrsalovic, 2007; Welling & Kamann, 2001), ensuring an inefficient industry. Parties are primarily pre-disposed to this behaviour because of industry fragmentation and the opportunistic behaviour of actors, who historically have had a proclivity to procure suppliers through a competitive tender process whereby the successful submission, is ordinarily equated with being the lowest bid. Fragmentation is a result of Main Contractors' desire to mitigate risk and increase production whilst maintaining organisational flexibility (Maturana, et al., 2007; Pietroforte, 1997). In consequence up to ninety per cent of a project's value is now subcontracted to specialists (Eriksson, Dickinson, & Khalfan, 2007; Lehtonen-Wegelius, 1998; Vrijhoef & Koskela, 2000), who invariably change from one project to the next (Miller, Packham, & Thomas, 2002). Effectively this reduces any potential scope for collaboration, limiting on-going learning, standardisation and efficiency (Wegelius-Lehtonen & Pakkala, 1998).

The introduction of Supply Chain Management (SCM) revolutionised the manufacturing industry. However, traditional procurement methods have been responsible for limiting successful adoption of SCM, and implementation within the construction sector (Saad,

Jones, & James, 2002), and are responsible for preventing the implementation of many practices familiar within manufacturing such as total quality management (TQM), just in time (JIT) and Lean construction. Fundamentally SCM highlights interdependency of suppliers and the need for integration to improve processes (Vrijhoef & Koskela, 2000), whilst eliminating organisations' propensity to increase profit margins by opting for the lowest cost supplier (Simatupang & Sridharan, 2008). These are principles that for the most part remain alien concepts within the context of procurement within the construction industry. Thus the industry continues to move forward constrained by its own inherent inefficiencies. Previous research has attempted to address this issue but has tended to focus predominantly upon the relationships between actors at the head of the supply chain, i.e. Clients, Architects and Main Contractors (Bresnen & Marshall, 2000b) largely ignoring the contributions and importance of other participants such as Sub-Contractors (Saad, et al., 2002).

1.2 PURPOSE OF THE STUDY

In recent years much of the literature and research relating to the Construction Industry has been driven by the reports of Egan (1998) and Latham (1994). The Latham report especially was a turning point within the construction sector. Both reports nonetheless focussed upon the need to minimise the adversarial nature of the industry, and create more co-operative relationships between co-dependent organisations, whilst removing the industry norm of procuring projects via a model of competitive tendering. To increase the likelihood of attaining these objectives partnering between supply chain members was suggested (Murray, 2003).

Although published several years ago, and widely cited since, the recommendations from the Egan report (1998) supporting partnering and collaboration have failed to significantly filter through and become an integral part of the New Zealand construction industry's psyche, especially within the predominant lower echelons of the supply chain. With such reticence to accept calls for changes to historical procurement approaches, traditional competitive procurement prevails.

It is thus considered unlikely that in the short to medium term the industry will make any significant moves away from competitive procurement and undoubtedly this will continue to consign the industry to a future of low productivity and poor performance; at least until

the inefficiencies currently inherent in the competitive procurement model can be adequately identified and understood.

The purpose of this study is to go some way towards achieving this objective and highlight the issues, causes and consequences that reside in, and result from the competitive procurement model. To meet this end this study has been undertaken using a grounded theory (Glaser, 1978; Glaser & Strauss, 1967) methodological approach. It specifically follows the tenets of a constructivist paradigm and furthermore congruous to the traditions of grounded theory it is not guided by a defined research question. To quote Birks and Mills (2011, p. 20) “A key characteristic of traditional grounded theory research is that the researcher enters the field of study without the narrow research questions or hypotheses common in other research designs”, rather focus is more directed to “[a] general problem.... [n]ot based on a preconceived framework of concepts” (Glaser, 1978, p. 44; Glaser & Strauss, 1967, pp. 45-46).

1.3 RESEARCH AIM

The research aim and objective of this study is to identify and understand the organisational strategies, actions and behaviours of actors working within a model of competitive procurement in the New Zealand construction industry.

1.4 RESEARCH SIGNIFICANCE

The study offers numerous insights into the construction industry, which are both significant and important to industry practitioners, and also those with research interests in organisational behaviour and culture. Construction industry productivity and procurement have previously been identified as areas that require further research. The relevance of which was highlighted within a 2009 report of the Building and Construction Sector Productivity Taskforce (BCSPT, 2009), that highlights the economic value of the industry to society. It stipulates that annually the construction industry as a whole renovates 32,000 homes, builds 24,000 houses, and \$4,000 million worth of commercial buildings. Furthermore, it employs 8.3 per cent of the workforce, whilst between the years of 2003 and 2008 it accounted for sixty six per cent of employment growth amongst Maori.

The value of organisations “doing the right thing” was discussed by Cialdini, Petrova and Goldstein (2004), who argue that by not doing so the likely consequences are deleterious to

fiscal success. They further suggest that “In any organization, people are motivated by myriad factors – sales quotas, corporate economic health and survival, competitive concerns, career advancement and so forth – which can easily override their moral compass” (2004, p. 67). A company’s focus on “doing the right thing” is not necessarily a question of organisational ethics per se, rather a question of morality. Ethics according to MacCoby (2005) is rooted in compliance and conformity with prescriptive rules, whereas morality he says “[h]as to do with reasoning and behaviour according to values that go beyond self-interest”(2005, p. 59). Or as Fellows, Liu & Storey (2004, p. 290) would assert “Morals concern judgements of what is right and what is wrong, what behaviour is good and what is bad”, and taking the concept of morality a step further Lennick & Kiel (2006, p. 14) talk of morally intelligent organisations posited as an organisation:-

whose culture is infused with worthwhile values and whose members consistently act in ways aligned with those values. A morally intelligent organization’s major characteristic is that it is populated with morally intelligent people.

The significance of this study is attributable to the research sample, the chosen methodology and the lens through which construction procurement has been viewed. Respondents were sought across the supply chain, grounded theory allowed for serendipitous findings and procurement practices were considered from a moral, not purely functional perspective. The net result of which is findings that are both relevant and credible, but moreover have on-going practical and theoretical implications.

This study enables construction industry stakeholders to re-evaluate and perhaps re-frame the competitive tender procurement process with a view to improving current inefficiencies, by taking account of the emergent substantive theory of Convenient Immorality (CI) advanced in this thesis. CI is significant because it highlights the propensity for organisations to “override their moral compass” when economic necessity dictates, and subsequently act immorally. Moreover, it demonstrates how economic value can be eroded within the construction industry when certain contextual characteristics exist. Furthermore, this research highlights numerous strategic behaviours adopted by industry players, construed by their peers to be immoral, but that are nevertheless rationalised by the protagonists themselves.

These research findings also have significance because they contribute to the debate regarding moral organisations and the unquestionable value of moral intelligence. It provides demonstrable evidence of the need to engender organisational and industry cultures wherein both individuals and businesses raise their awareness of the detrimental consequences of poor moral judgement. More than this, the study reveals the key triggers and motivators leading to the immoral organisation that both industry and company leaders should look to mitigate.

1.5 THESIS OVERVIEW

This thesis comprises the seven chapters outlined below.

Chapter one introduces the study, situates it within the New Zealand construction industry and briefly discusses the historical context of competitive procurement within the sector. It proceeds to describe the purpose of the study, the research aim, and concludes with a discourse appertaining to the significance of the study and its findings.

The second chapter presents 'Pre-Understanding'. It commences by introducing the concept of Pre-Understanding and suggests why it is relevant to any research study. As the author of this study has significant prior professional experience working as a practitioner within the field of this research, a discussion outlines the antecedents that contributed to his own pre-understanding and inherent tacit knowledge. The chapter continues to discuss the facets of an individual's pre-understanding, why a researcher should always consider its influence, and both the dangers and benefits it poses for a study. Following on, the discussion describes the ways and means that a researcher can hold pre-understanding at bay and mitigate its influence on research. The chapter concludes with an overview of the author's pre-understanding upon commencement of this study and how he accounted for it during the on-going research process.

Chapter three describes the research methodology used to facilitate this study, and embarks by firstly locating the field. Discourse outlines the salient distinctions between quantitative and qualitative research, and argues why this study is particularly suited to a qualitative approach. The chapter goes on to discuss the importance of researchers considering their 'world view' prior to commencing study, positing that any adopted research paradigm

should ordinarily be consistent with the personal epistemological and ontological beliefs of the researcher themselves. Further, it draws attention to the inter-relatedness of the four underlying aspects of any research paradigm: ontology, epistemology, axiology and methodology, and the need to consider them both simultaneously and holistically. It presents an overview of the most common paradigmatic positions and the rationale for electing to undertake this study through a constructivist lens. The chapter closes by identifying and justifying the chosen strategy of inquiry and by briefly outlining the evolution of grounded theory.

The fourth chapter describes the strategies, techniques and processes used to facilitate data generation and analysis. It leads with a brief chapter synopsis which is thus followed by an introduction to the process of undertaking a grounded theory study. The chapter describes the analytical process of coding and the different guises coding can take. The discussion goes on to outline some of the fundamental aspects of grounded theory that together underpin the theoretical integrity of the approach, namely constant comparative analysis, memoing, theoretical sorting, sampling and the need to acquire theoretical saturation. Prior to explaining and describing the research context, discourse outlines the strategic steps necessary to gather and generate data. The sampling techniques adopted are discussed as is the approach utilised to gain access to the field and the interview and security protocols adopted. This study, like so many nowadays, used computer aided qualitative data analysis software to assist with the management and analysis of data. Hence this chapter presents the rationale for doing so, and discusses how features of the application NVivo were beneficial. The chapter concludes with a discussion around the strategies implemented to ensure academic rigour and ethical integrity.

Chapter five, research context, is included to aid audience understanding. Specifically alluding to the environmental and organisational context that envelops the studied phenomenon, and from which the subsequent constructivist interpretation described in this thesis is drawn. Commencing by outlining the industry demographics and make up, the chapter continues to discuss the emergence of subcontracting and issues surrounding the recruitment and selection of Sub-Contractors. Following which an historical overview of problems associated with procurement is included, as is a brief comparison of the current most commonly used procurement routes in New Zealand today.

Following a brief introduction to chapter six, which is entitled 'Findings', an overview of Convenient Immorality (CI) describes the type of behaviour it exemplifies, and its relationship with competitive procurement. Subsequent to which, the narrative, with the assistance of quotes taken verbatim from interview transcripts, explains why the construction industry continues to persist with this type of procurement approach. Discussion then turns to the competitive intensity of the industry and the asymmetrical power that reveals itself in the relationships between relevant actors. The remainder of the chapter, aside from outlining the supporting roles that both trust and influence have to play, focuses upon introducing and explaining the numerous concepts to emerge from the findings of this study that are in essence the foundation of CI.

Chapter seven, the final chapter initially summarises the key findings of this study, before introducing the substantive grounded theory of Convenient Immorality. With the aid of a model the discussion identifies key strategic behaviours and the individual characteristic components that contribute to each. After an explanatory discourse outlining the influence, and role that situational context plays in Convenient Immorality, the discussion addresses the effect other procurement methods may have upon the morality of industry actors. The chapter closes with a final discussion and concluding remarks, subsequent to which the contributions this study makes to research, its implications and limitations are identified as are opportunities for future research.

CHAPTER 2

PRE-UNDERSTANDING

2.1 INTRODUCTION

Research topics invariably emerge from a researcher's previous interest in or exposure to a problem within a relevant field. Within the context of any study, but particularly one that may be considered to be interpretive or hermeneutic, it is wise to assume that the potential exists for the study to be heavily influenced by the beliefs and philosophical underpinnings of the researcher. It also follows that other factors may contribute to the degree of influence. Amongst them may be such things as the level of educational achievement and the point to which the researcher has been exposed to the world in general prior to the study. But perhaps more importantly is their knowledge of, or experience within, an arena specific to phenomena under investigation. Unquestionably any one, or combination of these, or of any other factors has the capacity to lead to researcher presuppositions regarding the inquired phenomena. Further, previous experience may lend itself towards the researcher unwittingly shaping data interpretations. Ultimately prior first-hand knowledge of a research context can inflate the risk of researcher bias, affecting decisions regarding the research design, and the subsequent findings and outcomes from a study.

2.2 ANTECEDENTS OF PRE-UNDERSTANDING

This and the following section address the origins of the researcher's pre-understanding. So, in the interests of clarity, this and other selected sections from this point onwards are written from the perspective of the first person.

Robert Burgess (Burgess, 1984), is correct to argue that a researcher's own experience can influence research, a fact evident in this study. Mine would certainly not be the professional background atypical of, and attributable to that of a doctoral researcher. Admittedly this was an influencing factor in determining the selection of the study topic. The impetus for which was drawn from my own frustrations of years spent working within the construction sector, both in the United Kingdom and more recently New Zealand. It is without question that when formalising my thoughts appertaining to a worthwhile issue to study, I was influenced by both my previous professional and personal life. For example, I was originally proposing to study some aspect of corporate governance, an area of particular interest to

me but that from a professional perspective I had minimal practical experience to apply. It was several months before I disregarded this notion because it was not sufficiently exciting to maintain my interest over an extended period of study. Maybe with practical experience at board level I would have been enthused by some egregious facet of governance suffice to bear interest. During the many months I spent considering and reflecting upon corporate governance my mind constantly drifted to what was familiar to me, and a sector that I felt an affinity towards, the construction industry.

The construction industry has consumed more than twenty-five years of my life. Time spent, that for the most part has been very rewarding both personally and professionally. It is also time that cumulatively has contributed towards the fabrication of my understanding. As with many industries it takes time and first-hand experience working within them, before it could be said that one has garnered a profound understanding of the culture and intricacy of workings and operational mechanisms, albeit that my understanding derives from my own personal cocoon and possibly isolated perspective. It was, however, whilst reflecting upon the complexity of inter organisational relationships within the industry that I first considered managerial and functional aspects of procurement. In hindsight, my initial interest in this particular facet of the construction process was in all likelihood aroused because of my experience of the detrimental impact of industry procurement practices on my own business.

Upon entering the construction industry undeniably I was a *tabula rasa* with regards to knowledge of the industry. My foray into the world of construction commenced the month of my sixteenth birthday as an indentured electrical apprentice in the United Kingdom (UK). The company I worked for had been established for thirteen years, but followed a very aggressive growth policy that led to them becoming one of the largest privately owned electrical Contractors in the UK. Professionally my trade skills were garnered by working on an enormously diverse range of large scale projects, mainly in the commercial and industrial sectors.

The company had a policy, possibly for financial reasons, of divesting responsibility to apprentices from a very early age. As such prior to my nineteenth birthday, and considerably before I qualified as a twenty year old, I was supervising projects worth hundreds of thousands of pounds. Although a baptism of fire, it was a time in which I really learned the technical aspects of my trade. But it was also the first time I had encountered

financial responsibility and accountability, as well as the organisational pressure that accompanies these. Moreover, at the time it was these factors that moulded my behaviours, actions, and many of my decisions. Decisions usually focussed around completing a project, on time and within the allocated budget. Unfortunately budgets were usually set based upon prices tendered by an estimator to win a project, often bearing little resemblance to the real costs of both undertaking the project and simultaneously ensuring profitability. As such, it was not unusual for management to request identification and delivery of cost savings by whatever means available. In retrospect many of the practices engineered by the organisation (no longer in business) to minimise expenditure were to some degree circumspect.

Two years post completion of my apprenticeship, and eighteen months pre formulation of my first business I was engaged to work for a well-known and respected international electrical switchgear and controls manufacturer. Predominantly I focussed upon electrical design to meet specific and sometimes bespoke Client requirements. Although this relates to only a short period of my professional life, it nevertheless bestowed me with both business and technical skills that remain relevant today. Furthermore, as a large proportion of the organisation's Clientele hailed from the manufacturing sector, rather than construction, it exposed me to, and instilled within me a broader understanding of the significance and importance of effective supply chain management.

The overwhelming majority of my professional career has seen me working within my own electrical sub-contracting businesses. At different times I had responsibility for all operational activities from staff recruitment and training through to the sourcing, programming and completion of projects. Throughout my career I estimate that some fourteen years have been utilised working in a practical and technical sense directly through onsite projects. In addition, a similar amount of time has subsequently been spent working within managerial and project management positions. In essence my experience encompasses the most basic onsite tasks at one end of the spectrum to accepting financial responsibility and on-going legal liability for completed projects at the most senior level.

Effectively the technical aspects of my pre-understanding have their antecedents in the formative years I spent working within the construction industry. However, the broader context of my pre-understanding has been formulated from positions of responsibility. Subordinate consciousness is often focussed through a narrow lens on a current specific

project and, whilst they may develop a good understanding of the multiple dynamics present when working alongside numerous sub trades, this understanding often does not extend to include strategic intra and inter organisational issues. The converse is true within a more senior role.

The capstone of my industry pre-understanding is borne from the experiences played out and knowledge accrued from many years managing my own businesses. Holding positions of ultimate financial responsibility for staff, business operations and one's self within any sector, at times generates significant anxiety and stress. This is especially true within a highly competitive industry like the construction industry. Similar to many small subcontracting companies, my own company was often exposed to the fragility of uncertain workloads, and ever present financial pressures that the industry supply chain presents. As such these issues are amongst some of the many contributory factors that pervade the business decision making process and that can pre-determine the elasticity of acceptable risk. Accordingly, it is my contention that my pre-understanding was influenced by not only the proactive strategic organisational choices that I made as head of the company, but also by the reactive decisions in response to competitor actions and behaviours.

Aside from the influence that my professional experience has had upon forming my pre-understanding of the construction industry, two other sources of knowledge have contributed towards my understanding. Firstly, that knowledge and experience obtained from within the confines of my personal life, and secondly that derived from what is commonly referred to as '*tacit knowledge*' (Polanyi, 1966).

Over recent years I have personally renovated many properties, both residential and commercial, often employing builders and various sub trades. In itself, with regards to sub trades, this is not dissimilar to what I have undertaken on numerous occasions in my professional life. Nevertheless, there is a clear distinction between the two situations. Professionally my focus leans first and foremost towards profitability. Further, ordinarily in a professional capacity my company is ensconced in the lower echelons of a hierarchy that is the supply chain, in the capacity of a taker. However, when working from a personal perspective I am at the head of the supply chain, the giver, thus my objectives and perspectives are significantly different. From the position of a Client my attention is drawn towards quality of finish, meeting budgetary requirements and ensuring the project is completed on time. In addition my concern is not directed towards an individual trade in

isolation as is the case in my professional life but rather towards the integration of multiple trades and services with a singular objective. Inevitably, therefore, personal experience adds a very different dimension to my pre-understanding than would otherwise be available through professional experience alone.

Michael Polanyi in his book 'The Tacit Dimension' said that " [w]e can know more than we can tell"(1966, p. 4). He was referring to the residual intuitive knowledge that we all acquire but that we may not be able to clearly articulate (Lam, 2000), that nevertheless contributes to our pre-understanding. Tacit knowledge permeates almost every action and behaviour that we do, while we remain unaware of its influence (Tsoukas, 2003), and is sourced from context specific practical experience (Lam, 2000). According to Nonaka & Takeuchi (2007, p. 165):-

Tacit knowledge is also deeply rooted in action and in an individual's commitment to a specific context – a craft or profession, a particular technology or product market, or the activities of a group or team.

Tacit knowledge consists partly of technical skills – the kind of informal, hard-to-pin-down skills captured in the term "know-how". A master craftsman after years of experience develops a wealth of expertise "at his fingertips". But he is often unable to articulate the scientific or technical principles behind what he knows.

At the same time, tacit knowledge has an important cognitive dimension. It consists of mental models, beliefs and perspectives so ingrained that we take them for granted and therefore cannot easily articulate them. For this very reason, these implicit models profoundly shape how we perceive the world around us.

Tacit knowledge is also not explicit, therefore it cannot be theorised, contextualised or readily imparted to others, with perhaps the exception being those who hold positions of mutual trust and understanding (Lam, 2000; Nonaka & Von Krogh, 2009).

Tacit knowledge has irrefutably helped shape my pre-understanding and perceptions. I have acquired, over a period of many years, considerable expertise and knowledge pertaining to both technical and business aspects of electrical subcontracting and the wider industry. A proportion of this knowledge has undeniably infused itself within my subconscious. Its existence only becomes apparent within a specific context, perhaps a technical problem or question that I intuitively know the solution or answer to; or during a discussion with a peer

and an inexperienced third party who is not cognitively equipped to rationalise the context of our conversation.

2.3 UNDERSTANDING PRE-UNDERSTANDING

Evert Gummesson describes our cognisance at the point of commencement of a research inquiry as our '*Pre-understanding*' (Gummesson, 1991), which he contests "[r]efers to people's insights into a specific problem and social environment before they start a research program...." Gummesson contrasts this with '*Understanding*' which he sees as being knowledge germinated within the study process. Pre-understanding Gummesson posits is primarily derived from two sources. '*First hand*' pre-understanding is developed from our own personal experience. Whereas '*second hand*' pre-understanding is acquired from intermediaries, be they literature, reports or other communications. Regardless our pre-understanding cannot be disregarded (Laverty, 2003) and if not adequately accounted for can lead to the generation of research results that are purely a reflection of our subconscious understanding (Nyström & Dahlberg, 2001), that potentially will be of little or any relevance to either academics or practitioners. Gummesson would also add that an absence of sufficient pre-understanding may exhibit itself in any one of several ways. Firstly, whilst researchers may be skilled enough to identify relevant issues within research contexts, they may not hold the appropriate understanding to rate or allocate the due weighting or importance to issues. Secondly, he suggests that an ill-informed researcher may be oblivious to the risk posed by insufficient pre-understanding. Consequentially, this can lead to the selection of inappropriate methods of access to the research site, thus preventing participants from evoking appropriate responses. Lastly, he further suggests that researchers may be susceptible to the belief that fashionable management philosophies are unquestionable.

According to Laverty (2003, p. 21) "[i]nterpretation arises from pre-understandings" and it remains contingent upon the researcher to maintain an awareness of their inherent pre-understanding so as to mitigate possible supposition and influence upon interpretation and outcomes (Geanellos, 1998). As Gadamer (1975, p. 236) says in '*Truth and Method*':-

All correct interpretation must be on guard against arbitrary fancies and limitations imposed by imperceptible habits of thought and direct its gaze 'on the things themselves'.... For it is necessary to keep one's gaze fixed on the thing throughout all

the distractions that the interpreter will constantly experience in the process and which originate in himself.

Geanellos (1998) also suggests that conscious awareness enables researchers to question and reflect upon not only the genesis of their pre-understanding but also its efficacy and credibility as it relates to the rendering of data.

Notwithstanding the risks that pre-understanding poses, it can just as equally be seen to be beneficial to a study, especially when a researcher holds experience of a substantive subject comparable with that of potential interview participants (Selden, 2005). A common understanding of terminology and cultural references facilitate the building of researcher participant rapport, engendering an environment consistent with the generation of reliable data (Stenbacka, 2001). Gummesson (1991) also suggests that first hand pre-understanding gives some researchers a clear advantage by aiding the formulation of their understanding of both the functional and operational aspects of an industry, whilst minimising time wasted sourcing basic industry information. It is generally the norm he suggests for researchers to enter a study holding only second hand pre-understanding. Furthermore, they may never have held a business position whereby they maintained accountability for leadership and financial decisions. It is for this reason that Gummesson argues for researchers to have accrued experience from positions of responsibility prior to the commencement of an academic study.

2.4 ACCOMMODATING PRE-UNDERSTANDING

Pre-understanding is fundamental to us as individuals and is ingrained into our subconscious minds, originating from a context of familiarity and lived experience (Coghlan & Casey, 2001; Nyström & Dahlberg, 2001). This subliminal process is responsible for guiding our ever-present thoughts, presuppositions and decisions and yet continues, without ordinarily alerting us, to its existence and influence over us. This state of mind is what Dahlberg and Dahlberg (2003) refer to as our '*natural attitude*'. Predominantly this unconscious condition is the one that we tend to adopt as our default position within our everyday lives. However, it is also a state of consciousness that is regularly imbued with making mistakes, erroneous acts which ordinarily may be seen to be inconsequential, but that have no place in research. Within a research context there is an onus upon researchers to ensure that data and interpretation are both reliable and credible, as such mistakes left unresolved can have

major implications for a study. Fortunately it is possible to mitigate to some degree mistakes resulting from our unconscious actions, both within our everyday lives as well as in research. As although we continue to be governed by our natural attitude it is demonstrable that situations do present themselves, during which we have to consciously set this attitude aside (Dahlberg & Dahlberg, 2003). Consider the following for example:-

Driving rules within New Zealand, a country that drives on the left, until very recently consisted of a very strange road rule. A rule whereby a vehicle proceeding along the highway wishing to make a left turn had to give way to oncoming vehicles intending to turn right. This idiosyncratic rule created confusion not only to visitors but also to New Zealanders. In time common sense prevailed and a governmental decision made to align the road rules to give way at intersections aligned with those adopted worldwide. The consensus of opinion amongst sceptics leading up to the day set down for the introduction of the new rule was that accidents at intersections were likely to increase in the short term. It was considered that road users would be unable to overcome their natural attitude. Bearing this in mind, four weeks prior to implementing the rule changes a national advertising campaign was launched to raise public awareness. Subsequent to the introduction of the new road rules the projected increase in accident rates never eventuated. What did, however, was that road users for a time at least, became more courteous and considerate at intersections. For the most part they became conscious that the changes were able to overcome what had been their ingrained and long held natural attitude by raising their awareness when required, and thus creating a new natural attitude from that point.

To maintain research integrity an obligation rests upon the researcher to reconcile their pre-understanding (Nyström & Dahlberg, 2001). Within this study the author accounted for implicit pre-understanding principally in two ways. In the first instance by simply introducing on-going mental advertising, as a means of reflection to raise personal awareness and consciousness of both the positive and negative consequences that pre-understanding could have had upon the study. Dahlberg & Dahlberg (2003, p. 47) would refer to this reflective practice as 'bridling'. They contend that:-

Reflection helps us to slacken that firm thread that ties us to the world. We don't want to cut it off, we *cannot* cut it off as long as we live, but we must slacken it in order to give us that elbow room that is needed if we want to make clear what is

going on in the encounter between ourselves and the world. Consequentially we cannot either cut off our pre-understanding, that little vexation that constantly has occupied philosophers as well as researchers, but we can bridle it!

Bridling is a means of self-reflection and a way to withhold and constrain personal beliefs, theories, prejudices and bias from impinging upon the research process whilst maintaining openness, and letting the phenomena emerge (Bremer, Dahlberg, & Sandman, 2009; Dahlberg, 2006). According to Dahlberg et al., (Dahlberg & Dahlberg, 2003), bridling our consciousness is a simple process of retarding our thoughts, giving our minds time to fully consider and question meanings that we ascribe to interpretations, rather than impulsively attributing imprudent subconscious assumptions.

The author also followed the lead of Geanellos (1998) and asked of himself “What are my pre-understandings”? This was seen as a conscious exercise to focus his mind upon not only the pre-understandings themselves, but also to question where the source of his pre-understanding came from. Furthermore, it enabled the author to consider how and in what manner his pre-understanding influenced this study.

2.5 THE NATURE OF PRE-UNDERSTANDING

The initial decision and reason to embark upon this study was no doubt drawn from what was my pre-understanding at that point in time. Whilst I was appreciative of my pre-understandings influence on formulating this research study, I was simultaneously conscious and aware of the potential danger, in the form of prejudice and bias that it potentially presents to the study. Consequentially I 'bridled' (Dahlberg & Dahlberg, 2003) my pre-understanding to constrain it, whilst concurrently delivering it to the fore of my consciousness. To assist in the bridling process I wrote memos throughout the study process, which assisted in maintaining focus and overall researcher integrity. Drawing upon some of the memos I wrote early in this study, the following are representative, and largely verbatim samples that demonstrate to a point what particular aspects of my pre-understanding were at the time.

2.5.1 Personal awareness

My reason for commencing this study is largely due to my experiences within the construction industry as an electrical Sub-Contractor. I cannot conceal this fact, and on one hand it gives me some degree of an advantage as I understand the industry. On the other hand, however, it is like a ball and chain that I carry around, unable to break free. It influences my every thought, and can tend to restrict my thinking, to what 'I know is best'. I recognise the limitation and have strived to overcome this to ensure that the research holds up to scrutiny, and more importantly that the outcomes are of real benefit to the construction industry.

The intent of this study is to focus upon the relationships that exist within the construction industry supply chain. The type of construction project will be the major antecedent for any particular chain. The majority of interviewees are expected to be sourced from chains primarily that have resulted from a conventional tender system. To further my understanding, however, it is necessary to not exempt the many other supply chains that are possible and nevertheless remain within the context of the construction industry.

2.5.2 Reticence to embrace collaborative procurement practices

Historically traditional procurement methods appear ingrained deeply within the industry culture. Even the recent call for a change towards collaborative procurement, has seen no appreciable change within the industry, especially at the lower end of the supply chain. The questions posed are:-

- *Is it solely because of industry lethargy?*
- *Because it is thought that current methods are the best that can be achieved?*
- *Because it suits the Client and Main Contractors, and helps mitigate their risk?*
- *Possible ignorance of alternatives?*
- *The benefits of collaboration have not been demonstrated adequately to the industry?*

2.5.3 Traditional Tendering

Tendering for projects within the construction sector is very competitive and often unethical. The net result, however, is that from the outset predicted or expected margins are often very low single digit or even negative percentages. For Contractors it is not unusual to discover that they have not allowed for several items, which they may discover as the project progresses. If these omitted items had been included within the original contract documentation, then contractually they have to cover the costs, which are often significant.

2.5.4 Sub-Contractor Incentives

Contractors and especially Sub-Contractors' performance can be severely influenced by the associated sub trades from other disciplines that they are expected to work alongside. In itself this can erode Sub-Contractors' margins and profitability. It is very often the erosion and uncertainty of margins within the sector that promotes and incentivises Contractors to take short cuts which ultimately impacts upon final product quality.

2.5.5 Industry competition

It is possible to argue that competition within the construction industry differs from that of most other industry sectors, in that more competition can have a negative outcome for Clients and Contractors, rather than positive as might be anticipated. Could it be that there is a tipping point, whereby competition within a sector becomes so abundant that it has detrimental implications for consumers? If so, what is this point, and how is it possible to know when it has been reached?

2.5.6 Performance & Motivation

Whilst some means of motivating performance and completion is no doubt required in some instances, current retention amounts are often incongruous with the quantity of uncompleted work. For Sub-Contractors this creates a cost, with not only immediate monetary consequences, but also collection costs etc. Main Contractors use retentions as a means of improving cash flow, whilst Clients keep their money in the bank and continue to receive interest to the detriment of Contractors. As an example as Architects and Project Managers are not contractually bound by retentions, the question posed is who, apart from Sub-Contractors, are incentivised to change this practice?

2.5.7 Trust within procurement

The type of procurement method used within construction is primarily responsible for bringing together a multitude of sub trades. Some will have worked together before and established rapport and trust. For others, however, it will be the first time working together; and with no prior relationship any trust between parties is minimal at most. Many studies such as Hartmann & Caerteling (2010) have discussed trust between Main Contractors and trades, therefore it can be assumed that trust and collaboration between trades on a project is also paramount. This is more so for some trades than others; electricians for example need to maintain a working relationship with many other service trades such as HVAC, Fire, Plumbing, Security to name a few. What is the consequence for the project, if these parties fail to work together, or work together under duress? Is there any incentive for trades to collaborate? Would collaboration make any difference to the project outcomes? Do organisations procuring construction work pay any attention to the relationships

below say the level of Main Contractors, or even above for example Architects and Consultants?

As previously discussed I was mindful of the possible risks posed by my pre-understanding. The above memos, in addition to the many others that I made as the study progressed, were an effective means of shackling my pre-understanding, and mitigating its influence on interpretation. The on-going process of documenting my thoughts through the ritual of memo writing also ensured that I remained attentive to the cyclical nature of pre-understanding as the study evolved. Pre-understanding today, readily develops into tomorrow's understanding, before subsequently informing our pre-understanding of the future.

2.5.8 Personal thoughts on pre-understanding

I cannot categorically concur with Gummesson (1991, p. 51), and his proposition that it is “[v]ital for academic researchers to have personal experience from a position where they were responsible for making and implementing decisions.” As undoubtedly there are situations whereby this is clearly unnecessary and others when it may even be viewed a hindrance to effective research. Nevertheless, within this study, upon reflection, and with the benefit of hindsight, I am of the opinion that my previous professional experience within the research context, and from which my pre-understanding has largely evolved, was beneficial.

I found that pre-understanding equipped me with a repository of cultural understanding that somewhat eased and enhanced the process of data collection. In the first instance it simplified the identification of possible research participants, being familiar with the structure of the industry and its actors. Furthermore, a familiarity with terminology, combined with the ability to refer to practical and personal examples of issues akin to those of future participants, generally overcame any reticence towards participation.

During the interview process precious time was not consumed by the need for participants to extrapolate responses so as to explain minutia. As a result interviews were relaxed and more often than not convivial. Such atmospheres I believe led to an elucidation of responses that ordinarily may not have otherwise have been achieved. Further, a commonality of tacit knowledge enabled the understanding of unspoken inferences. Moreover, participants were

appreciative of an interviewer empathetic towards, and understanding of them, the industry sector and their challenges.

Theoretically the concept of bridling appears simplistic; reality, however, does not necessarily facilitate so easily. Composing my reflective thoughts to memos was in my mind effective in highlighting bias and prejudices and maintaining interpretive integrity. Notwithstanding this, however, it remains questionable as to the extent that bridling has overcome the will of my subconscious thoughts.

2.6 SUMMARY

This chapter commenced by discussing the susceptibility of an interpretive study to the beliefs of the researcher formulated from their prior exposure to aspects of the research context. It continued to introduce the concept of pre-understanding, its characteristics, and the sources of both first and second hand pre-understanding, in addition to tacit knowledge.

Taking into account both the positive and negative implications that pre-understanding may have for a study, this chapter discussed the need to maintain awareness of evolving pre-understanding, by introducing bridling as the means by which the researcher mitigated and restrained personal beliefs, bias and prejudice from influencing data interpretation.

A brief synopsis of the author's professional background serves to locate the origins of his pre-understanding. This was followed by a discussion that explained how the act of memo writing was used as a tool to maintain focus upon the presence of potential bias and prejudice.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Philosophical perspectives ordinarily predicate how researchers address any study, as such this chapter commences with a discussion surrounding the contrasting approaches of quantitative and qualitative methodologies, prior to justifying the rationale for electing to facilitate this study qualitatively. The subsequent narrative then discusses the relevance of philosophical worldviews (Creswell, 2009), or paradigms, that guide research studies, and their four constituent elements, ontology, epistemology, methodology and axiology. This is followed by an overview of what many would argue to be the five most popular and influential paradigms, Positivism, Post Positivism, Critical Theory, Participatory Approach and Constructivism (Creswell, 2009; Guba & Lincoln, 1994; Lincoln, Lynham, & Guba, 2011; Mertens, 2010b), which remain conducive to qualitative methods (Denzin & Lincoln, 2011b). Thereafter, discourse explains the reasoning supporting the adoption of the constructivist lens, and grounded theory as the chosen strategy of inquiry. The chapter concludes with a synopsis of grounded theory and its continuing evolution.

3.2 LOCATING THE FIELD

Morgan (2007) suggests that researchers considering research within the social sciences over recent years, have faced a choice between following one, or possibly a combination of both prevailing and dominant research approaches, being either quantitative or qualitative. These are approaches that some would argue are contrasted and underpinned by both very different philosophical and methodological positions and which have contributed to the genesis of a plethora of arguments and debates within the social science literature surrounding the attributes and characteristics of either form of inquiry (Amaratunga, Baldry, Sarshar, & Newton, 2002; Morgan, 2007).

Some would argue that the distinction between quantitative and qualitative research is straightforward with the former being a statistical method to manipulate numerical data to test a proposed relationship between variables (Creswell, 2009). Others, however, would posit that this is an overly simplistic perspective, and that the true distinctions between

them are explained by their underpinning epistemological and ontological roots (Bryman & Bell, 2007). The quantitative or deductive approach views research as being guided by theory, encompassing objective views of reality that remain true regardless of personal perceptions (Sale, Lohfeld, & Brazil, 2002), governed by natural laws that when known enable the prediction and control of future events (Lincoln & Guba, 2003). Epistemologically, it has been said that the quantitative researcher adopts the realist position (Hayes, 1997) and that the phenomena under investigation remains independent of the investigator, who attempts to neither influence nor be influenced by it (Guba & Lincoln, 1994).

Conversely a qualitative or naturalistic research approach is based upon constructivism and interpretivism (Guba & Lincoln, 1994) and does not retain the premise of a single objective reality or truth, but rather views social reality as a construction created by individual actors or groups based upon their own lived experiences (Lincoln & Guba, 2003). With the intended aim leaning towards gaining a context and specific insight and understanding (Willis, Jost, & Nilakanta, 2007) of man's subjective perception and interpretation of their social reality (Van Manen, 1977) and the complexity of associated relationships and other explanatory factors (Stake, 1995). Whilst a qualitative approach will provide a holistic, descriptive interpretation within an inquiry its relevance to the context may be limited. Evolving contexts and the passage of time converge to ensure that any description or explanation of a social phenomenon is representative within the substantive context only and is not likely to remain truly illustrative and immutable over time (Guba & Lincoln, 1982).

Creswell (2009, p. 4) defines qualitative research as follows:-

Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes and the researcher making interpretations of the meaning of the data.

Bryman & Bell (2007, p. 402) define qualitative research accordingly:-

Qualitative research is a research strategy that usually emphasises words rather than quantification in the collection and analysis of data. As a research strategy it is inductivist, constructionist and interpretivist, but qualitative researchers do not always subscribe to all three of these methods.

Corbin & Strauss (2008, p. 1) view qualitative research as:-

A process of examining and interpreting data in order to elicit meaning, gain understanding, and develop empirical knowledge.

But perhaps the broadest explanation is given by Denzin & Lincoln (2011a, p. 3) whose definition is:-

Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them.

The previous definitions from the extant literature demonstrate that qualitative research is characterised by several distinct attributes. Firstly, researchers enter the field often drawing upon multiple methods (Marshall & Rossman, 2010) and collect data in a 'real world' or natural situation, within the context of the phenomena under study (Chesebro & Borisoff, 2007; Miles & Huberman, 1994; Patton, 2002) and under the control of the proposed informants (Chesebro & Borisoff, 2007). It is also usual for them to forgo the use of research instruments such as surveys in favour of collecting data personally through direct contact and communication (Creswell, 2009). Furthermore, unlike the independent quantitative researcher approach, within a qualitative or interpretive framework the researcher accepts that their previous life experience and knowledge of the studied phenomenon influences their interpretation of it and plays a significant role in developing an understanding and explanation for it (Creswell, 2009; Patton, 2002). As is often the case in the social sciences the type of research problem or phenomenon is likely to be intangible, having no physical

existence or reality. This may be problematic within a quantitative study. However, In contrast a qualitative inquiry does not rely upon experimental control, measurement and quantification. Within a qualitative approach the inability to measure or quantify the phenomena does not maintain the same relevance. The researcher is interested only in understanding the constructions formulated in individual's minds, drawn from the meanings that they have attached to them, as it is these constructions that explain human behaviour (Guba & Lincoln, 1982). Rather than focusing upon a linear relationship between a small number of explanatory variables it is the aim of qualitative research to produce a broad, holistic, and integrated account or explanation of the issue under investigation albeit often viewed from contrasting, but nevertheless related perspectives (Creswell, 2009; Miles & Huberman, 1994; Polit & Beck, 2010; Stake, 1995; Willis, et al., 2007). With the basis for this explanation developed through a bottom up approach and process of induction and constant data interrogation to elicit common themes from which higher level abstract concepts can be generated (Creswell, 2009).

Qualitative research has an inherent strength that makes it especially suitable for a study such as this one that focuses upon the construction industry. The diverse nature of stakeholders within the industry such as Clients, builders, Consultants, trades and others ensures that in general the structure of the construction industry remains a complex one. Whilst complex, its structure has been deemed to be unique, in that most of its turnover is generated from a relatively few large companies. Even so, the low barriers to entry ensure that the industry has a proliferation of small to medium enterprises (SMEs) which ensures on-going high levels of competition. The uniqueness of the industry extends to also include its supply and demand characteristics, which are often unpredictable as a result of highly differentiated, one off small scale projects. The ramifications of which have created a fragmented industry overrun with actors reliant upon short lived opportunism (Cox, Ireland, & Townsend, 2006). The construction industry traditionally has been plagued by adversarial relationships, between Clients and Main Contractors (Briscoe & Dainty, 2005), and at lower echelons of the supply chain between Main Contractors and specialist trade Sub-Contractors. These attitudes are often to blame for the poor efficiency of the industry as a whole evidenced by declining productivity and increased costs. It has been suggested that the adversarial and competitive nature of the industry is driven by the self-interest of the parties involved, each with an individual agenda (Ng, Rose, Mak, & Chen, 2002).

The aforementioned issues are purely representative of some of the current problems that exist within the construction industry. Primarily the role of the sciences is to provide answers that explain particular experiences or phenomena with the objective of the social sciences being to garner an understanding of individual or group lived reality and subjective *verstehen*, the understanding of their social reality (Jackson II, Drummond, & Camara, 2007; Van Manen, 1977). The literature pertaining to qualitative research highlights the basic premise of this approach, being that more than one holistic interpretation is capable of explaining an individual actor's pre-determined thoughts and actions. Moreover, however, it is said that to garner a true understanding of an individual's social context and perspective the researcher must position themselves in such a place that they perceive the social world as viewed through the lens of actors themselves (Pidgeon & Henwood, 1997).

The specific goal of a qualitative or interpretive research design is to analyse, resolve and define the latent underlying meanings, perceptions, assumptions, prejudgements, and presuppositions that exist within a specific context (Van Manen, 1977). Erickson, Florio & Buschman (1980, p. 2) therefore suggest that interpretive researchers meet this objective by answering five basic questions.

1. What's happening in this field setting?
2. What do the happenings mean to the people involved in them?
3. What do people have to know in order to be able to do what they do in the setting?
4. How does what is happening here relate to what is happening in the wider social context of this setting?
5. How does the organisation of what is happening here differ from that found in other places and times?

While agreeing that these questions may appear somewhat benign and trivial, Erickson et al. (1980, p. 2) argue that the '*invisibility of everyday life*' obscures our external perspectives of social reality. A clearer elucidation and description of which can be revealed if the researcher simply reflects upon and asks the question, "What's happening here?" Furthermore, they go on to suggest that these questions will assist in revealing the specific as well as a general understanding of the issues affecting people within both the local and comparative social contexts (Erickson, 1985; Erickson, et al., 1980).

The strength of qualitative research is in eliciting a comprehensive perspective of real world situations within a natural context is a characteristic that is reinforced by the groundedness of the data that has been sourced directly from within its original context, rather than by a remote research instrument such as a survey. This provides the data with contextual significance and depth that are largely unobtainable with quantitative designs. Data are not required to fit prior hypotheses but rather to build and formulate new theories, with 'thick descriptions' capable of explaining the data (Guba & Lincoln, 1982; Miles & Huberman, 1994).

The transient and dynamic nature of the construction sector, the associated actors, intra and inter relationships serves to maintain an industry that most would agree is intricate and complex by nature. As the fundamental objective of this study at the outset is to both understand and explain unknown variables, intangible behaviours and any associated consequences within a substantive arena, it lends itself most favourably to a qualitative interpretive approach, which is the research design that the study follows.

3.3 RESEARCH PARADIGMS

Guba et al., (1994) in addition to Willis (2007) suggest that the terms qualitative and quantitative research are often perceived incorrectly, and should be used, or viewed in relation to the use of particular methods. However, they contend that it is somewhat premature to make any decisions regarding method without giving due consideration to the research paradigm. Guba & Lincoln (1989, p. 158), arguably, demonstrate the influence that paradigms have upon methodological approaches and research with the following analogy:-

[i]t may not be possible to tell whether an individual holding a hammer is a carpenter, an electrician, or a plumber, but the person holding the hammer knows, and that intention will lead to the hammer being used in very different ways. Similarly, while it may not be possible to label an individual a positivist simply because he or she is using a survey instrument, or a constructivist simply because he or she is conducting an interview, those persons know (or should know) from which paradigms they operate, and that knowledge has significant consequences for the ways in which those tools are used.

Research paradigms are inherent guiding beliefs and constructions that govern the research process (Denzin & Lincoln, 2011c). Patton (2002) suggests that the beliefs of subscribers to

any particular paradigmatic doctrine are rooted in their subconscious which enables simple uncomplicated interpretations of the complexity of reality, but which carries the associated risk of being blind to axiomatic paradigm suppositions (Patton, 2002).

According to both Denzin et al., (2011c, p. 91) and Heron and Reason (1997) a paradigm incorporates four distinct elements, ontology, epistemology, methodology and axiology. Ontology and epistemology are drawn from an area of philosophy known as metaphysics. This predominantly focuses upon addressing two questions, the first one being how do we describe or characterise existence? And the second how do we know and determine what exists (Willis, et al., 2007)?

Ontology, or the theory of social entities (Bryman & Bell, 2007) questions a researcher's personally held beliefs and perceptions about the nature of reality, or how they characterise the nature of existence (Willis, et al., 2007). To this Guba et al.,(1994, p. 108) propose the question "What is the form and nature of reality and, therefore, what is there that can be known about it"? This is exemplified by considering the following. If someone accepted that reality is both tangible and physical they would dismiss any notion of a God's ability to influence nature. As a person with an ontological materialist position such as this would argue that a God cannot exist without a physical presence. This is contrasted by an idealist's perspective that reality is a construction of the mind (Willis, et al., 2007).

Epistemology, a theory of knowledge and how it can be produced (Bryman & Bell, 2007; Pidgeon & Henwood, 1997) is underpinned by two fundamental questions. How do I know the world, or what can be known? And what is the associated relationship between the known and the inquirer (Denzin & Lincoln, 2011c; Guba & Lincoln, 1994)? An appropriate response to these questions, however, can only be formed by taking account of the researcher's interrelated ontological position, as to some degree this predicates the answer. An assumption that the nature of reality is a real and a physical existence constrains the knower to an objectivist position. Similarly an objective epistemological position would suggest an ontological position be assumed that focuses upon a real world existence (Guba & Lincoln, 1994; Morgan, 2007). A plethora of epistemological positions such as relativism, positivism, constructivism, foundationalism, and feminism, amongst many others exist. Some of which view the explanation, and truth about phenomena as a single objective reality, whilst others propose that a multitude of truths may exist. The declaration of a researcher's epistemological position is necessary to locate the study and production of

knowledge amongst the diversity of varying opinions, paradigms and beliefs about what constitutes knowledge within any particular field, and importantly how valid knowledge is created (Pallas, 2001).

Methodology and methods are words that are often confused and sometimes used interchangeably (Parahoo, 2006). Methodology, with the prime objective of *securing* “[t]he best means of gaining knowledge about the world” (Denzin & Lincoln, 2011c, p. 91), refers to the study of methods (Parahoo, 2006), or as has been defined by Kaplan (1964, p. 18) is “[t]he study-the description, the explanation, and the justification-of methods, and not the methods themselves”. With methods being tools and techniques (Parahoo, 2006) to measure, observe, experiment, collect data, create models and formulate hypotheses (Kaplan, 1964).

Guba et al., (1994, p. 108) demonstrate the mutuality and interdependency of epistemology, ontology and methodology by asking the question, how can a researcher find out what they believe can be known? The answer they argue has to take into account both the ontological and epistemological position of the inquirer, which will invariably preclude some methodological choices. An inquirer who for example follows either a quantitative or qualitative paradigm and assumes an objective and absolute truth needs to maintain experimental control and manipulation of the research context, and any associated extraneous factors. This would therefore largely exclude any methodology utilising methods that included any unstructured or uncontrolled informant input or data generation. Similarly the contrary alternative position of selecting a methodological direction without due consideration of inherent ontological and epistemological beliefs can be equally constrictive. For example a researcher who commences an inquiry using interviews and focus groups will have minimal control and is unlikely to identify a single objective truth sufficient to explain a phenomenon.

Axiology is a term used to describe an area of philosophy that raises questions pertaining to the values and associated moral and ethical conduct of a researcher (Mertens, 2010a; Ponterotto, 2005). Questions such as that proposed by Denzin et al., (2011c, p. 91) of “How will I be as a moral person in the world”? Or those asked by Heron & Reason (1997, p. 277) of “[w]hat is intrinsically valuable in human life, in particular what sort of knowledge, if any, is intrinsically valuable?” And “[w]hat is it about the human condition that is valuable as an end in itself?” (Heron & Reason, 1997, p. 286). Heron et al., (1997) argue that axiology is

fundamentally crucial to fully define any research paradigm. Whilst ontology locates the researcher's position or view of the nature of reality; epistemology their beliefs regarding knowledge creation; and methodology articulates how to discover what can be known, all three attributes are concerned with the truth. Conversely an axiological viewpoint is concerned with inherent personal values and how they may influence research (Heron & Reason, 1997).

An intrinsic link exists between epistemology, ontology and therefore by association also methodology to values or axiology (Allison & Pomeroy, 2000). It is natural therefore that adherents of any particular paradigm will maintain certain axiological positions. A proponent of a paradigm that seeks a singular reality is unlikely to let their values influence an inquiry, as they are likely to require control of the research environment and therefore remain detached. A philosophical position that is in stark contrast to that of a subscriber to a paradigm that believes in multiple realities and perspectives of the truth, who will no doubt be immersed within extended contextual interpersonal contact (Ponterotto, 2005).

Predispositions, training and personal preferences commonly dictate the research road that will be utilised to address particular phenomena. This, however, is often described as a rather nonsensical approach, which should be ignored in preference to choosing a research design and paradigm that is the most suitable way of answering the question in hand (Guba & Lincoln, 1994; Ryan, 2006; Silverman, 2009). However, entrenched personal beliefs commonly mean that chosen research phenomena are reflective of existing paradigmatic positions (Ponterotto, 2005). Moreton-Robinson and Walter (2009) suggest that taking account of the values held prior to commencing inquiry, a researcher should be asking of themselves, why this topic? Why this aspect? And, where does my interest come from? Bawden (2006, p. 38) in his paper on the Systematic Evaluation of Agricultural Development clearly articulates the relevant importance of giving due consideration to personal worldviews and associated paradigmatic choices when he says:-

The set of profound beliefs that each evaluator holds as his or her worldview about the nature of nature (ontology), the nature of knowledge (epistemology), and the nature of human nature (axiology), is reflected in the approaches that he or she chooses to employ in practice – knowingly or unknowingly, consciously or unconsciously. Given the paramount influence that the worldview perspective that any individual evaluator brings to bear in any particular exercise of evaluation, it is

not only regrettable when the issue of perspectives remains unaddressed, but also grossly negligent.

Whilst a multitude of paradigms and their associated philosophical positions exist within the literature, there is at least some consensus surrounding the most popular and influential ones (Creswell, 2009; Guba & Lincoln, 1994; Lincoln, et al., 2011; Mertens, 2010b; Ponterotto, 2005). A brief overview of the five major paradigms that support qualitative research (Denzin & Lincoln, 2011b) follows.

3.3.1 Positivism

The term positivism, often known as the 'scientific method' (Adebesin, Kotzé, & Gelderblom, 2011) refers to the paradigm's historical relationship with the natural or positive sciences (Parahoo, 2006). Although it would be incorrect to assume that positivism is only appropriate as a guiding paradigm within the natural sciences (Bryman & Bell, 2007), as it has held a dominant position in both the physical and social sciences for centuries (Guba & Lincoln, 1994). Drawn from the rationalist philosophies of Aristotle, Kant and Comte (Mertens, 2010b; Willis, et al., 2007), within the natural sciences it would ordinarily be viewed as the preferred form of inquiry (Adebesin, et al., 2011). Positivists believe that the same traditions and means used to study the natural world, if applied remain a relevant, viable, and value free way of studying the social world (Mertens, 2010b). Usually, but not always, a positivist would employ a quantitative design and test hypotheses by implementing experiments and a deductive approach (Adebesin, et al., 2011).

Ontologically positivism perceives that the world is governed by fixed natural laws (Guba & Lincoln, 1994) that are explainable by invariable inter-variable relationships (Mertens, 2010b) and seeks to identify and predict a single objective, replicable and measurable truth (naïve realism) (Denzin & Lincoln, 2011c).

From an epistemological standpoint positivism maintains a perspective of researcher-phenomenon/object isolation. Outcome validity depends upon the imposition of researcher values and axiological integrity to investigate without undue interference one way or the other (dualism) between either the inquirer or the phenomenon (Guba & Lincoln, 1994; Lincoln, et al., 2011).

3.3.2 Post Positivism

Post positivism emerged because of disagreements surrounding some of the characteristics of positivism (Ponterotto, 2005). Mertens (2010b) suggests that adherents to this paradigm largely reject the positivist position that subscribes to what may be described as a somewhat limited viewpoint; that being that only that which is observable can be studied. Furthermore, she says positivism negates any ability to study phenomena that may be guided by intangible human behaviour such as emotions and feelings.

With a critical realist ontological perspective, post positivism's basic premise is that probabilistic reality exists, but that complete *verstehen* or understanding of its often unwieldy nature is constrained by the limitations of the human research instrument (Guba & Lincoln, 1994; Ponterotto, 2005). This is as opposed to positivists who seek generalised laws of prediction within the natural sciences. Post positivists have accepted that within the social world predictions with a similar level of validity and reliability are improbable (Parahoo, 2006).

Epistemologically the positivist dualist position is forsaken for that of an objectivist (Guba & Lincoln, 1994). Such objectivism is expressed by procedural adherence, researcher neutrality and the avoidance of prejudicious or biased behaviour and actions that affect outcomes (Guba & Lincoln, 1994; Mertens, 2010b). Awareness of the potential for the researcher to inject bias into the investigation is an axiological imperative and obligation, as is the need to acknowledge the impact that biases may have had upon completion of a study (Mertens, 2010b; Ponterotto, 2005).

Whilst positivists rely heavily upon experimental research instruments, post positivists follow a hypothetico-deductive method and recognise that the same scientific research instruments that are used in the natural sciences may not be appropriate for studying phenomena with people at the focus (Mertens, 2010b). Post positivists often study issues that exert a causal influence towards outcomes (Creswell, 2009), and overcome some of the limitations of positivism by adapting research instruments and conducting inquiries within more context specific environments, often in an attempt to interpret meanings from the behaviour of research actors (Guba & Lincoln, 1994). Albeit that either a quantitative and qualitative approach is suitable for use within a postpositive paradigm, the dominant approach remains to be quantitative (Mertens, 2010b).

3.3.3 Critical Theory

According to Kincheloe, McLaren and Steinberg (2011) there is limited consensus amongst adherents of the paradigm of what constitutes critical theory, and how it should be defined. This, they argue, is because several critical theories exist, and are widely used by proponents who remain averse to the introduction of rigid pedagogies. Willis (2007, p. 82) attempts a simplistic description of critical theory with the following “[c]ritical theory research tends to emphasise relationships that involve inequities and power, and a desirable aspect of critical research involves helping those without power to acquire it.” Thus critical theorists’ perception of society is garnered by looking at the world through the lens of those in positions of powerlessness (Blake & Masschelein, 2003) with the objective of highlighting self-awareness of contrasting personal beliefs and practices with a view to change and emancipation (Polit & Beck, 2010).

For critical theorists reality is drawn from the premise that it has been socially constructed over time (historical realism) (Guba & Lincoln, 1994). But further, over time, its construction has been influenced by extraneous factors such as, amongst other things, the socio-political environment, power and oppression (Lincoln, et al., 2011; Ponterotto, 2005). Subsequently critical theorists conceptualise social constructs into real, albeit virtual, but nevertheless permanent perceptions of reality (Ponterotto, 2005).

The nature of knowing (epistemology) within critical theory is based upon subjection and reasoning (Ponterotto, 2005). Close researcher-informant ‘*enmeshed*’ interaction and behaviours are seen by some as ‘*going native*’ and may inescapably lead to the values, ethics and beliefs of researchers having a bearing upon the outcomes of an investigation (Guba & Lincoln, 1994).

The paradigm of critical theory is not constrained by the appropriateness of a limited number of available methods. Willis (2007) suggests that this is because ideology rather than methodology is its central tenet. On the contrary, multiple quantitative or qualitative approaches are available and are only determined by the essence of the research, and the dialectic researcher-informant relationship (Guba & Lincoln, 1994; Mertens, 2010a).

3.3.4 Participatory Paradigm

The participatory paradigm is a worldview that in relative terms could still be viewed to be emerging, having evolved as recently as the 1980s and 1990s. Although it is used primarily in a qualitative framework, it can nevertheless support quantitative studies when required (Creswell, 2009). Participatory research distinguishes itself from other paradigmatic positions with regards to the position, perspective and control that the researcher maintains in relation to the inquiry participants. Rather than take a position of dominance and control, the researcher seeks an equitable, reciprocal and more democratic relationship with participants (Breu & Peppard, 2001; Kesby, 2000; Marshall & Rossman, 2010; Willis, et al., 2007). This relationship can extend to include a collaborative approach towards defining the research problem or issue as well deciding upon a suitable research strategy (Creswell, 2009). Furthermore, it may also incorporate conjunctive data analysis and mutual agreement regarding the distribution of findings (Polit & Beck, 2010). Having some similarities with the critical theorist's position, this approach would often be used within a socio-political context where power disparities, oppression and other inequitable behaviours are present amongst individuals, groups and communities (Bryman & Bell, 2007; Creswell, 2009; Polit & Beck, 2010). The objective of a participatory approach is to facilitate the generation of knowledge, moreover it seeks to engender change and emancipate participants by raising conscious awareness.

Proponents of a participatory paradigm view the nature of reality and existence from both a subjective and objective perspective, a co-creation of the mind and cosmos (Guba & Lincoln, 2005). As Heron et al., (1997, p. 279) explain, “[a]ny subjective objective reality articulated by any one person is done so within an inter subjective field”. In other words, what can be known of existence comes from a point of subjectivity, whose degree of objectivity is determined by how it may have been construed by the knower, and by the influence of other knowers.

Heron et al., (1997, pp. 280,281) argue that epistemologically there are four inter related ways of knowing which form the bases of subjectivity; experimental knowing borne from “[d]irect encounter, face to face meeting”; presentational knowing deriving from experimental knowing, being “[e]vident in an intuitive grasp of the significance of our resonance with and imaging of our world”; propositional knowing, “[k]nowledge by description”; and practical knowing, “[k]nowing how to do something, demonstrated in a

skill or competence. Understanding the dynamic relationships between them so as to constrain subjectivity involves a high level of awareness that they refer to as critical subjectivity. Finn, (1994) as cited by Sohng (1996, p. 5) concurs with Heron et al., that the production of knowledge is dynamic, from “sharing a life world together” and an on-going process of “engagement, education, communication, action and reflection”.

The participatory approach remains distinct from paradigms that would incorporate scientific research tools that maintain reliance upon specific research skills to produce knowledge (Reason, 2001). The very nature of the participatory paradigm is that of a collaborative research approach which automatically disqualifies some methodological options, such as those that require the separation of the researcher and participants and other options where the integrity of the study is reliant upon the ignorance of those being researched (Sohng, 1996). Therefore, the chosen form of inquiry by necessity needs to encourage engagement, democracy and cooperation (Reason, 2001).

3.3.5 Constructivism

What used to be known as the naturalistic paradigm is now more widely known as constructivism (Guba & Lincoln, 1989; Lincoln & Guba, 1985; Polit & Beck, 2010; Schwandt, 1994). Constructivists do not accept that the human social world can be studied in the same way that the natural world can be, as they see them as distinctly different realities. They argue that the world as we perceive it to be is a mental construction drawn from our own interpretation of events (Guba & Lincoln, 1989) with associated meanings generated by our own life experiences, characteristics and external stimuli (Corbin & Strauss, 2008; Stake, 1995).

Stake (1995) suggests that three realities exist, external, experimental and rational. He says that whilst external reality may produce a simplistic stimulus, we still can only know our individual interpretations of the stimuli, from which we develop mental constructions of an experimental reality so convincing that often we unwittingly fail to question them. Our rational reality is the consolidation of both external and experimental reality plus an amalgamation of a life time of other social interpretations. Expanding further, he goes on to suggest that whilst perceptions of reality may be individual, that any two people encountering the same event will often unknowingly mould personal interpretations to create a concordant rational reality. It is somewhat doubtful if Corbin et al. (2008) would

concur with this degree of congruence. Discussing a televised political discussion surrounding a particular event, they mentioned that they had witnessed what appeared to them to be a large degree of conflict and discourse between participants, with very little agreement or consensus evident as to what were the true facts of the event. This no doubt was the perception and interpretation of the same debate by many others watching. Although they remain valid, they are nevertheless personal interpretations that will inevitably be contingent upon their own background, experience and political persuasion. Invariably therefore, a researcher observing a scenario such as this may possibly appreciate its complexity, but will likely be unable to replicate nor indeed establish a remote understanding of it (Corbin & Strauss, 2008). Creswell (2009) clarifying any ambiguity, advocates that constructivists rely upon the premise that people in their attempts to understand the surrounding context of their lived experience, create multiple subjective meanings and interpretations that are attributed to both tangible and intangible aspects of their social world.

Constructivists therefore believe that a group of people living and working within any specific context will construct idiosyncratic individual realities of their existence (relativism) (Ponterotto, 2005), albeit, however, that common facets of realities may be similarly perceived by individuals (Guba & Lincoln, 1994). Regardless, for an outsider multiple realities will exist within a single context. From an ontological perspective this is contrary to the objective single reality or truth sought by adherents of the positivist paradigms (Ponterotto, 2005). However, for the constructivist researcher focus is upon these multiple realities (Patton, 2002), with the objective being to garner an holistic understanding of a phenomena drawn from multiple subjective interpretations (Creswell, 2009).

Epistemologically constructivism is viewed as being transactional/subjectivist (Guba & Lincoln, 2005; Patton, 2002; Ponterotto, 2005). For constructivists knowledge and truth are not seen to be discoveries but rather mental creations (Schwandt, 1994), that form as research progresses (Guba & Lincoln, 1994). Unlike paradigms that seek objective truth, reliant upon the segregation of the researcher and participants, constructivism holds the view that knowledge creation is enhanced when the distance between the researcher and a participant is reduced (Polit & Beck, 2010). Furthermore, it is accepted that the closeness of the researcher to participants results in both being inadvertently and unconsciously influenced by the other (Mertens, 2010b), leading to the production of data and that is not

derived solely from the participant but rather is jointly generated by the interactions of both parties (Guba & Lincoln, 1994; Ponterotto, 2005).

Researcher participant interaction is a fundamental aspect of constructivism. Social constructions are both personal and dynamic, as such cultivating a coherent and comprehensive elucidation of them requires the use of methodological approaches that encourage and enable this to happen (Guba & Lincoln, 1994). Moreover constructivists consider that using humans as the research instrument renders serendipity, insight, flexibility and the simultaneous ascription of meaning to data (Lincoln & Guba, 1985) that may not be otherwise available. It is not unusual, therefore, for qualitative approaches incorporating participant observations and interviews to dominate within this paradigm (Mertens, 2010b; Ponterotto, 2005). The constructivist paradigm is facilitated by using this somewhat hermeneutic approach to generate interpretations often drawn from, and contrasted against dialectic viewpoints (Mertens, 2010b). This serves to meet the ultimate objective of constructing an understanding and interpretation of a phenomena, that has significantly more explanatory power and relevance over and above any that could possibly be anticipated to come from either an individual participant, or the researcher in isolation (Guba & Lincoln, 2005; Guba & Lincoln, 1994).

With regards to axiological positioning constructivism contrasts markedly with any paradigm that incorporates experimentation as a method, such as positivism. Such paradigms when used within a social context, rather than maintaining neutrality, perhaps unwittingly impose inherent values and ideas of investigators upon research subjects (Christians, 2005). The same imposition is unlikely to occur in constructivist research. Constructivists cannot rely upon the scientific method to give credence to their findings; rather credibility is driven by demonstrating confidence and integrity in both the method and data (Lincoln, 2009). To meet this end Guba and Lincoln as cited in Mertens (2010b) and Lincoln (2009), produced a framework to guide ethical practice in consideration of the interrelated nature of the relationship that exists between the researcher and participant. Their framework proposes amongst other things that rigor is demonstrated by trustworthiness, authenticity, balance and fairness. Ontological authenticity is ensured by alluding participants to their own constructions of reality, and that by educating people about the realities of other participants they ensure educative authenticity. Furthermore, '*knowing*' or awareness is

viewed as “[i]nstrumentally valuable as a means to social emancipation, which is an end in itself, is intrinsically valuable” (Guba & Lincoln, 2005, p. 198).

3.4 RESEARCH PARADIGM SELECTION & JUSTIFICATION

The influence that the philosophical world view that any researcher holds undoubtedly has a significant impact upon the value and quality of any research output. This is especially true when a paradigmatic position must accommodate contrasting personal beliefs and values, or indeed, attempts to address research questions from unsuitable ontological, epistemological and methodological positions. A synthesis needs to exist between the researcher's personal values and beliefs, the research question and the chosen guiding paradigm.

In the broadest sense the underlying purpose of this study is to understand procurement within the New Zealand construction industry. Moreover, however, it seeks to extend this understanding to include inter organisational procurement practices, associated organisational relationships and the prevalence of, or reticence towards collaborative procurement practices. The objective of this study is not to produce a formal generic predictive theory, but rather a substantive context specific theory sufficient to explain the behaviours of sub sectors of the industry and any associated consequences that they may have upon the industry and consumer. The purpose is to facilitate the introduction of policies that will improve construction industry productivity and performance.

Positivist and post positivist approaches were discounted for several reasons, but primarily because of the philosophical beliefs of the researcher, who in this study cannot comprehend or totally subscribe to the notion of a single objective truth or reality. It is not accepted that knowledge is out there awaiting discovery and that it is possible to maintain researcher neutrality. Finally, this study does not seek to address clearly defined research questions nor test for causal relationships between independent and dependent variables.

Philosophically both the participative and critical realist approaches align more closely with the worldview of the researcher. They both nevertheless carry inherent methodological or philosophical approaches considered by the researcher to be somewhat contentious and problematic with regard to this study. Firstly, the participative paradigm seeks a collaborative relationship between the researcher and all participants and although commendable and appropriate for some studies, it was felt that the diverse and fragmented nature of participants within this study made this approach unfeasible. Secondly, both the participative and critical theorist paradigms seek studies that exhibit disparities of power

and oppression and look to meet objectives of emancipating the powerless. No assumption was made at study commencement as to whether any sector of the industry was oppressed or powerless as this was not known. Moreover, the focus of this study was never intended to be constrained by taking a single perspective. Nor was it ever seeking to encourage change through the emancipation of any section of the industry.

Following a significant degree of introspection and after giving due consideration to the research subject, the constructivist paradigm was deemed to be the most appropriate to guide this study. Several reasons underpin the rationale for this decision, but none perhaps hold more importance or relevance, nor can they have more influence than the philosophical beliefs of the researcher.

The researcher advocates an ontological position that a single reality or truth cannot be discovered that would enable the formulation of a common understanding or interpretation of it. Aligned to the constructivist position is the perception that multiple realities exist. Realities that are social constructs, that may evolve and change with time (Mertens, 2010b), that are cultivated from the integration of several deterministic factors, such as the historical experiences and cultures of individuals, and their education, age, gender or religion.

This like many other studies, however, adheres to and adopts the rationalist constructivist worldview as proposed by Stake (1995), such that an external reality exists that is only compatible with our interpretation of it. He nevertheless argues, however, that the associated compatibility remains un-testable and furthermore that no aspect of reality can exist apart from an individual's interpretation of it. Stake (1995) suggests this is a well-regarded opinion and perspective, in part because the alternative view that we and our universe are illusions is not accepted in the mainstream.

The researcher also holds the epistemological opinion that for knowledge to have theoretical and practical relevance, it cannot be produced from data generated without direct inquirer-participant engagement. Furthermore, the researcher concurs with the views of Polit et al. (2010), being that knowledge is enhanced by ensuring close researcher participant interaction. For the purpose of this study both of these facts were poignant. This study sought to garner heterogeneous opinions drawn from a cross section of the construction industry, from which interpretations would be made. To mitigate the

possibility that contextual data could be misinterpreted or misconstrued direct field access to participants was deemed to be both fundamental and necessary. It was felt that an obligation also existed to contrast and compare responses to queries across participants to broaden understanding.

This study was conducted by a researcher who had spent more than twenty five years working directly within the industry being studied. Unquestionably long held opinions and bias with regards to factions of the industry existed, either consciously or sub consciously and this held enormous potential to influence aspects of the study. A constructivist approach incorporating face to face interviews mitigated some of the risk that this brought to the study, whilst also drawing upon the opportunity that it represented.

Heron cited in Lincoln et al., (1985, pp. 31-32) describes the protection that constructivism gives to participants compared to the exploitation evident in other paradigms:-

it protects them from being excluded from the formation of knowledge that purports to be about them and so from being managed and manipulated ... in ways they do not understand and so cannot assent to or dissent from.

This study contends that from an axiological standpoint the researcher should maintain transparency, with regards to beliefs, values, knowledge creation and objectives. A constructivist approach to research engenders an equitable researcher participant relationship built upon openness and trust, which allows this to happen.

3.5 STRATEGIES OF INQUIRY, SELECTION & JUSTIFICATION

Evidently the personal beliefs or worldviews of researchers reach far beyond the decision of whether to follow a quantitative, qualitative or mixed methods approach to a study (Mertens, 2010b). They are implicit in impacting upon the entirety of the research design decision, including the selection and adoption of appropriate methodological approaches, commonly referred to as the strategies of inquiry.

Creswell (2009, p. 11) defines strategies of inquiries as “[t]ypes of qualitative, quantitative, and mixed methods designs or models that provide specific direction for procedures in a research design”. Alternatively they may be viewed as “[a] kind of road map, a proposed plan for undertaking a systematic exploration of the phenomenon of interest” (Marshall & Rossman, 2010, p. 94). Within the context of a qualitative study such as this, several strategies such as ethnographic, case study, grounded theory or phenomenological research exist, and which are discussed in Creswell (2009), Mertens (2010b) and Denzin et al., (2011c). However, these and other approaches to this study were considered with the majority being disregarded.

The merits of both the case study (Yin, 2009) and grounded theory (Glaser & Strauss, 1967) approaches were considered to be most appropriate. But upon reflection the case study option presented obstacles that it was considered would be difficult to overcome. For this study to attain an understanding of procurement within the construction sector, access to the supply chain was imperative. It was considered that a comparative analysis of individual construction project cases could be undertaken; one that contrasted construction projects completed using various procurement methods. Currently there is a tendency for the majority of the supply chain to be recruited by Main Contractors. As such it was thought that with this approach that identification of all aspects of the procurement function would be relatively straightforward. This was outweighed, however, by the potential problems and pitfalls that adopting a case study strategy of inquiry presented.

For this study to be both theoretically and practically relevant it could ill afford to exclude significant sectors of the supply chain. A case study approach constrained the study to the selection of projects and procurement routes agreed upon at the commencement of the study with Main Contractors. But more importantly it committed the study to obtaining the agreement of a large number of actors to take part, actors drawn from a cross section of

industrial sectors, yet working within a specific supply chain. This would always expose the study to the risk of large sectors not agreeing to take part, or withdrawing their participation at any time during the study. More importantly perhaps though, was the possibility of collecting inadmissible or worthless data by garnering disingenuous responses from participants. This risk was perceived foremost because lower echelons of the supply chain would not remain anonymous and wishing to mitigate any possible damage to their existing relationships with Main Contractors may present veiled responses to questions.

Grounded theory methodological approaches are regarded as being amongst the most popular for use in qualitative research designs (Birks & Mills, 2011; Bryant & Charmaz, 2010b; Morse et al., 2009). This fact undeniably played some part in influencing the ultimate decision to opt for this particular strategy of inquiry over and above any other. Notwithstanding this, however, many other factors were significantly more important in guiding this most crucial of research decisions. Central to this decision was the ability of grounded theory to meet the research objective of understanding the issues surrounding procurement within the construction industry. With regards to achieving this end, Morse's (2009, p. 14) description pertaining to the characteristics of a grounded theory approach follows:

[i]t allows us to explicate what is going on or what is happening (or has happened) within a setting or around a particular event. But it does even more. It provides us with the tools to synthesise these data, develop concepts, and midrange theory that remains linked to these data, yet is generalisable to other instances and to future instances.

Moreover, whilst studies such as McCord (2010), Eriksson & Laan (2007) and Hinze & Tracey (1994) have sought to understand and explain aspects of Contractor, Sub-Contractor and Client relationships, they have focussed upon isolated aspects of the supply chain, ignoring the broader context. This is also true of a very early grounded theory study by Glaser, discussed in his book *Experts Versus Layman: A Study of the Patsy and the Sub-Contractor* (1972). This investigated the relationships and power inequities between an inexperienced procurer of new residential property, and the Sub-Contractor driven supply chain. It remains that very little is known with regards to the extended supply chain and the multitude of associated relationships and behaviours that comprise this.

Carson et al, as cited in Levy (2006) contend that a grounded theory approach is particularly suitable and applicable for use in a study, when firstly, it is an interpretive study, secondly that research focuses upon complex personal social processes and thirdly that any existing theories are limited. As has previously been discussed all of these factors are inherent within this study and partly underpin the justification for selecting and relevance of utilising a grounded theory methodological approach.

Practical issues surrounding research integrity and flexibility were also aspects that were considered important within this study and thus supported the adoption of grounded theory. Whilst a case study approach posed risks for this study related to the recruitment of suitable participants, and the subsequent protection of their anonymity, the probability of encountering similar problems within a grounded theory framework was greatly reduced. Furthermore, by electing to facilitate the study in this way, it improved the potential to expand its scope by incorporating and considering a far wider range and diversity of potential project types, than would otherwise have been available. Rather than being restrained to the discussion of a defined and specific project, it enabled discourse to address issues relevant to any project, past or present, procured via any method. What is more the relationship between inter related organisations and individuals could be openly discussed and contrasted, whilst participants remained shrouded by anonymity. These factors were considered to be pertinent and necessary to generate robust and diverse data with integrity, from which credible interpretations could be derived. These interpretations had to be propitious for the construction and development of theories comprehensible by academics and lay persons alike, that also align closely with the context from which they descend from, and have an intrinsic practical applicability and relevance (Turner, 1981).

3.6 GROUNDED THEORY

Grounded Theory (GT) was founded upon the premise of generating substantive theories (Selden, 2005) capable of explaining the social behaviour and ontological realities of individuals (Annells, 1996; Suddaby, 2006). Many, but not all, would attribute the evolution of GT to the tenets of symbolic interactionism (Cutcliffe, 2000; Goulding, 2002; Holton, 2007). The roots of which can be traced back to the early part of the 20th century, and the work of a group of pragmatist philosophers, John Dewey, Charles Cooley, William James, Charles Pierce, W.I. Thomas and George Mead (Annells, 1996; Locke & Locke, 2001). Symbolic interactionism is considered to be a suitable framework for the purpose of investigating and theorising about the social behaviour of individuals and groups (Annells, 1996). Its proponents according to Willis et al., (2007, p. 177) emphasise “[t]he need to keep in mind that human interaction is not based solely on the way the external world “really” is. That interaction is based, instead, on how humans interpret their world”. Furthermore, they add “It is thus symbolic meaning rather than concrete meaning that is most important in symbolic interaction studies”.

Grounded Theory, with its stated objective being “[t]o generate a theory that accounts for a pattern of behaviour which is relevant and problematic for those involved,” (Glaser, 1978, p. 93) was developed by co-creators Barney Glaser (1930 -) and Anslem Strauss (1916 – 1996), and built upon the principles inherent within symbolic interactionism (Goulding, 2002). Glaser and Strauss, both sociologists, came together and collaborated at the University of California in the 1960s (Bryant & Charmaz, 2010a) to undertake a participant observation study of the management and care of dying patients in hospitals (Charmaz, 2006; Locke & Locke, 2001). This initial joint research collaboration resulted in the publication of four books: *Awareness of Dying* (Glaser & Strauss, 1965a), *Time for Dying* (Glaser & Strauss, 1968), *Anguish: Case Study of a Dying Patient* (Glaser & Strauss, 1970) and *Status Passage: A formal theory* (Glaser & Strauss, 1971). In addition they published *The Discovery of Grounded Theory* (Glaser & Strauss, 1967) (from now referred to as *Discovery*), which was the first articulation of the GT research approach. The critical success of their study into the dying may have been somewhat of a surprise to some, as up until this juncture, they had previously followed very different academic careers, which were undoubtedly influenced by their earlier training and contrasting qualitative and quantitative approaches to research.

Strauss completed his undergraduate degree in sociology at the University of Virginia, and subsequently Master's and Doctoral degrees at the University of Chicago, a school renowned for its leanings towards pragmatist philosophy, social psychology and ethnography (Bryant & Charmaz, 2010a). Whilst at Chicago Strauss remained under the guidance of the symbolic interactionist Herbert Blumer, who advised that he undertook a programme on social interactionism created by the pragmatist George Mead (Stern, 2009).

Glaser, however, hailed from San Francisco and completed his sociology undergraduate degree in 1952 at Stanford. Following which he studied literature, firstly, at the University of Paris, and then again following his draft into the armed forces at the University of Freiberg in Germany. Upon his return to the USA he enrolled at Columbia University where he studied descriptive statistics alongside methodologist Paul Lazearfield and theorist and sociologist Robert K. Merton prior to the completion of his Doctorate in 1961 (Bryant & Charmaz, 2010a; Stern, 2009).

The Grounded Theory methodology results from the convergence of Glaser's hypothetic deductive approach - no doubt influenced by his training at Columbia - with the contrasting approach of Strauss, whose emphasis upon theory generation was related to time spent at the University of Chicago and the associated influence of pragmatism and symbolic interactionism (Stern, 2009). Primarily the methodology lends itself towards explaining human behaviour within specific contexts (Stern & Porr, 2010), through the systematic generation of theories, derived from the simultaneous comparative analysis and collection of data (Glaser & Strauss, 1967), sourced directly from the context of inquiry (Glaser, 1978). Hence the label 'grounded theory', which is a reflection of a theory seen to be grounded in 'data', being the behaviours and actions of those being studied (Goulding, 2002).

Grounded Theory came about at a time when traditional qualitative research within sociology was being overlooked in favour of the more dominant quantitative approaches (Charmaz, 2006; Suddaby, 2006). It was the intent of Glaser and Strauss at the time to demonstrate that systematic qualitative research approaches could produce outputs equitable with those that result as a consequence of statistically driven quantitative methods (Bryant, 2009; Bryant & Charmaz, 2010a), in particular, as discussed by Suddaby (2006, p. 633):-

They disputed the view that the social and natural sciences dealt with the same type of subject matter. Specifically, Glaser and Strauss challenged prevalent assumptions of “grand theory,” the notion that the purpose of social research is to uncover pre-existing and universal explanations of social behaviour.

Within the seminal text ‘The Discovery of Grounded Theory’ Glaser and Strauss (1967, p. viii) articulate their reasoning behind the development of GT:-

What is required, we believe, is a different perspective on the canons derived from vigorous quantitative verification on such issues as sampling, coding, reliability, validity, indicators, frequency distributions, conceptual formulations, construction of hypotheses, and presentation of evidence. We need to develop canons more suited to the discovery of theory. These guides, along with associated rules of procedure, can help release energies for theorising that are now frozen by the undue emphasis on verification”.

And furthermore they added:

We would all agree that in social research generating theory goes hand in hand with verifying it; but many sociologists have been diverted from this truism in their zeal to test either existing theories or a theory that they have barely started to generate (Glaser & Strauss, 1967, p. 2).

In essence, according to Bryant & Charmaz (2010a), the development of GT provided a method that engendered robust data analysis and theory generation, theories interpreted from the day to day realities of social environments (Suddaby, 2006). Moreover, however, it gave ‘*procedural respectability*’ to qualitative data analysis, whilst challenging and contrasting the accepted traditional and dominant scientific approach to research at the time (Bryant & Charmaz, 2010a).

In the late 1980s and early 1990s the two founders of grounded theory had what could only be described as an intellectual breakup, albeit that their personal relationship remained strong until the death of Strauss in 1996 (Stern, 2009). Their falling out was rooted in what Glaser perceived to be methodological sabotage. He thought that Strauss, and Juliet Corbin, his co-author and prodigy, challenged the integrity of the grounded theory method by introducing a step by step procedural approach (Bryant, 2009; Urquhart, 2001) in their 1990 book the *Basics of Qualitative Research*. Glaser responded to what he considered were

misconceptions within Strauss and Corbin's book by publishing his own methods book, *Emergence vs. Forcing: Basics of Grounded Theory Analysis* (Glaser, 1992). A book in which Glaser published copies of two letters he had sent to Strauss revealing his indignation regarding his and Corbin's book. His apparent umbrage with Strauss at the time is clearly evident in extracts taken from the two letters (Glaser, 1992, pp. 1-2):-

January 1991

As co-originator of grounded theory, I request that you pull the book (Basics of Qualitative Research). It distorts and misconceives grounded theory, while engaging in a gross neglect of 90% of its important ideas. With you as a legitimator, the misconceptions cannot be withstood or explained away.

September 1991

In 1967 we developed together the conceptions of grounded theory set forth in our book, the Discovery of Grounded Theory. In 1988 you published Basic Qualitative Research, which is a book which misconceives our conceptions on grounded theory to an extreme degree, even destructive degree. Furthermore you implied throughout the book my complete endorsement of these misconceptions, which further is very destructive to me and my creativity and my cherished contribution to the field of research methodology.

Strauss never did withdraw the book as Glaser would have liked, and it has since served to introduce the method to students the world over (Charmaz, 2006). Nevertheless, according to Morse (2009), it became evident to the wider community at the time that Glaser and Strauss had developed two idiosyncratic methodological approaches to GT. These retained sufficient differences and now distinguished by the names given to them by Phyllis Stern, viz., Glaserian and Straussian grounded theory.

Extensive discussions pertaining to their individual divergent approaches can be found in Glaser (1978) and Corbin & Strauss (2008). But in brief, Glaser, according to Charmaz (2006) has tended to remain faithful to the original iteration, viewing GT as a means of discovery. A discovery is derived from the creation of multiple categories effused from interpretive data within social phenomena, but one that nevertheless may be reliant upon limited empiricism. Glaser posits that during coding the researcher should continually ask themselves what problem are people in the substantive area facing; what is the source of the majority of the variation in processing it; and what category does the incident relate to? Glaser, whose

focus is upon generating hypotheses, also rejects the approach of Strauss who suggests that to verify relationships researchers should 'flip-flop' (Corbin & Strauss, 2008) between inductive and deductive thinking (Brooks, 1997). Conversely, Strauss emphasises that researchers should be asking substantive questions of the data, and moreover has moved away from the comparative methods evident within the original GTM, which were first articulated within *Discovery*, and further still by infusing verification into the method.

There remains some conjecture relating to the philosophical leaning of both Glaserian (also known as Classic GT) and Straussian GT. Historically it has been argued that Glaserian GT relied upon a critical realist post positivist ontology, and a somewhat modified albeit objectivist epistemology. However, Hallberg (2006) argues that Glaser's insistence upon '*emergence*' would suggest an objectivist/dualist position, thereby revealing a more positivistic tendency. He further contests that Straussian GT with its focus on the need to listen to the voice of participants, should not be viewed categorically as positivist, but rather it demonstrates an inclination towards post positivist traditions, with a probable relativist ontological perspective and subjectivist epistemological standpoint.

Since the 1967 publication of the *Discovery*, the GT method has witnessed a methodological evolution of sorts. The original approach to discovering substantive theories as articulated by Glaser & Strauss (1967) does not currently stand alone. Not only have the original authors extended their own individual approaches, but so too have other qualitative researchers, including some of their students (Locke & Locke, 2001). It is arguable that some of the evolution of the GT method is attributable to its success and the propensity for proponents from various disciplines to adapt the methodology (Stern & Porr, 2010) to suit contexts that were not originally considered when the methodology was initially developed. As such there continues to be a degree of discourse between adherents, with some contention and confusion continuing to exist surrounding methodological approaches and other determinants regarding what are deemed to be the fundamental characteristics of GT. What is largely agreed upon, however, is that while alternative approaches to GT method exist they all come under the same familial grounded theory umbrella, albeit that they may have different interpretations (Dey, 2007).

Hood (2007) contends, however, that a proclivity exists amongst authors and academics to present theories and studies under the guise of grounded theories that when held up to subsequent scrutiny may not meet the specific criteria of a GT study. In essence some may

have undertaken a qualitative study and incorporated some degree of content analysis and others may be under the incorrect presumption that a grounded theory label can be attached to any form of inductive study. She goes on to argue that there are three fundamental characteristics of a grounded theory: constant comparative analysis, theoretical sampling and theoretical saturation. Furthermore, she suggests that these three factors are responsible for giving the GTM its unique power (Hood, 2007).

This study, although guided by the work of both Glaser and Strauss, will not directly follow either their joint, or individual approaches to GT. Mills, Bonner & Francis (2008, p. 26) present the argument that the many variants of the GT method “[e]xist on a methodological spiral and reflect their epistemological underpinnings”. It would be remiss of any researcher to adopt a methodological approach constrained by, or associated with, an epistemological or ontological stance that was not congruous with their own beliefs (Ghezeljeh & Emami, 2009; Mills, et al., 2008). As such this study is located within the constructivist paradigm, embedded within the broader family of GT method, a position which according to Mills et al.,(2008) situates this study at the latter end of the methodological spiral enabling the inquirer to formulate a construction of multiple realities. This distinguishes it from both the approaches of Glaser and Strauss, as according to Bryant and Charmaz (2010b, p. 10) it “[e]mphasizes how data, analysis, and methodological strategies become constructed, and takes into account the research contexts and researchers’ positions, perspectives, priorities and interactions”.

3.7 SUMMARY

This chapter embarked by introducing and discussing quantitative and qualitative frameworks as the two dominant approaches to research. By introducing some previously identified problems within the research context it proceeded to discount quantitative methods as being appropriate for this study and explained the use of a qualitative approach. A lengthy discourse subsequently addressed the inherent beliefs, or paradigms of researchers, their contributory parts, association, and relationship to each other. The rationale was presented for electing a constructivist paradigm and adopting grounded theory as the strategy for inquiry. The chapter concluded by introducing grounded theory, and discussing its subsequent evolution, and justifying the particular constructivist approach taken by this study.

CHAPTER 4

DATA GENERATION & ANALYSIS

4.1 INTRODUCTION

This chapter discusses in some detail the strategies, techniques, processes and considerations implemented and addressed in regards to the generation of data and its analysis. Following on from the previous chapter, the methodological steps and structure of the process of conducting a grounded theory study are introduced. After which the research context is defined, or bounded, and is accompanied with appurtenant justification. The chapter subsequently progresses to discuss data gathering within a qualitative study, specifically within a constructivist paradigm, and justifies the use of interviews as the primary form of data generation. The rationale for subscribing to, and adopting particular sampling techniques, is presented and the relevant approaches described. In view of my previous construction industry experience I discuss the strategies used to facilitate gaining access to research participants, how objections and obstacles were overcome and the relevance of industry experience as it relates to gaining access to and the interviewing of agreeable informants. As qualitative studies incorporating interviews are renowned for producing voluminous quantities of data, appropriate data security and management precautions are discussed with reference to the use of the computer assisted qualitative data analysis software (CAQDAS) application NVivo to ease this task. The use of NVivo within grounded theory studies is becoming ever more popular, and with this in mind the discussion continues to reflect how the configuration and structure of the software attends the analytical requirements of grounded theory. The penultimate section of the chapter tackles the ambiguous and sometimes contentious question of how to demonstrate rigor and adequately evaluate qualitative inquiries, especially those that incorporate a grounded theory. The chapter closes with a synopsis of the procedures implemented before, during and following the research process to ensure the ethical integrity of both the researcher and the research process itself.

4.2. GROUNDED THEORY – THE PROCESS

Unlike the traditional positivist approach to research, a grounded theory study does not commence with a hypotheses and a set of rigid research questions. A point reinforced by Glaser (1992, p. 15) who articulates what he perceives to be an underlying problem within conventional positivist studies when he asserts “One does not begin with preconceived ideas or extant theory and then force them on data for the purpose of verifying them....”. Rather, the research questions are borne from the generation of data within the act of the research itself (Birks & Mills, 2011). As too are any resultant hypotheses, concepts and theories which are inherently supported by being directly grounded in the data from which they are drawn (Glaser & Strauss, 1967). In this regard, the methodological means by which a grounded theorist addresses research phenomena is distinctly different from other methodological frameworks.

Much of the strength of grounded theory, and what clearly differentiates it from other qualitative research approaches can be attributed to the fact that it is a very “[I]terative, process orientated, analytic procedure....” (Binder & Edwards, 2010, p. 238). Proponents of grounded theory studies are not reduced to adopting blind subjectivity and interpretation (Pidgeon & Henwood, 1997), when assessing the voluminous amounts of often unstructured data that qualitative studies can produce (Henwood & Pidgeon, 1992). Rather, they have at their disposal an explicit flexible process and template, as a means of guiding interpretation and analysis. This very quickly, through an iterative lens, illuminates the essence of the data without the degradation of detail (Charmaz, 2006). Albeit that grounded theory, has according to Charmaz (2008, p. 161) “[e]volved into a constellation of methods rather than a unitary approachmajor versions of grounded theory also share certain similar guidelines”. As a process grounded theory commences with purposive convenience sampling that is designed to elicit responses from a broad range of participants within the substantive context (Hallberg, 2006). Thereafter, continuing through recursive procedural steps (as outlined in the following sections) until culminating in the generation of theory.

4.2.1 Coding

In its simplest form coding is the process of attributing descriptive labels to portions of raw data, often within transcripts, that in essence may be a single word, line, sentence or paragraph (Miles & Huberman, 1994), which are subsequently consumed into higher level concepts and categories (Jones & Alony, 2011; Stern & Porr, 2010). The label ascribed to a segment of data is merely a manner to succinctly encapsulate what is happening within the specific context (Charmaz, 2006). Initial labels promote raw data to an early conceptual status which enables it to be discussed, compared, and contrasted against other sections of data at some future time. With this in mind Corbin & Strauss (2008, p. 65) view coding as a means of “deriving and developing concepts from data”. However, Glaser (1992, p. 38) extends this definition of coding somewhat to include “conceptualizing data by constant comparison of incident with incident, and incident with concept to emerge more categories and their properties.”

Coding commences with what Glaser (1992) and Corbin & Strauss (2008) would refer to as open coding, but that Charmaz (2006) deems to be initial coding. Essentially, however, they are describing the same functional aspect of grounded theory, which is the foundation for subsequent analytic interrogation of the data. Open coding as it is more commonly known was largely adopted here because it is a relatively efficient method of exploring, identifying and revealing theoretical opportunities that are within the milieu of data (Charmaz, 2006; Corbin & Strauss, 2008). Moreover, it is a crucial step in the formulation and development of concepts. Coding is a reflective process that can be both tedious and time consuming (Urquhart, 2001; White & Marsh, 2006), nevertheless its importance cannot be over emphasised. Reflection is necessary to enable adequate consideration of all meanings that could be assigned to the data, prior to the attachment of an explanatory label (Corbin & Strauss, 2008). Furthermore, and perhaps more importantly, the revelation of early codes and concepts, can, and often will drive the progressive direction that the study evolves towards via later theoretical sampling (Glaser, 1978).

Glaser (1978, p. 57) suggests that to facilitate open coding, that researchers should ask three questions of the data:-

1. What is this data a study of?
2. What category does this incident indicate?
3. What is actually happening in the data?

Questions like these facilitate the rendering of the data in directions that might otherwise remain unconscionable. Glaser (1978, pp. 74 - 81), while discussing theoretical coding, offers additional *aide memoirs* in the form of eighteen coding families, that are neither exhaustive nor mutually exclusive, ranging from the 'Six C's' of causes, contexts, contingencies, consequences, covariance's and conditions through to 'models', being pictorial representations of relationships. Charmaz (2006, p. 65) however while discussing Glaser's reference to families, argues that "Glaser (1978) offers no criteria for establishing what we should accept as a coding family, or reasons why we should accept his depiction of them".

Far from being overly rigid and prescriptive, grounded theory remains a flexible research methodology (Charmaz, 2003a) and as such individual researchers may subscribe to idiosyncratic reflective approaches and means to coding. However, as Corbin et al., (2008) attest, open coding requires the setting aside of bias and preconceptions so as to enable the data to guide interpretation through thought processes that are both lateral and abstract, whilst mitigating the likelihood of blind or filtered data interrogation (Mills, Bonner, & Francis, 2006). Furthermore, a constructivist grounded theory approach such as is used in this study, whilst loyal to traditional methods, does not concur with all-time honoured assumptions (Ghezeljeh & Emami, 2009) and attempts to extend interpretation and coding to account for tacit knowledge, beliefs and values (Mills, et al., 2006, 2008).

4.2.2 Constant Comparative Analysis

Theoretical development within grounded theory is facilitated by the use Constant Comparative Analysis, and differs from many other methodological approaches in that analysis is not a solitary, isolated, onetime event. It is an on-going evolutionary process that progresses from the point of initial data collection until the final write up of completed theory. This encompasses codes, categories, properties and all other aspects of the data

(Hallberg, 2006). Commencing with open coding and the ascription of labels to parcels of data, analysis continues by comparing and contrasting labels, incidents and developing concepts against each other. Progressive analysis invariably develops codes and themes that shape the on-going nature of the study, and decisions pertaining to the next source of data, or interview. Subsequent analysis of which will produce more codes, labels, incidents and concepts that once again are compared with and contrasted against each other, in addition to all pre-existing labels, incidents and concepts (Stern & Porr, 2010). Constructs with similar characteristics are subsequently mustered together beneath the umbrella of a new or higher level concept (Corbin & Strauss, 2008). This cyclical and oscillatory procedure, that obscures the mutual exclusivity of data collection and analysis (Loosemore, 1999), is known as constant comparative analysis, or the comparative method. Which according to Glaser & Strauss (1967, p. 103) is purported to generate “[a] theory that is integrated, consistent, plausible, close to the data.”

4.2.3 Memoing

Predominantly conceptual by nature, memos are the cohesion that binds sometimes random, disjointed and isolated segments of data together into a discernible cluster (Miles & Huberman, 1994). They are the life blood of grounded theory, that enable analytic interpretation, and act as the umbilical between data collection and the emergence of theory (Charmaz, 2006; Lempert, 2007). In the words of Glaser (1978, p. 83) “Memos are the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding.” Glaser (1978, p. 83) goes as far as to suggest that the researcher who negates to include the process of memo writing into their analysis of data “[i]s not doing grounded theory.”

Memos can be used with reference to any type of data. Being reflective thoughts and ideas, they provide a depository of prior insights and reflections that can subsequently be revisited (Goulding, 2002). At times the commencement of memos will be a precursor to the collection of data, but regardless, memo writing is an integral part of grounded theory analysis, and, as such, continues throughout the study until completion (Miles & Huberman, 1994).

The composition of memos is inherently interwoven into each step of the process of comparative analysis. The formulation of codes will often generate new thoughts and

reflections which necessitate memoing. Similarly earlier memos when compared or contrasted against new data, codes, incidents or memos can instigate still more new ideas, codes, concepts and memos. As Locke (2001, p. 45) says when discussing the practice of memoing:-

It helps to capture ideas as and when they strike, to develop lines of thought about what is happening in the data, to transition between the emerging theoretical framework and existing relevant disciplinary theory, and it is a vehicle to compose initial drafts of documents to be submitted for publication.

4.2.4 Focussed Coding

Focussed coding, or selective coding, is the second stage of the coding process, and serves several purposes. Tending to be open conceptual codes that have occurred most often in initial analysis, they are a means of both sorting and categorising relevant codes, whilst disqualifying others (Charmaz, 2003a). But furthermore, focussed coding assists in the formulation and development of categories, by determining their characteristics, and how they subsequently relate and fit within the wider context (Birks & Mills, 2011).

A Glaserian approach to grounded theory would use selective coding as a way “[t]o delimit the theory to one core variable” (Glaser, 1978, p. 61). This is not to say that Glaser suggests the abandonment of all other codes, but rather addresses his philosophy that one core variable will account for most of the data and as such by maintaining focus around the core variable and its associated sub categories, the time taken for remaining on-going data collection is significantly reduced (Holton, 2007).

Charmaz (Charmaz, 2003a) argues that focussed codes, while accounting for the majority of the data, also enables more accurate categorisation of them. Moreover she suggests that it is only by coding at this higher and more conceptual level that we are able examine the explanatory power of the developing theoretical model and the substantive phenomena that it is representative of.

The first stage of the coding process, open coding is primarily a method of data deconstruction or what has been referred to as fracturing the data into its smaller composite parts. Focussed coding, to cite Charmaz (2006, p. 57) “[i]s the second major phase in coding. The codes are more directed, selective, and conceptual than word by word, line by line, and incident by incident coding”. Furthermore it is a process that rearranges,

constructs and connects the broken down data to reconstitute significantly more abstract concepts than would ordinarily be produced by thematic investigation (Birks & Mills, 2011). Focussed coding is an evolving and emergent process of refinement, inclusion and exclusion. The constant comparative method predicates that codes are continuously questioned, contrasted, and compared to new and existing data, memos and codes. Consequentially as analysis progresses the number of codes will reduce as those with greater conceptual significance absorb and explain those with the least. Thus, the concepts and categories that subsequently emerge from the coding underpin on-going theoretical development (Charmaz, 2003a).

4.2.5 Axial Coding

Straussian grounded theory follows the practice of open and focussed coding but in addition utilises axial coding (Corbin & Strauss, 1990; Polit & Beck, 2010). Axial coding, delineates the characteristics of a category (Charmaz, 2006), and coexists with open coding (Corbin & Strauss, 2008) within a simultaneous analytical process. According to Goulding (2002, p. 78) “Axial coding is the appreciation of concepts in terms of their dynamic interrelationships.” It is referred to as axial coding because coding focuses upon the relationships between a major central, or axial category and its associated sub categories (Charmaz, 2006; Parahoo, 2006). Urquhart (2007) views axial coding as going a step beyond focussed coding. However, she also contests that it presents an unnecessary and unwarranted level of complexity to analysis, especially for the neophyte researcher. Moreover, she posits that it restricts possibilities for theoretical conjecture.

Although axial coding is derived from the tenets of Straussian grounded theory, it nevertheless mimics to some degree facets of focussed and open coding. In practice it is only one of many concurrent analytical processes that merge and overlap and as such distinguishing where focussed coding ends and axial coding commences is to say the least somewhat problematic. A point perhaps contributory to Corbin & Strauss (2008) removing a chapter specific to axial coding from the latest version of their well-regarded book “*Basics of Qualitative Research 3e*’.

4.2.6 Theoretical Sampling

Theoretical sampling (Glaser & Strauss, 1967) should not be confused for sampling approaches utilised in other qualitative research methods, and furthermore to fully understand it, “[w]e must relinquish our preconceptions about what sampling means” (Charmaz, 2006, p. 99). Within the context of a grounded theory study, theoretical sampling is directed by the constant comparative method, collecting additional data based upon concepts that have emerged during the analysis of previously collected data (Corbin & Strauss, 2008). The researcher simultaneously collects, codes and then analyses data to determine what data next needs collecting, and where the necessary data is to be acquired from (Glaser & Strauss, 1967). This is required because early conceptual and theoretical development is normally drawn from incomplete data. This type of sampling is very different to other methods in that it is highly flexible and responds to the data rather than being determined prior to the commencement of the research. It is more rational than applying random sampling, of which Stern says (cited in Locke & Locke, 2001, p. 55) “[m]akes as much sense as seeking information in the library by randomly selecting a book from a randomly selected shelf”.

In simple terms, according to Glaser & Strauss (1967, p. 47) two questions drive the ongoing direction of sampling; “*What* groups or subgroups does one turn to *next* in data collection”, and secondly, “[f]or *what* theoretical purpose”? Thus, theoretical sampling captures delimited data, and seeks to fill any data inconsistencies or gaps by directing sampling towards sources able to best fill theoretical voids and deficiencies (Charmaz, 2003a). Concepts and categories generated from data collection thus inform the next round of data (Bryant & Charmaz, 2010b). As opposed to testing and verifying hypotheses, theoretical sampling is concerned with the discovery of new concepts and their associated properties (Corbin & Strauss, 2008). The iterative process of theoretical sampling is an instrument used to exhaust the boundaries and properties of a developing conceptual category via saturation (Birks & Mills, 2011). Data collection, coding and analysis stop when the point of theoretical saturation has been achieved.

4.2.7 Theoretical Saturation

The principles of grounded theory proclaim that the objective of the constant comparative method is to reach the point of theoretical saturation (Charmaz, 2006). At one time it was said that this referred to a stage of analysis whereby on-going collection of data would only lead to the production of findings comparable with those already found (Marshall & Rossman, 2010). In reality, however, the concept of saturation, according to Bowen (2008, p. 139) is one that is not clearly defined, and as such “[r]emains nebulous”, and the source of literary disagreements (Charmaz, 2006).

There is no formal prescription outlining explicitly how researchers can be assured with some degree of confidence that they have reached theoretical saturation, and in reality it is questionable as to if this point is ever truly achieved. This uncertainty stems from the confusion researchers are often faced with when attempting to reconcile what saturation means within a specific context and how to know when to cease data collection. Mead (as cited in Morse, 1995, p. 147) is said to have suggested that an indication of reaching saturation can be gleaned from a researcher reaching a certain threshold of boredom, evident when they had “*heard it all*”. Holton (2007, p. 281), however, views the issue as a simple one, suggesting that “One stops when one no longer needs to continue”. She concedes, however, that the challenge grounded theorists face is learning how to identify when this point is reached.

Corbin et al., (2008, p. 263) define theoretical saturation thus, “The point in analysis when all categories are well developed in terms of properties, dimensions, and variations. Further data gathering and analysis add little new to the conceptualisation, though variations can always be discovered”. Signs that this point in the research has been achieved include the repetition of data from varying sources, the subsequent confirmation of existing conceptual categories (Suddaby, 2006), combined with the cessation of emergent new themes (Bowen, 2008).

Many qualitative researchers make assertions that ‘saturation’ has been achieved, without demonstrable evidential support (Caelli, Ray, & Mill, 2008) which is arguably negligent, and detrimental to the integrity of a study. Achieving theoretical saturation is an essential criterion for integrating the final grounded theory (Birks & Mills, 2011), but further, failing to reach saturation serves to not only reduce the quality of research, but demonstrates that

theoretical opportunities surrounding the research phenomena have not been fully exhausted, thereby discounting the validity of any subsequent findings (Morse, 1995).

4.2.8 Theoretical Sorting & Diagramming

Theoretical sorting, like memoing is another critical step on the grounded theory journey, that should not be overlooked (Glaser, 1978) as potentially omitting this analytical step will result in the production of one dimensional, debased and ill integrated theory (Glaser & Holton, 2004). It is a result of the process of documenting and committing reflections and ideas surrounding data and incidents to memos that conceptual strength and clarity grows, and from which theoretical insights emerge (Charmaz, 2006). As Glaser (1978, p. 116) asserts “[i]deational memos are the fund of grounded theory”, from which he goes on to elaborate and emphasise their theoretical importance when he continues “[t]he theoretical sorting of memos is the key to formulating the theory for presentation...” Prior to sorting memos conceptual links may not be evident. The process is such that associations and relationships are identified that generate the theoretical framework that inevitably leads to the full grounded theory (Glaser & Holton, 2004).

Sorting presents another opportunity to compare and contrast concepts and categories, whilst refining theoretical integration (Charmaz, 2006). Moreover, it aids theoretical saturation of concepts, reveals otherwise unconsidered codes and the logical formation of conceptual inter relationships (Stern & Porr, 2010).

While some researchers are able to obtain the required degree of abstraction during theoretical sorting, many others benefit from visualisation. In this regard, diagrams, or “Visual devices that depict relationships between analytic concepts” (Corbin & Strauss, 2008, p. 117) help to elevate reasoning. For many grounded theorists diagramming or modelling conceptual relationships has become an innate part of theoretical development (Charmaz, 2006).

Grounded theory is, according to Glaser (1978, p. 116) “[a] do-it-yourself methodology”, meaning that only the researcher has sufficient sensitivity, and is sufficiently close enough to the data to interpret relevant relationships and associations. Likewise only they will understand the language of their own written memos. Their proximity to the data nevertheless can also blind them to what it may be telling them. Simultaneous sorting and diagramming, however, forces a researcher to question conceptual preconceptions while

providing new theoretical insight, the culmination of which is an *'integrated model'* from which "a dense, complex theory" can be written (Glaser, 1978, p. 117).

4.3 DEFINING THE RESEARCH CONTEXT

It is not unusual for qualitative research to be conducted within the social context under study. However, unless an inquiry into a particular phenomenon has a very limited or narrow focus, it is unrealistic that all actors, events and scenarios pertaining to the substantive context of the study can be investigated with the requisite degree of integrity (Marshall & Rossman, 2010). Furthermore, it remains that problems can arise relating to the selection of groups, individuals and locations to study as a consequence of the emphasis interpretive research places upon investigation within the natural setting (Burgess, 1984). It is of no surprise consequently that Burgess (1984, p. 54) contests "It is never possible for the researcher to be able to study all the people and all the events in a social situation".

It is readily apparent that if for no other reasons than time, financial and logistical ones, the scope of a proposed study requires bounding (Creswell, 2009). In the words of Burgess (1984, p. 53) "[r]esearchers need to define their field of study and to narrow the focus of their work". This point is highlighted by Bygrave and Hofer (cited in Bruyat & Julien, 2001, p. 166) who assert that "Good science has to begin with good definitions." Both propositions are inherently logical, but raise the question, what should be the primary considerations when determining the parameters of a study? Bogdan and Biklen (2007) go some way towards answering this question with their suggestions. It is their opinion that qualitative researchers, while maintaining flexibility, should direct their attention firstly towards such things as determining the study's location, followed by deciding how potential participants will be identified, selected and recruited. How these issues are ultimately addressed is enormously significant upon the ultimate outcome of any study. Miles and Huberman (1994, p. 27) allude to this fact in their statement "Your choices – whom to look at or talk with, where, when, about what, and why - all place limits on the conclusions you can draw, and on how confident you and others feel about them."

In line with the advice of Bogdan et al., (2007, p. 56) to "Think small..." to be "[p]ractical..." and focus study upon an area that "[s]eems reasonable in size and complexity so that it can be completed with the time and resources available". I made several conscious decisions that subsequently defined and bounded this study that related to the following:

- Defining the parameters of the construction industry for the purpose of this study.
- Establishing the boundaries for the types of organisations that would be sampled.
- Determining the organisational positions of potential participants to be studied.
- Outlining the geographic locations of participants.

Although similar procurement practices may be evident within varying sectors of the construction industry, it remains that for the most part the actors within contrasting sectors are different. As such it is likely that some conflicting cultural norms and beliefs may have developed over time. Further, from a theoretical perspective the focus of this study is on intra, and not inter cultural relationships. But perhaps more importantly, from a viewpoint of practicality, the size and diversity of the construction industry combined with finite time and financial resources necessitated the need to strictly outline what constitutes the limits of the construction industry within this study. With this in mind the industry within the study is limited to that part of the industry involved with the construction and erection of new buildings of either a residential, commercial or industrial nature, or redevelopment of the same. It specifically excludes what by many would be considered to be civil construction projects such as roads, bridges and any other similar structures.

An individual supply chain for even a relatively small sized construction project would include an inordinate number of actors, with varying degrees of procurement, and project influence. Many of these aforementioned actors would make procurement decisions that impact upon themselves only, while for others; decisions could have far wider reaching implications for other supply chain members, and the project in hand. This thesis limits the extent of the organisations to be sampled to those actively involved in the design, procurement and construction process, or related industry spokespersons; it does not extend to include third party material suppliers. What is more, as the barriers to entry into the construction industry can be minimal, only organisations larger than sole proprietors and recognised as being established and active members of the industry will be considered for inclusion.

Thus far I have outlined both the parameters of the construction industry and established the boundaries of the types of organisations that this study focuses upon, but have not addressed individual participants. According to Janice Morse (2007, p. 231):-

An excellent participant for grounded theory is one who has been through, or observed, the experience under investigation. Participants must therefore be experts in the experience or the phenomena under investigation.... and they must be reflective, willing, and able to speak articulately about the experience.

The selection of suitable participants for this study therefore followed the advice of Morse (2007). Potential participants are categorised as those members of construction organisations who are both responsible for procurement decisions, and have first-hand experience and knowledge of procurement practices. In general these criteria dictate that within larger organisations, which tend to be a minority, this experience and responsibility is predominantly the domain of senior managerial staff members. But within the majority of industry members, who would be best described as small to medium enterprises (SMEs), this expertise may exist amongst senior staff, but otherwise within company owners and directors.

The final consideration with regards to defining the research context is related to the geographic locations of participant organisations. The question I asked myself was; will the findings of the study be either positively or negatively influenced by data generated from organisations situated in different geographic locations within New Zealand? In other words, would independent industry sub-cultures exist within some areas of provincial New Zealand that would limit the generalisation of any subsequent findings and substantive theory? To answer this question I firstly drew upon my own previous experience and knowledge of the construction industry within New Zealand, and secondly I took advice from professionals working within the industry at the time. From a personal perspective my previous experience included work on construction projects in geographic locations that accounted for over thirty per cent of New Zealand's population, including the largest city. However, I had little knowledge of practices within other regions of the country. I was confident, however, that aside from idiosyncratic localised organisational favouritisms that procurement practices and behaviours were consistent across the region that I had first-hand experience of. Other professionals I spoke to concurred with my opinion. It was their contention that the proliferation and dominance of a few larger construction companies throughout the country, combined with the relatively small size of both the population and construction industry, had resulted in creating a homogenous construction industry, with one discrete industry culture and consistent organisational procurement practices. For the

study the practical implications of this information were that the only limitations surrounding the generation of data were confined to those that consisted of the financial and logistical kind.

4.4 DATA GATHERING

Aside from the requisite ascription of field notes and memos as data within a grounded theory, any one of a plethora of other methods remains available to the inquirer as potential instruments of data generation. This is largely due to the wide range of data available to a grounded theorist who:-

[c]onsiders all relevant information pertaining to the focus of inquiry as potential data....Data may include everything from what the researcher sees, hears, smells and feels about the research topic, to everything the researcher knows based on academic, research and personal experiences (Stern & Porr, 2010, pp. 50 - 51).

Moreover, however, decisions relating to the selection of one, or a combination of data gathering methods are best determined by the phenomena under inquiry (Corbin & Strauss, 2008).

This thesis focuses upon understanding the behaviours and actions of individuals within a fragmented group of heterogeneous construction entities. In addition their behaviours exhibit themselves across a broad range of contextual diversity, such as varying procurement methods on multiple construction projects. This, combined with time constraints, negated the use of any type of data gathering approach that focused upon real time events such as observation or participation. Consequentially, data was best served by acquiring it from a retrospect historical context. It is for these reasons that this study follows the route adopted by many other qualitative and grounded theory studies and uses the interview as the preferred instrument of data generation (Birks & Mills, 2011; Burgess, 1984; Goulding, 2002).

Qualitative interviews described as a 'conversation with a purpose' (Burgess, 1984, p. 102), generally follow one of three norms, the structured, semi-structured and unstructured interview. The structured interview, however, was considered and immediately discounted as it challenged my epistemological beliefs. Structured interviews retain control tightly within the hands of the researcher, who, as the research instrument is somewhat remote

from the participant. Participants therefore have minimal opportunity to express opinions or views outside the parameters of a list of predetermined questions (Burgess, 1984). Issues that are clearly more aligned to a positivist objectivist approach to a study.

As a constructivist I believe that data is not collected, nor discovered, rather it is co-generated as a result of researcher participant interaction. According to Charmaz (2003b, p. 313) “The constructivist’s approach places priority on the phenomena of study and sees both data and analysis as created from the shared experiences of researcher and participants and the researcher’s relationships with participants”. Therefore, it is necessary that interviewees are not constrained by questions and are able to opine freely, and discuss any aspect of the inquiry that they may construe to be relevant. Moreover, the objective of constructivist grounded theory is “[t]o position research relative to the social circumstances impinging on it” (Charmaz, 2009, p. 134), an ambition that is only achievable by garnering an intimate understanding of the phenomena from the perspectives of those who have lived the experience. Thus, to meet this end, semi structured in-depth conversational interviewing (Goulding, 2002), or what Charmaz (2006, p. 25) has referred to as *Intensive Interviewing* was selected to be the most suitable instrument for data gathering. Further, whilst not adhering to a totally unstructured interview approach, which Burgess (1984, p. 106) suggests “[d]raws on the knowledge that the researcher has of a social situation”, the adopted approach nevertheless allowed the freedom for me to inject personal practical exemplars into discussions. Semi structured interviews therefore offered the flexibility required, facilitated the building of rapport, enabled thorough discourse, whilst maximising the likelihood of identifying unconsidered or serendipitous opportunities (Smith, 1995).

4.5 SAMPLING

Unlike the strict sampling pedagogies traditionally followed within quantitative research, qualitative sampling procedures are less defined. Nevertheless, qualitative researchers have an obligation to carefully consider sampling methods as ad hoc ill-conceived approaches more often than not result in impacting upon the overall quality of the research (Coyne, 1997). As Miles et al., (1994, p. 27) concede, qualitative “Sampling may look easy”, however “....[d]eciding where to look is not easy”, but yet so crucial.

The majority of sampling within a grounded theory comes in the form of theoretical sampling, as has been discussed previously in this chapter. Theoretical sampling, however, is

a process initially used to facilitate filling gaps evident in the development of categories and their associated properties, which have emerged from nascent data gathering and analysis (Charmaz, 2006). Within this study the strategy for initial data gathering utilised typical case purposive sampling in the first instance, subsequently followed by snowball sampling.

Primarily the major consideration in purposive sampling is who in the opinion of the researcher can provide the most suitable data to meet the aim of the study (Davies, 2007; Kumar, 2005)? Typical case sampling is a variant of purposive sampling, whereby the researcher focuses their study upon organisations or individuals who are representative of, or part of the phenomena under investigation (Onwuegbuzie & Leech, 2007). Ordinarily prior to the selection of subjects to study, it would be considered normal that the advice of experts in the relative area of study be sought to obtain a consensus as to what constitutes a typical case (Onwuegbuzie & Leech, 2007). In this study, however, this norm was not adhered to as it was considered unnecessary to seek the advice of third parties to identify 'what a typical case' looked like. As I had personally spent many years working within the industry, and therefore had some insight with regards to which organisational positions would retain the required information and which businesses to initially approach.

In some respects snowball sampling could be regarded as a convenience sample (Bryman & Bell, 2007), however, it is actually another variant of purposive sampling. Using this approach, contact is made with a small group of individuals or organisations suitably representative of the research study. These individuals are subsequently asked to identify others known to them that may also be suitable for the proposed research study and so on (Kumar, 2005). The process continues until the required number of contacts has been made. It is a method that is very suitable for creating a network of inter-related contacts and also provides a good fit with theoretical sampling (Bryman & Bell, 2007).

Within the scope of this study Snowball Sampling was extremely advantageous. The very nature of this thesis necessitated a broad range of contacts. Therefore access to a diverse number of stakeholders within the construction industry supply chain was crucial to generate data of sufficient quality to ensure overall success. Moreover as Charmaz (2006, pp. 132-133) alludes to, when using a grounded theory approach "Studying many cases is crucial, in part because researchers may become aware of their preconceptions about their topics", moreover she suggests that small studies "[r]isk being disconnected from their social contexts and situations".

The strategic rationale for initial typical case sampling was to sample from amongst the largest, most established and well-regarded construction companies within New Zealand. Three reasons underpinned this rationale. Firstly, these organisations would hold a vast wealth of knowledge pertaining to all aspects of construction procurement, as they, more than other smaller organisations were likely to have been familiar with not only collaborative but the entire gamut of common procurement approaches. Secondly, each of the larger organisations had a national presence, with either a head office or satellite division located locally, which simplified transport logistics. Lastly, but significantly, larger construction companies generally worked simultaneously on numerous large projects, hence they maintained vertical relationships across a broad range of independent supply chains. Adopting this strategy allowed me to snowball sample and obtain contact and background details of stakeholders and supply chain members that were known to be active within the industry. Initial snowball sampling lead me to the likes of Clients, Architects and sub trade companies, from which subsequent sampling revealed other tiers of construction organisations. This process proved to be invaluable as I very quickly created a robust database of contacts across the industry. Moreover, it gave me some understanding of the nature of procurement practices across a large range of interwoven relationships and networks. This subsequently made identifying participants for theoretical sampling less problematic than it may have otherwise been.

4.6 GAINING ACCESS

The initial problem with many qualitative type studies is overcoming the obstacles presented when attempting to gain access to research participants, such as handling objections and securing permissions to undertake a study (Bogdan & Bilken, 2007). Regardless, access to participants is fundamental to qualitative research, as Burgess (1984, p. 45) states:-

.... [a]ccess is a prerequisite; a precondition for research to be conducted.access influences the reliability and validity of the data that the researcher subsequently obtains. The points of contact which the researcher has with an institution, organisation or group will influence the collection of data and the subsequent perspective that can be portrayed.

Burgess correctly points out the importance of securing access, but more than this he highlights the risks involved with not adequately considering its implications upon the integrity and credibility of research findings.

Within this study I was conscious from the outset that the quality of this thesis had an intrinsic relationship with the quality of research participants. Furthermore, I was acutely aware that the number of participant organisations this study necessitated access to, was, as a result of the decision to follow a grounded theory approach an unknown quantity. Also it represented a number that ultimately was only determined once emergent concepts and categories had reached the point of theoretical saturation. In addition, it was also perceived from the outset that accessing both agreeable and desirable target participants may have been problematic. Firstly, it was necessary to draw upon participants from across a broad range of specialist organisations. Secondly, this study's objective was to secure the permission of senior staff members, who potentially had many competing demands on their time, to participate in at least one interview.

4.6.1 Access Strategy & Overcoming Obstacles

As a precursor to the main research interviews, I undertook preliminary interviews with senior management staff that either owned or worked within organisations that I had pre-existing relationships with. These were in effect pilot interviews that are later discussed in section 4.7.1. With the exception of these organisations which were all contacted by telephone in the first instance, the strategy for approaching all other organisations in the study follows the same process.

Once organisations and personnel had been identified and determined to be suitable participants they were firstly contacted by a formal introductory letter. The letter (see appendix 4) briefly outlines this study, the reasons supporting it and the objectives that I anticipated achieving at the time. Furthermore, it gave participants an indication of the time commitment required, and an idea of what we would be discussing, which was described as a general discussion around their experiences and opinions in relation to construction procurement. It continued on to mention my desire to record and transcribe the interview, with an attached guarantee of anonymity, but also offered to undertake the interview without the need to audio record it, if they were not agreeable. The letter finished with the following brief paragraph:-

We will call your office in the next few days and, if you are willing to participate, we can then arrange an interview time. If you do not wish to take part in this study and would prefer no further contact then please forward an email to:

Markahinton@pg.canterbury.ac.nz, with your name and 'decline' in the subject line.

In total sixty three letters were mailed to potential participants which resulted in six email responses declining a wish to participate, and eight who declined to participate when contacted by phone approximately five days after receipt of the original introductory letter. Thirty six people once contacted by phone agreed to be interviewed at least once, whilst the remaining thirteen people who received letters were either not contactable, or were spoken to by me in the first instance and subsequently failed to make contact with me again to arrange a suitable time and location for an interview after previously saying they would. I interpreted this as reticence on their behalf to be interviewed and as such no further attempts were made to make contact with them.

Whilst prima facie the conversion rate of introductory letters at fifty seven per cent appears to be relatively good, it nevertheless does not truly reflect the varying degrees of effort required to secure access to consenting participants. Some participants were eager to take part in the study, with some contacting me by email expressing their wish to be interviewed prior to me contacting them by telephone. In many instances interviewees could be categorised as belonging to one or more of three groups. The first group predominantly consisted of those people that had at some time in the past needed the assistance of others for research purposes and therefore understood the problems that sometimes exist when seeking out potential research subjects. They perceived taking part as a means to 'pay back' and contribute to either the education system that had served them, or the industry that they worked within. I considered their actions to be acts of delayed reciprocity. The second group included people and organisations that were somehow affiliated with the University I represented. They may have studied there in the past, or had a relation that studied there. But more often than not, their organisation maintained a current working relationship with the University, or hoped to secure a relationship with the University at some time in the future; as such they perceived participation with this study as a possible means to facilitate either position. The last group I considered to be the disenfranchised, those individuals and organisations who were without adequate industry representation, and who viewed this study as a way to be heard. These organisations were for the most part small sub-

contracting businesses whose opinions historically had never been sought and who had a longing to express their frustrations regarding current industry practices to someone who they considered may have a voice.

On making contact with target participants by telephone, as per the conditions and timeframe outlined within my letter of introduction, I often had to overcome objections and obstacles prior to obtaining their commitment to agree to be interviewed. Some raised concerns regarding anonymity, which I addressed by reassuring them of the procedures that were in place, and that would be adhered to ensure their identity was protected. Others had heavy existing pressures on available time because of large workloads. To overcome this problem I offered them the option of being interviewed on any of a selection of times and dates across a period of several weeks. If none were suitable I requested their permission to contact them again in a month, or sometimes two, to confirm their availability at such time. In addition I also offered on some occasions to restrict the length of the interview to the confines of a pre-determined time limitation to fit in with other commitments they may have had on any particular day, or to conduct two smaller interviews on different days.

Situations and comments also arose during preliminary telephone conversations that revealed a reticence by a minority of potential participants to believe that any academic research could reflect and understand the practical realities of the construction industry, and therefore have any relevance to them, an opinion held by some with such veracity that it presented an obstacle to be overcome. This did not come as a surprise to me, as I had often either overheard, or been a party to conversations between various subcontracting trades that espoused similar viewpoints when I worked within the industry. Within this context I generally informed participants of my own professional background, and familiarity with the industry. I consciously phrased my language in terms that I considered related to the culture of the industry. Furthermore, I attempted to demonstrate empathy towards them and the construction industry by relating a practical example of construction issues drawn from my own experience. In instances such as these my *'pre-understanding'* of the industry proved to be a valuable tool to alleviate and overcome concerns and obstacles. Unquestionably my background was seen to be somewhat unusual for someone who participants originally perceived, and understood to be a lifetime academic. Nevertheless, it

helped to break down some barriers, and intrigued several people sufficiently to want to know more about this study and myself.

Although the reason for making telephone contact with potential research participants was primarily to seek their agreement to be interviewed for this study, these contact points also proved to be a valuable source of information. Conversations typically tended to include a discussion generated by the possible future interviewee pertaining to the construction industry.

In addition to leading to conversations related directly to construction practices, the initial telephone contact with participants often proved to be a source of network contacts. Questions were often asked that related to my professional experience, the types of projects I had worked on, and the personnel and organisations involved. Participants would invariably reciprocate with similar information and details. As a consequence of these discussions names and organisations would often come into the conversations that were considered to meet the criteria for this study. With a forward view towards achieving theoretical saturation at a later point in the study, their details were taken, and included within a growing database of contact information.

As the study progressed past the stage of initial interviews all potential participants were drawn from my existing database of referred contacts, those referred either by snowball sampling, or as a result of telephone conversations with possible interviewees. In all such instances I requested permission of the referrer at the time to use their name when making the initial telephone contact with other participants. This effectively gave the potential interviewee and me a common point of reference and often a point of discussion. In such cases whereby the recipients of introductory letters had already declined to partake in the study by email, this presented no advantage. However, once I had made telephone contact with people, they were far less inclined to decline to be interviewed if they were aware that their peers had previously accepted my invitation.

The approach taken within this study to obtain access, resulted in sometimes lengthy telephone conversations prior to the formal interview itself. The effect of this was to initiate the beginning of a relationship between the interviewee and myself as the interviewer. Notes were taken of all of these conversations, which were subsequently used to source small talk at the beginning of subsequent interviews.

4.6.2 Reflections on Gaining Access

Overall gaining access was more time consuming than was originally anticipated. But notwithstanding this, the procedures followed ensured access to numerous organisations across a spectrum of construction industry related specialisations. Inevitably I had to surmount objections, which was largely expected and anticipated, but that nevertheless required persistence. Being able to demonstrate an understanding of the industry to sometimes disinterested and wary potential participants was on many occasions helpful in obtaining commitments to partake in this research. I am of the firm belief that researchers without practical exposure to the construction industry would be missing an influential tool that in this study proved to be an instrument necessary to secure many of the interviews that were undertaken.

Moreover, I think gaining access to the numbers of organisations that I did was aided somewhat by leveraging off the referral of known peers. But furthermore, I feel a genuine interest exists within the construction industry community to seek answers to many of the issues and challenges they face on a daily basis, and mindful of this many people were happy to oblige my requests for their input and time.

4.7 THE INTERVIEW

The ultimate purpose of any interview within a qualitative study is to formulate interpretations and insights based upon information drawn from an informant with experience of a phenomenon (Bogdan & Bilken, 2007). How the researcher endeavours to approach and conduct the interview process therefore, has a direct relationship to the research outcome (Morse, 2007).

While interviewing may appear to be a simplistic, unconscious, or even intuitive process, “[d]irected by one in order to get information from the other” (Bogdan & Bilken, 2007, p. 103), the reality is that effective interviews contain many similar traits, characteristics and protocols. These include establishing initial relationships and trust (Burgess, 1984; Morse, 2007); maintaining consistent procedures from one interview to the next, asking ‘ice-breaker’ questions early in the interview, and probing questions when required (Creswell, 2009). Moreover, however, the most effective instrument at the disposal of a researcher, having the greatest influence upon the success of interviews, is the experience of the

researcher. Morse (2007, p. 230) sees the value that the experienced interviewer adds to a study as follows:-

Experience enables the researcher to know when to let the participant move forward in the narrative into new areas, or when to move back in the interview to obtain additional details. It takes skill on the part of the researcher to establish trust with the participant quickly and early in the interview process, so that adequate and accurate information may be obtained, and it is the researcher's skill that enables the researcher to sort the relevant from the less pertinent or irrelevant information, while the interview is on-going.

Clearly the more experienced researcher is more readily sensitised to the interview context, and is therefore better positioned to elicit quality data.

At the outset of this study, my own experience of conducting interviews was limited to approximately twenty hours, and while I did not at the time consider myself to be a novice, I was nevertheless aware there was scope for improvement. What is more, although I was confident I had remained sufficiently sensitised to the construction industry, I was cognisant of the fact that my sensitivity may have been limited to the specific context of the electrical sector of the industry. Partly in response to some of these misgivings a limited number of pilot interviews were undertaken prior to commencement of the main study.

4.7.1 Pilot Interviews

Pilot, or preliminary interviews are generally undertaken prior to a main study to identify and foreshadow any potential methodological problems (Kim, 2011). It follows that the overriding benefit of implementing pilot interviews is to enable the researcher to adjust methods or approaches within the main study. Some of the more obvious advantages that piloting presents researchers arguably being the ability to refine techniques, assess any potential bias, and test interview questions (Sampson, 2004). But more so, it is a means of verifying methods and protocols (van Teijlingen & Hundley, 2001) as being suitable for their application, and the effectiveness of the researcher as the research instrument within the research context.

For many studies whereby interviewing is the main form of data gathering the interviewee is normally a stranger to the interviewer (Bogdan & Bilken, 2007). For the purposes of

conducting pilot interviews all participants within this phase of this study were well known to me, as I had in the past maintained a working relationship with them or through a close association of our respective organisations.

In total six pilot interviews were conducted in January 2011, five of which were face to face interviews, with the remaining ones completed by telephone. The participant organisations were selected so as to offer a broad representation of the industry that would present a diversity of contexts and opinions. Three of the participants were owners of their respective companies, whilst the remaining three were very senior managers, responsible for procurement decisions. They belonged to the following types of organisations; large government health authority, commercial building company, national residential construction company, architectural company and an electrical subcontracting company. All participating businesses, organisations and individuals had been active within the construction industry for a minimum of fifteen years.

Several reasons underpinned my desire to both conduct pilot interviews, and interview participants that were known to me. I was aware that this study would necessitate many interviews over an extended period, and that my expertise, or lack of, had potential consequences upon the length and cost of this study, and importantly the quality of the data, as Morse (2007, p. 230) attests. "... [a]ttributes of an excellent interviewer influence the quality of the data and ultimately the size of the sample: the better the data quality, the fewer the number of interviews and participants required in a study". As this study adopts a grounded theory approach the number of interviews required was never predetermined. But nevertheless my effectiveness as an interviewer had implications upon the quality of the data generated at every interview, and as such I wished to minimise the possibility of wasting valuable time and resources on ineffectual interviews. Pilot interviews helped to achieve this objective by enabling me to 'dry run' my interview techniques and questions. The additional experience gained from this process taught me to relax during interviews, which allowed me to better consider participant responses to questions and compose suitable ripostes. But much more than this, these interviews were conducted in an environment that facilitated open and frank conversations. Interviewees were asked at the outset to answer questions honestly and to let me know if they did not comprehend them because they may have, for example, been phrased in terms and language not familiar to them. Alternatively the questions may not have been applicable to their industry sector. As

a result of participants' candidness within the pilot interviews I was able to refine and sensitise my questions somewhat, prior to commencing formal interviews with participants I was less familiar with.

Even though pilot interviews were undertaken with participants familiar to me, it did not negate the necessity to adhere to correct interview protocols (see section 4.7.2), which were subsequently followed. On average the formal pilot interviews lasted for sixty minutes each, however, further general discussions pertaining to the construction industry and this research extended each interview on average by another thirty minutes. All face to face interviews were digitally recorded and subsequently transcribed. Copious field notes were made of the solitary telephone pilot interview. This practice also extended to include the documenting of any informal discussions not digitally recorded during face to face interviews.

4.7.2 Interview Processes & Protocols

As has been discussed previously within the section 4.6 on gaining access all participants had previously received a letter detailing the reasons for this study and had indicated their agreement to take part prior to all interviews proceeding. Nevertheless, before the commencement of each interview participants were requested to sign a consent form. The form (see appendix 4) outlined the purpose of the study, explained that their participation was voluntary, and made note of my contact details for their future reference, if by chance they had questions following the interview. Whilst asking them to read and sign the consent form, I reiterated the relevance of the research and offered them the opportunity to ask any questions they may have had, and addressed any concerns. All participants were assured within both the consent form and verbally that both the identity of their organisation and themselves would remain anonymous at all times. Therefore, no documentation, with the exception of the consent form, ever included their name, and only included a ten to twelve digit alpha numeric coded identifier known only to me.

I was conscious before meeting interview participants that issues relating to power and authority with the interviewer – interviewee relationship had the potential to influence the interview and thereby data generation, thus I wished to mitigate this risk. According to Hesse-Biber (2007, p. 128) "These issues might interfere with the ability of those researched to provide a subjective account of their understanding on a specific issue, their life story, or

a specific topic". My efforts to minimise this risk commenced during my initial telephone call to participants, whereby I engaged whenever possible in small talk, alluding to my previous exposure to the construction industry. My intent at the time, being to increase the likelihood that they would agree to participate, but also to ensure they would feel comfortable when meeting with me, as they had an understanding of my professional background. In addition I dressed appropriately to mimic the anticipated dress code of participants. I would not for example wear a suit and tie if I was going to visit a small plastering company, but dressed very casually. If on the other hand I was visiting the Chief Executive of a large corporate contracting company then more suitable formal attire was chosen. When initially meeting participants I firstly thanked them for agreeing to meet with me, and whenever possible broke the ice and built early rapport through engaging them in small talk (Bogdan & Bilken, 2007). I had taken notes of all preliminary phone conversations; therefore, these discussions were often the source of the initial discourse with interviewees. In addition, whenever the need arose prior to the formal interview I would respond to their questions or comments and draw on my own industry experience to build credibility.

Further to this it became evident to me very early in the process of conducting interviews that although my own business had operated in a region of New Zealand removed from the location of most of the interviewees, that nevertheless we often shared common business acquaintances. This was largely due, no doubt, to the relatively small and interconnected nature of both New Zealand and the construction sector. Regardless, it often formed the basis of "[c]ommon groundfor a place to begin building a relationship"(Bogdan & Bilken, 2007, p. 103). This sharing of stories according to Hesse-Biber (2007, p. 128) is recognised to be an effective means of encouraging further "[r]eciprocity and rapport in the interview process", and within this study it undoubtedly helped to settle participants and created an environment conducive to the elicitation of good data.

It was my intention whenever possible to digitally record and transcribe interviews. As such all participants of face to face interviews were asked for their permission to record the interview before commencing. No participants expressed any objections and were all amenable to proceed on the basis that the interview was recorded. As this study is a grounded theory, I followed the advice of Charmaz (2006, p. 26) and developed an interview guide pre-interview that in the first instance was propagated by "[a] few broad, open-ended questions". While the interview guide assisted in facilitating the interview, for some aspects

of the study it purposely remained a very loose template. The reality of interviewing within the context of a grounded theory means that conducting interviews runs in parallel somewhat with data analysis. This of course is a consequence of the approach to analysis grounded theory is based upon, being the constant comparative method.

Simultaneous data analysis offered the advantage that interview questions could evolve from one interview to the next, which enabled me to test early conceptual development, but moreover it allowed me to seek perspectives from individuals working in contrasting sectors of the industry. Flexibility around questioning also pertained to changing questions between interviews to take into account serendipitous and unexpected discoveries. The structure of interviews, however, did alter as the study progressed, in a very similar fashion to that which Bogdan et al., (2007) allude to. They contest that early qualitative interviews may be exploratory in nature to garner a broad understanding of a phenomena, with later interviews focusing on more defined and targeted questioning for comparative purposes. This approach was particularly evident within the interview regime adopted in this study, with latter interviews offering significantly more targeted questions than earlier ones. Initial interviews centred on wide ranging issues relating to construction procurement methodologies and experiences. As the study progressed, concepts emerged and theoretical saturation approached. Questions revolved solely around informing conceptual and theoretical development. Therefore, interview guides became more structured and questions were phrased to elicit responses that did not generate superfluous data, rather, only data that aided the desired objective of saturating concepts.

Fifty interviews were conducted in total, including the six previously mentioned pilot interviews with a diverse range of industry stakeholders, as is demonstrated in the Interview Schedule in appendix 4. Face to face interviews totalled forty eight, while two were conducted by telephone. Digital recording of interviews amounted to thirty nine hours of audio in total, indicating that these interviews lasted on average some forty nine minutes each. All fifty interviews were also fully transcribed by a professional transcription company, which in total equated to 807 pages of typed transcript.

Table 1 Participant Interviews by Sector

Industry Sector	Number of Interviews	Contribution to Interview total
Main Contractors	15	30%
Consultants	2	4%
Clients	3	6%
Industry Representatives	1	2%
Sub-Contractors	22	44%
Architects	4	8%
Project Managers	1	2%
Quantity Surveyors	1	2%
Residential Builders	1	2%

Table 2 Sub Contractor Interview Participation by Trade Specialisation

Sub Trade	Number of Interviews	Contribution to total sub trade interviews
Mechanical (HVAC)	3	13.64%
Painting & Decorating	3	13.64%
Fire Protection	4	18.18%
Elevators	1	4.55%
Plastering	1	4.55%
Electrical	9	40.91%
Plumbing	1	4.55%

4.8 PROTOCOLS FOR DATA MANAGEMENT & SECURITY

Qualitative studies are renowned for producing large quantities of data that invariably requires protecting and securing for a number of years. First and foremost researchers have an obligation to protect the anonymity of research participants who could potentially be identified if implicating data and documentation is not adequately managed and secured. Researchers also, however, maintain a secondary obligation towards protecting data, because it is often the only evidential support that underscores the progression of the study and any subsequent findings. With regards to quantum this study followed many other qualitative studies, producing vast quantities of data and other documentation relevant to the study that required both managing and protecting.

I followed two approaches to protect different types of documentation and data. I drew a distinct difference around what I considered to be primary and secondary information, and

how it should be secured, as I viewed their loss or exposure as posing differing degrees of risk to participants, their organisations, the University and this study. Primary data I describe to be any data or information specific to an individual or organisation that has participated within this study. Secondary data consists of any documentation that can be either replicated or replaced, including newspaper or magazine articles and journals that have informed this inquiry, or perhaps documentation related to this study from my University.

As has been mentioned, participants were identified from the outset by discreet individual identification codes on all relevant documentation such as interview and field notes. The same identifier was also allocated to the associated audio file. This was saved in the first instance onto a password protected computer drive, and simultaneously deleted from the digital recorder. The audio file was uploaded to the owner of the transcription company, who had previously signed a confidentiality agreement and disclosure confirming that audio files would not be transcribed by any outsourced organisations. Transcribed files were returned with the same identifying reference and again saved onto a password protected computer, before they were checked for accuracy. At no time were transcripts ever converted to a printed hard copy version, as this was not required for analysis and posed another potential risk. All transcripts and audio files were backed up on to an encrypted and password protected remote computer hard drive, in addition to two remote cloud servers. Further to this, all transcripts and the majority of audio files were uploaded into the computer assisted qualitative data analysis software (CAQDAS) program NVivo, which itself was password protected and backed-up by the means already discussed. Primary data in paper format again contained only an identification code, but in the case of interview and field notes, any reference that identified any individual or organisation was obscured prior to being secured within a permanently locked and robust cabinet. All secondary information was firstly, if in digital format, retained and backed-up along the same lines as the primary information, but if not digitised then it was secured within the same cabinet as the primary information.

4.9 COMPUTER ASSISTED QUALITATIVE DATA ANALYSIS SOFTWARE

Qualitative studies, especially those relating to PhD research, traditionally face difficulties associated with collecting and analysing voluminous quantities of data, whilst contemporaneously remaining constrained to a relatively short time frame, resulting in researchers seeking greater efficiencies whenever available (Blismas & Dainty, 2003). Computer aided qualitative data analysis software (CAQDAS) is a tool available to researchers that over the last three decades has been embraced in ever increasing numbers of researchers (Crowley, Harré, & Tagg, 2002). ((the origins of CAQDAS are discussed in Hesse-Biber & Crofts, 2008; Kelle, 1995). Previously researchers would have gathered vast quantities of data that had to be organised and manipulated manually to assist analysis (Hesse-Biber & Crofts, 2008), a laborious time intensive task. In terms of how analysis of qualitative data has traditionally been approached, the evolving simplicity and versatility of software applications will no doubt, in the future, erode the numbers of those researchers who remain loyal to manual data analysis methods. Many have yet realise the opportunities that CAQDAS presents and do not recognise that its use is now generally ubiquitous (Fielding, 2008). In the words of Davidson and di Gregorio (2010, p. 627), “Truly, qualitative research and technology is in the midst of a revolution”. The popularity of CAQDAS is driven in part by the efficiencies that the program presents to a study (Seale, 2003). The process of coding for example is simplified, with relevant heterogeneous data sources readily managed (Dainty, Bagilhole, & Neale, 2000). It is also said by Kelle, Sibert, Shelly, Hesse-Biber, and Huber (1995, p. 105) to aid qualitative researchers render insights and discovery while promoting conceptual development. They go on to say:-

Software for the computer-aided analysis of textual data can assist this process of discovery in several ways. With its help the researcher can easily retrieve text passages relating to a certain topic within a document or across documents and identify their similarities and differences. In doing so one can, for example, contrast the utterances of different types of respondents on the same issues. Or one can compare text segments attached to different code-categories to investigate their possible relations.

Greater insight and theoretical development may come as a result of the amount of data generated. Dainty et al., (2000, p. 229) imply that CAQDAS improves qualitative studies as its availability encourages researchers to gather more data than they otherwise would. This they contend brings “[t]he researcher closer to simultaneously studying phenomena both extensively and intensively” A point that may be relevant within some qualitative studies, but not a grounded theory, whereby any data generated past the point of theoretical saturation makes no contribution towards theoretical development, and as such is inconsequential. Notwithstanding this, and the many advantages the use of CAQDAS achieves for some, such as Seale (2003), the greatest benefit it offers the research community is the promotion of investigative rigor.

My decision to use CAQDAS follows many of the arguments already made supporting its use, by not only grounded theorists but also by protagonists of other methodological approaches to qualitative studies. Previous experience of manually coding and analysing small numbers of relatively short transcripts was suffice to demonstrate to me how time intensive the procedure can be. Whilst CAQDAS itself does not analyse the data for the researcher (Leech & Onwuegbuzie, 2011), nor reduce reading time (Bringer, Johnston, & Brackenridge, 2004), it nonetheless offers many features that aid in simplifying the process of data analysis and theoretical development. Moreover Kuş Saillard (2011) attests that CAQDAS applications have made an undeniable contribution to the methodological integrity of grounded theory as they enable researchers to maintain a close proximity to their original data, even when working at a higher abstract or conceptual level. Mindful of these and other factors, and being someone who considers themselves to be computer and technology literate, familiar with the experience and tedium of manual coding techniques I viewed CAQDAS as a valuable instrument that could only aid this study on multiple fronts.

4.10 CAQDAS SELECTION

The willingness of researchers to adopt CAQDAS applications in preference to historical manual methods of data manipulation and analysis has produced a market for software that has been addressed by a range of programs. Although differences exist between applications, the central processes they subscribe to remain somewhat homogenous (Lewins & Silver, 2009). In general all CAQDAS applications, according to Lewins et al., (2009) encompass similar attributes, relating to, amongst other things the structure of work, closeness to data, data exploration, project management and data interrogation.

It behoves researchers therefore to consider and select the most suitable application for their study. In this instance I chose to use NVivo, manufactured by QSR International Pty Ltd. The antecedents of NVivo can be traced back to one of the original qualitative research programs NUD*IST, an acronym for Numerical Unstructured Data Indexing Searching and Theorising, that was founded by Tom and Lyn Richards in 1981 (QSR-International-Pty-Ltd, 2012). Today NVivo is considered by many to be one the most well regarded and commonly used CAQDAS applications (Hoover & Koerber, 2011; Lewins & Silver, 2009) and because of this technical support and training, if required, is readily available to researchers from numerous sources.

I opted to use NVivo in the first instance out of pragmatism. I had received limited exposure to the program previously, with some very minimal training. But knew of others within my University that had recently completed their PhDs using NVivo, and whom were competent and conversant with its use and functionality, and that I could call upon for assistance if required. Also, from a purely financial perspective it was available at no direct cost to me as the University held a site wide licence. Aside from pragmatic reasons NVivo offered a broad range of functional tools to aid analysis. Bazeley (2007) reiterates that NVivo is merely a tool, and that in no way can it overcome nor compensate for a researcher's inability to interpret data. Nevertheless, she suggests that NVivo supports analysis in several ways, by managing data and ideas, querying data, diagramming/modelling, and reporting data. From a purely practical perspective NVivo's data management capabilities appealed to me. Primarily this was because it allowed me to upload not only interview transcripts into the program, but also the associated audio files and any relevant literature. This feature simplified security and storage of data, but also reduced paper consumption, and released

me from the restriction of working from one location, allowing analysis, if required, to continue wherever I may be.

4.11 NVIVO WITHIN A GROUNDED THEORY

There is no doubt that many CAQDAS applications have developed and grown in popularity, whilst at the same time the number of studies implementing grounded theory methodological approaches have also increased. This really should come as no surprise as acceptance and awareness of both amongst academia have been on the rise for some time. Nevertheless grounded theory has indisputably played a tremendous part in defining the structure of numerous CAQDAS applications (Lonkila, 1995), including that of NVivo.

The effectiveness of CAQDAS, specifically NVivo when used within a grounded theory study is discussed in Bringer, Johnston & Brackenridge (2006) and Hutchison, Johnston & Breckon (2010). Both of these studies adopted constructivist epistemological positions akin to this inquiry, used a broad range of the functions available within NVivo, and discuss the many benefits that the authors perceived that NVivo presented to their studies. The benefits of any CAQDAS application however can only be considered with an appropriate caveat. Like any software application, even the ubiquitous Microsoft Word, its true value is only appreciated and witnessed when used by a competent practitioner. In the hands of an inexperienced or poorly supervised researcher unfamiliar with CAQDAS even the least experienced will no doubt extract some functionality from the software. However, for CAQDAS, and in particular NVivo to be of real functional and practical benefit to a study the researcher has to firstly be familiar and competent in its use, investing sufficient time into developing the requisite experience necessary.

To augment the process of learning the technical and functional aspects of NVivo, I followed the lead of Bringer et al., (2006) and suggestion of Johnston (2006), and used the tool to effectively manage multiple facets of the doctoral process. I concur with Lynne Johnston (2006, p. 383) and her argument that, "If a student can see multiple uses in the program, they are arguably more likely to invest the necessary time required to learn its functionality". In this regards NVivo aligns itself very much with the processes inherent within a grounded theory study and readily facilitates the management and manipulation of data. As such NVivo became a very valuable tool within this research, its use commencing at the inception of this study and progressing until the resultant write up of this thesis. The

multiple advantages that using NVivo presented to me far outweighed the time invested to become both conversant and competent with its use.

4.11.1 Electronic Journal & Memos

It is customary for researchers, especially those working within a qualitative study to maintain a research journal, which largely documents the progression of a study from its early beginnings until completion (Bazeley, 2007). In meeting this end NVivo offers researchers the ability to create an electronic journal ensconced within the NVivo application itself. Effectively an electronic journal acts as a private forum for the researcher's thoughts, reflections and ideas as they come to mind. It both compliments the other analytical tools within NVivo that serve to shape the progress of discovery and analysis and simultaneously captures a traceable and transparent audit trail of events (Bringer, et al., 2004; Kikooma, 2010). This is only one of numerous practical benefits that NVivo offers to a study. None of which are any more important perhaps than the ease and simplicity it extends to researchers to record nascent theoretical ideas and development within a central, yet interconnected hub (Johnston, 2006). Moreover, NVivo allows journal entries to be coded in the same way that any other data is similarly coded, and linked or transposed and copied to associated transcripts and memos if required. Thus capturing evolving thoughts in an electronic format presents significantly more versatility and flexibility than would otherwise be available to a researcher using more traditional methods.

Memos are a fundamental tenant of grounded theory development (Bringer, et al., 2006). Therefore their creation, development and refinement were a constant and evolutionary process within this study. Because the versions 7, 8 and 9 of NVivo that were used to facilitate this research had some formatting limitations, all memos were in the first instance written with the aid of a word processing program and subsequently copied and pasted into a new memo within NVivo. Notwithstanding this small inconvenience NVivo allowed memos to be structured and sorted in a logical format that was easily changeable, each memo was given a suitable name, and explanatory description if required. Furthermore, NVivo offered the facility to ascribe relevant attributes to memos if and when necessary.

4.11.2 Data Sources Coding Attributes & Queries

All interview transcripts, audio files and associated data such as email correspondence from research participants was imported into the NVivo program. Transcripts and related audio files maintained the same cryptic codes ascribed to them at the time of the original interview to maintain participant anonymity. Nevertheless, they were collated within defined groups and sub-groups within a hierarchical structure to simplify later identification and location. Moreover, during the process of importing transcribed data, each file was assigned certain demographic information by way of NVivo's 'Attribute Values' function (for further discussion see Bazeley, 2007). Simply stated 'attributes' are recordings of data related to a participant or organisation that exist outside of the data generated by the inquiry (Bazeley, 2007).

Several attributes were configured within NVivo that were applied to specific interview transcripts, or 'cases' as they are referred to within NVivo. Attributes enabled me to define participant characteristics such as the industry sector an informing construction Client belonged to, or the maximum value of projects that Contractors worked on. Furthermore, the 'attribute' feature allowed me, amongst other things, to differentiate between Sub-Contractor trades and define supply chain relationships. The main benefit of applying attributes to individual interviews is that it enables exploration and comparison. For example I may have wished to search and identify responses pertaining to a particular subject from Sub-Contractors as a group, followed by perhaps, just a segment of that group namely painters. Ascribing both the attributes of Sub-Contractors and painters to an individual case allowed me to search and compare individual responses within distinct sectors of the industry. This feature of NVivo results in enormous time savings over manual methods, but also creates opportunities for greater demographic scrutiny that assists early interpretations of inter-related categories (Bringer, et al., 2006).

Coding in NVivo is both facilitated and structured through the use of 'nodes' (Bergin, 2011). Nodes, or 'electronic bins' (Hoover & Koerber, 2011), according to Edlund (2011, p. 115) "[c]an mean concepts, processes, thoughts, ideas, products, geographical places and even people", that are subscribed to in the form of coded electronic data. NVivo supports four types of nodes that aid analysis, and that were used widely within this study (Bergin, 2011; Richards, 1999), and which help to "...[c]ode complex data for multiple meanings ..." (Richards, 1999, p. 420). Tree nodes are organised in a hierarchical structure consisting of

'Parent' and 'Child nodes', with Parent nodes occupying a higher relative position, and arguably they "[c]reate order out of randomness or chaos" (Bazeley, 2007, p. 103). Conversely free nodes remain independent, and bear no association with any other category. Case nodes are associated with 'attributes' and the ascription of demographic information, as was previously discussed and 'relationship' nodes offer a means to record customisable relationships between nodes and sources, that in itself can subsequently be coded to (Hoover & Koerber, 2011).

During the process of analysis within this study many hundreds of nodes were created, initially in the form of free nodes. Aided by continuing comparative analysis, relevant free nodes, overtime evolved into tree nodes as relationships and associations became evident. In this respect the flexibility of NVivo complemented analysis by allowing structural elements of relationships to be easily reformatted and labelled. Strong conceptual categories were evidenced by the code frequency logs attributed to the individual nodes. The conceptual relevance of codes was underpinned by the number and type of associated relationships to other categories. Over fifty relevant relationships were identified and defined with individual bespoke characteristics. Some relationships between categories were documented as purely associations between categories, while other categories may have had positive or negative correlations with others. For example the coded category 'regulations' was positively related to 'quality', whereas the category 'learning' was negatively related to 'costs reduced'. An instance within the data that demonstrated or otherwise supported relationships such as these exemplars was coded against them, and became part of the on-going and subsequent analysis.

The structuring and simplicity of creating new nodes within NVivo without doubt assisted in contrasting and comparing categories and incidents, especially in the early stages of analysis. The true strength of NVivo however, and what predominantly distinguishes it from traditional manual methods of analysis is the 'queries' function (Hoover & Koerber, 2011). Queries facilitate data interrogation, by enabling all, or just specific facets of data to be searched that match the inquirer defined search string. This feature according to Hoover et al., (2011, p. 73) drastically reduces the ennui of conventional methods, improves analytical efficacy, whilst allowing "[t]he researcher to examine numerous dynamics of a project with little effort".

The query function as used within this study was a potent iterative tool used throughout the research process that readily reduced numerous complex searches into simple tasks. The ability to search for specific or even similar text within selected content was extremely useful, and often used. However, this is only one of many features ensconced under the umbrella of the query function. Combined, they serve as a powerful and effective means to quickly highlight and compare consistent or contrasting thoughts, ideas and emerging concepts within and across intra and inter related groups and individuals. While NVivo can easily search data and generate associated matrices and reports, its utility nevertheless must be considered under caution, as Bazeley (2007, p. 180) warns:-

NVivo's contribution is to select and sort data for you, often with a degree of complexity which would simply not be possible working manually.As with any analysis (quantitative or qualitative), your results will only be as good as is allowed by the combination of your skill in asking the questions, your coding, and your capacity to interpret what is found.

4.11.3 Sets and Models

Progression from nascent analysis in the form of open coding, through selective or focussed coding was facilitated in many ways by NVivo. Preliminary analysis primarily involved the creation and evolution of codes or nodes and query searches. Analysis during later stages of the study, however, centred on what Hoover at al., (2011, p. 73) allude to as “[t]he big picture” whereby “[s]pecific analysis is combined to present a larger interpretation”. This was largely addressed by using two features of NVivo, ‘sets’ and ‘models’.

Sets are a means of grouping items together that have some common association or relationship, without necessitating the removal of the source node from its original location. And essentially serve the same purpose as Glaser's (1978) coding families. Multiple sets were configured within NVivo to aid my understanding of relationships. One set was labelled as ‘Trust’ and included copies of all nodes that in any way could be construed as being relevant to the concept of trust. As such this set incorporated nodes labelled ‘Opportunism’, ‘Communication’ and ‘Competitors’. Another set was called ‘Client motivations’ and included within it nodes such as ‘Budget’, ‘Cost focus’ and ‘Risk mitigation’. While individual nodes within a defined set may not necessarily have any immediately

obvious connection or relationship, by grouping items together, higher level concepts are seen to begin to emerge.

Miles et al., (1994, p. 11) contend that a large portion of qualitative data analysis consists of data display. They argue that displays let the researcher “[s]ee what is happening”, and furthermore that “[t]he creation and use of displays is not separate from analysis, it is a *part* of analysis”. Displays can take many forms, many of which are available within NVivo, such as charts, graphs and matrices. While this study did use some of these features within analysis, especially the matrices function, it was the ability to model that was most beneficial. Modelling according to Richards (2009, p. 83) “... [i]s a way of telling your ideas, and like any telling, it clarifies. It also allows you to display and reflect on different ways of seeing the data”. Models therefore can be used in many different ways throughout a study, all however are primarily designed to aid analysis through the immediate visual representation of data (Bazeley, 2007; Miles & Huberman, 1994). When working within the environment of a CAQDAS application Richards (2009, p. 83) suggests that modelling offers qualitative enquiries additional support:-

- Items that you place in a model are ‘live’ to the data – click on the document in the model and it will open on the screen.
- Relationships that you draw in the model can indicate your confidence in them, the evidence you have for this relationship and most importantly the nature of the relationship.
- Layers can be used to show different aspects of your picture of the data, and help you make new discoveries.

I used a broad range of models within this study during analysis, from a simplistic static representation of the relationships between stakeholders within a traditional construction procurement framework, to very complex models that represented stakeholder pricing strategies and the subsequent ethical implications. All models without exception helped move my thinking forward. Some for instance immediately highlighted an inconsistency in my rational and was suffice justification for abandoning what I had considered until that point a strong construct. Others identified gaps in my thought processes, and were reason to seek more data. And some presented ‘Eureka’(Glaser, 1978, p. 24) moments that would never have been discovered without first modelling. Modelling relationships is a reflective process that regardless of how it may be undertaken promotes conceptual abstraction. The

process of modelling within NVivo, however, ensured that I remained in close proximity to the data at all times. As Richards (2009) correctly says, the model is 'live', as such supporting evidence and data is only ever one click away.

4.11.4 Thoughts on the use of NVivo within a Grounded Theory

There is no doubt that this study could have been undertaken without the assistance of CAQDAS, and NVivo specifically. Similarly however, I have little doubt that my decision to use NVivo has made a positive contribution to the final outcome of this study. Yes, it does take some time to learn your way around the program, but this was not something that I perceived to be an obstacle that could not be overcome. And for me the process of relearning some aspects of the program was ongoing as several iterations of NVivo, with varying degrees of difference were used during the length of this inquiry. Yet even though I would now consider myself to be competent in its use, I am also sure that there are many features available within the application that I remain unaware of.

I would largely concur with Hoover et al.,(2011, p. 73) who suggest that the benefits of NVivo are prevaillingly structured around efficiency, multiplicity and transparency. Manual methods of data manipulation may be sufficient for smaller studies, or those that are not limited by time. This study however did not meet either of these criteria; moreover I would go so far as to concede that without the aid of NVivo during analysis that this study would have struggled to meet the time constraints imposed by the PhD process. NVivo drastically reduced the time required to code transcripts of interviews, albeit it does not forego or minimise the time required to read and comprehend what the transcripts are saying. It does nevertheless simplify the ongoing task of coding, comparing and contrasting itself, and maintains ever increasing numbers of codes in a logical, readily recoverable and retrievable format. A criticism of all CAQDAS applications in this regards is that the ease and simplicity of coding can lead to coding trivia and at times inconsequential data, which only serves to waste time. During early analysis I succumbed to this danger which transpired in the generation of many irrelevant nodes. It could perhaps also be argued that although traditional coding techniques were somewhat laborious and time consuming, they naturally coerced researchers into giving greater consideration to their emerging concepts. Conversely the counter argument could also be posited that researchers, who have spent long periods manually interrogating data, may become intransigent and reticent to relinquish what may be considered by some as being less than robust emergent concepts.

Although coding large amounts of data within NVivo saves a lot of time, on its own this ultimately makes minimal difference to the analytical process. NVivo's greatest contribution to this study came as a result of the integration of its numerous functions and processes. I relied heavily upon the tool during this research. It formed the basis for recording journal entries and all of my memos, all of which could be subsequently linked to relevant nodes, to identify defined relationships. The program was also used to store important literature, all of the interview transcripts and audio recordings. Although uploading this data did take some time, it meant that any data associated with this study was at all times available to me and stored securely.

NVivo also provides an audit trail that helps address concerns surrounding credibility, as logs help demonstrate the interpretive process. Moreover, coded data attached to nodes is readily and easily retrievable to support conceptual thinking and evolution. Although the same is undoubtedly possible within a manual schema it is by no means as convenient.

Grounded theory is an oscillatory, iterative and somewhat heuristic analytical process that can generate enormous quantities of data, and which has the capacity to consume inexperienced researchers. Few people would have the cognitive capacity, to remember, never mind compare and evaluate the content and context of hundreds of pages of transcripts and other data. As such manual analysis techniques can potentially overlook related detail. Using NVivo helps facilitate the constant comparative method that underpins grounded theory and ensures that all relevant data pertaining to instances and occurrences of phenomena, both within and across many contexts are captured and easily compared. Furthermore, it proved to be a propitious instrument that aided the transition of analysis from the minutia of descriptive transcript codes, to the formulation of rich concepts that steadily moved the study towards emergent theory.

4.12 STRATEGIES FOR RIGOUR & EVALUATION

While it is generally agreed that for qualitative research to be of any value, the research methods employed should be rigorous, a degree of contention remains as to what it is that constitutes rigour within the framework of a qualitative study (Caelli, et al., 2008). Indeed without rigour Morse, Barrett, Mayan, Olsen & Spiers (2008, p. 14) contend that "[r]esearch is worthless, becomes fiction, and loses its utility". Historically discussions have been drawn from the tenants of scientific or quantitative approaches and have largely focussed upon

concepts of reliability and validity (Beck, 1993; Golafshani, 2003; Hammersley, 1991; Seale, 1999; Whitemore, Chase, & Mandle, 2001). Although many would contest this position, and argue that positivist objectivity has no place within an interpretivist inquiry (Polit & Beck, 2010). Winter (2000) suggests that there is no clear consensus and single definition that explains the concept of validity. But he nevertheless accedes that commonalities exist between individual definitions that question if the method of measurement is accurate, and whether it measures the desired objective. Winter (2000) goes on to discuss the apparent confusion and ambiguity that exists amongst authors pertaining to common attributes of reliability and validity, such as accuracy. He nevertheless summarises by equating validity with accuracy and reliability with replicability. Qualitative researchers, who often use the same quantitative terminology (Morse et al., 2010), however, do not view reliability and validity in the same way, and as such would not subscribe to the same definitions as used within a quantitative study (Golafshani, 2003). According to Morse et al., (2010, p. 1302) validity within qualitative studies centres on internal and external verification, logic and replicability, whilst reliability is associated with member checking and interrater techniques.

Some argue that the use of quantitative concepts within interpretivist qualitative studies is ill considered. Stenbacka (2001) suggests that quantitative and qualitative studies have incongruent objectives, with the former seeking explanation of phenomena and the latter, understanding. She does however contend that while quantitative measures of validity may not be appropriate in qualitative studies, the qualitative equivalent is achievable by implementing unrestricted interview techniques and capturing research participants' understanding of the research phenomena. The same cannot be said however of the concept of reliability which she attests has no place in an interpretative study, further she suggests that any qualitative study that discusses reliability in terms of quality "is no good" (Stenbacka, 2001, p. 552).

A concern exists amongst some authors over the perceived lack of a consistent means of evaluating qualitative research and the degree of supporting evidence required to demonstrate that the necessary threshold of academic rigour has been achieved (Hammersley, 1991). Hammersley suggests that to evaluate the outcome of interpretivist social research we must firstly consider the purpose of the research and its intended objective. With the view that "[t]he function of research is to provide information that is both true and relevant to some legitimate concern" (1991, p. 68), Hammersley argues that

research should be evaluated on the basis of its validity (or truth) and relevance and asserts that research is truthful or valid if it presents an accurate representation of the phenomena that the research originally set out to describe or explain. In this regard he argues that researchers need to take account of such things as the plausibility and credibility of the study, the amount and kind of evidential support, and the type of claims being made. To ensure that findings are relevant Hammersley (1991, p. 72) proposes that a researcher must consider “[t]o what and for whom”, is the study relevant, specifically who is the target audience. Is for example the research aimed primarily at a narrow and substantive audience or a broader general field, at proponents of all research paradigms and methodologies or only towards adherents of particular defined approaches? Aligned with and supporting decisions pertaining to the relevance of research Hammersley (1991) declares, are the associated considerations of the importance of the research subject and the contribution that its findings make to the academic literature.

Largely to address inferences from the traditional quantitative research community that qualitative research was somehow less robust and rigorous, Lincoln & Guba (1985) endeavoured to introduce criteria to overcome concerns with regards to the trustworthiness of interpretive inquiries. They contend that historically inquirers have asked four questions of themselves and their research appertaining to truth, applicability, consistency and neutrality:-

1. Truth: How can respondents, be assured of, and have confidence in the study’s findings?
2. Applicability: How generalisable are the findings with other contexts?
3. Consistency: Would the findings be replicable if repeated within a scenario resembling the original study?
4. Neutrality: How can one demonstrate that the findings are not reflective of bias, rather of the respondents themselves and the associated context?

Lincoln & Guba (1985) however deem the criteria by which traditional quantitative research evaluates these questions as being inappropriate measures to judge the integrity and findings of an interpretive inquiry. In this they are not unlike others who work within qualitative studies who would rather refrain from the use of problematic quantitative terminology (Janesick, 2003) that fails to capture the realities of qualitative inquiries. Lincoln & Guba (1985) therefore posited that the traditional respective measures of internal

validity, external validity, reliability and objectivity (Denzin & Lincoln, 1994), should be substituted by more suitable and appropriate terms to facilitate interpretive studies, namely credibility, transferability, dependability and confirmability. Sometime later another criteria 'authenticity' was also added to this list (Morse, et al., 2008). In the main these concepts, which are considered to be by some to be the 'gold standard' (Whittemore, et al., 2001, p. 527) of evaluation criteria, focus upon such things as prolonged engagement in the field, triangulation, member checking, thick description, audit trails and journaling. And while construed by many to be more appropriate terminology, there remains a contingent within the research community that view the introduction of heterogeneous language to replace established terms with some concern (Chiovitti & Piran, 2003). Moreover, Morse et al.,(2008) highlight the point that overtime criteria such as reliability and validity have been substituted by evaluative criteria that focus upon post hoc, completed research. They suggest that this obnubilates the distinction between the validity and integrity of the research process itself, and other procedures that serve to validate the research findings.

Thus far this discussion has centred on criteria underscoring rigour across the homogeneity of qualitative studies, without addressing any particular methodologies or paradigms. It is true however that the lack of consensus regarding evaluative criteria within the general field of qualitative research continues to extend into the specific method of grounded theory. Within the original text of 'Discovery' (Glaser & Strauss, 1967) and the subsequent 'Theoretical Sensitivity' (Glaser, 1978, pp. 4-5) four evaluative criteria were discussed, fit, work, relevance and modifiability.

1. Fit: Relates to how well concepts and the generated theory represent the phenomena they were interpreted from.
2. Work: Refers to the explanatory and predictive capacity of the theory within its substantive context. Does it explain what has happened, foretell what will happen, or interpret what is going on?
3. Relevance: Means that the theory is applicable and appropriate to those with interests in the phenomena, and to whom the value of the research requires no explanation.
4. Modifiability: The theory should be sufficiently flexible to enable evolutionary changes and developments as future theoretical insights emerge.

The problem of capturing and defining rigorous qualitative research is exemplified by Corbin & Strauss (2008, p. 297) in the statement: "Quality in quantitative research is something that we recognize when we see it; however, explaining what it is or how to achieve it is much more difficult". Corbin herself does not associate validity in any way with quality, as in her mind validity can never address important aspects of quality such as creativity and innovation. Further, she rejects the terms reliability and validity because of quantitative associations, and 'truth' because of the tendency to define it in prejudicial terms. Corbin and Strauss (2008, p. 302) prefer to judge the quality and rigour of qualitative research on its 'credibility', they contend:-

To me, the term "credibility" indicates that findings are trustworthy and believable in that they reflect participants', researchers', and readers' experiences with a phenomenon but at the same time the explanation is only one of many possible "plausible" interpretations possible from data.

Healy & Perry (2000) suggest that epistemological, ontological and methodological beliefs and processes force researchers to consider the part they play in evaluating research; it is their contention that different paradigms necessitate the need to measure the quality of research with anomalous criteria. As such positivists and post positivist research would judge rigour by the traditional means of internal and external validity, reliability and objectivity; Critical theorist studies evaluate quality by its historical situatedness, erosion of ignorance and misapprehensions; While constructivist studies centre evaluation around trustworthiness and authenticity (Lincoln, et al., 2011).

Kathy Charmaz (Charmaz, 2006), a proponent of the constructivist grounded theory approach suggests that ultimately the effectiveness of the methods used to facilitate rigour, will be borne out in the quality of research findings, as judged by the intended audience. She does however suggest four evaluative criteria that may be useful, Credibility, Originality, Resonance and Usefulness.

1. Credibility – Characterised by the researchers' sensitivity to the research context, and the generation of data suffice to support findings. Logical links are drawn between data, concepts, categories and theoretical development and research findings are presented with sufficient detail to enable independent verification of them.

2. Originality – Demonstrated by the development of new and creative conceptual categories, with theoretical significance, that question, broaden and elaborate upon current theories.
3. Resonance – Reflected by theory that represents the studied phenomena, that reveals both inferred and tacit meanings, and remains readily understood by those from within the research context.
4. Usefulness – Portrayed by analysis that provides relevant, workable interpretations with real world applicability that makes a substantive original contribution to knowledge and ignites additional related studies.

It is evident from the previous discussion that no clear consensus exists with regards to what constitutes an agreed threshold of applied rigour within a qualitative study, nevertheless a grounded theory. Regardless, it remains unlikely that any commonly accepted criteria could ever offer unconditional categorical assurance of research accuracy (Henwood & Pidgeon, 1992). Notwithstanding this I concur to some extent with Birks et al., (2011, p. 150) and their premise that “[t]he practical applicability of grounded theory research is the ultimate measure of its value” and further:

...[t]heory should demonstrate *fit* with the field of its intended use, should be *understandable* by those who work in the area, be *general* enough that it can be flexible in application while allowing the user *control* over its use.

Like Morse et al.,(2008) I do not agree that evaluation criteria should only be applied post hoc to theoretical findings. A theory that ‘fits’, and that is credible, understandable, trustworthy and applicable does not in itself demonstrate rigour, moreover it is a consequence of rigorous systems integral to the research process. When working within a grounded theory these characteristics are encouraged by the theoretical sensitivity of the inquirer and the procedural steps inherent in the process, such as memoing, theoretical sampling and the constant comparative method, as Morse et al (2008, p. 17) posit:-

...[q]ualitative research is iterative rather than linear, so that a good qualitative researcher moves back and forth between design and implementation to ensure congruence among question formulation, literature recruitment, data collection strategies, and analysis. Data are systematically checked, focus is maintained, and

the fit of data and the conceptual work of analysis and interpretation are monitored and confirmed constantly.

Adherence therefore to the fundamental principles of the grounded theory process supports both the rigour of the analytical process and any subsequent research findings.

4.13 MAINTAINING ETHICAL INTEGRITY

The importance of rigour within any type of research cannot be overstated, but to researchers other aspects of a study are often equally, if not more important, and require the requisite degree of consideration. Miles et al.,(1994, p. 288) highlight one such obligation as follows:-

We cannot focus only on the quality of the knowledge we are producing, as if its truth were all that counts. We must also consider the rightness or wrongness of our actions as qualitative researchers in relation to the people whose lives we are studying, to our colleagues, and to those who sponsor our work.

In other words researchers owe a responsibility to not only the intended audience of the research findings, but to all those who are party to the research process. Arguably therefore, it is likely that instances will arise during stages of inquiries that will alert the consciousness of those undertaking the study to one or more moral dilemmas. This is especially true when working within qualitative studies, that often come up against slightly different ethical tussles than those ordinarily encountered within solely quantitative studies (Orb, Eisenhauer, & Wynaden, 2004). Examples of which may include things such as issues of participant reactivity (Aaron, Turner, Mancl, Brister, & Sawchuk, 2005), and securing access to informants for the reason of discussing topics of a socially sensitive nature (Gummesson, 1991; Orb, et al., 2004; Sieber & Stanley, 1988). It invariably follows therefore that the foremost and fundamental questions that arise at such times, and which characterise any ethical introspection are “What should I do?” and “How do I know what is right?”(Thompson, 2010, p. 1).

The notion of ethics, doing good over harm (Orb, et al., 2004), could be considered to be transient, with cultural implications. According to Bogdan et al., (2007, p. 48) “...[e]thics in research are the principles of right and wrong that a particular group accepts at a particular time”. The reality however is that more often than not, ethical decisions are taken

unilaterally as situations during an inquiry can often develop unexpectedly, negating any opportunity to seek external consultation, and as such ethical decisions are largely dependent upon the personal integrity of the researcher themselves. The ethical integrity of the researcher has to account for a multitude of possible moral scenarios. How for example are confidentiality, anonymity and privacy accounted for? Are participants being exploited in any way? Does the research impact negatively upon participants or their organisations? (Miles & Huberman, 1994).

To guide the decision making process pertaining to the ethical quandaries that emerged during this investigation a teleological utilitarian (May, 1980) approach was adopted. Developed by Jeremy Bentham (1748 -1832), utilitarianism is the ethical theory most often used to facilitate 'common sense' decision making (Thompson, 2010, p. 76). Utilitarians evaluate moral decisions with regards to their consequences and implications for the relevant audiences (Miles & Huberman, 1994). In its most basic sense, utilitarian theory addresses moral conundrums by accepting that "[t]he right thing to do is that which is likely to produce the greatest happiness for the greatest number of people" (Thompson, 2010, p. 77). As opposed to for example a deontological ethical approach such as the prescribed categorical imperatives of Immanuel Kant (1724 – 1804) (Bowie & Bowie, 1999). Kant (as discussed in Bowie & Bowie, 1999, p. 1) argues "[t]hat a genuine moral act must be done out of duty and not merely conformity with duty" and is an approach said to be at odds with qualitative studies requiring field research as it is governed by rules and duties that are prohibitively restrictive and too individualistic to accommodate possible occurrences of exceptional or extraordinary situations (May, 1980).

This study was reliant upon participant interviews for the generation of data, an act which for participants is not without risk, and obligated mitigation with ethical anticipatory measures. As Patton (2002, p. 407) rightly points out:-

Because qualitative methods are highly personal and interpersonal, because naturalistic inquiry takes the researcher into the real world where people live and work, and because in-depth interviewing opens up what is inside people – qualitative inquiry may be more intrusive and involve greater reactivity than surveys, tests, and other quantitative approaches.

For such reasons it is now commonplace for Universities to require proposed research to be approved by ethical review boards. In the case of this study ethical approval for this research was sought from the Human Ethics Committee of the University of Canterbury and after addressing some initial concerns was subsequently granted. The ethical guidelines of the university incorporate four commonly accepted principles (as widely discussed in Fontana & Frey, 1994; Marshall & Rossman, 2010; Patton, 2002; Polit & Beck, 2010; Rubin & Rubin, 2011; Silverman, 2009), of informed consent, confidentiality, Lack of deception and the mitigation of risk.

4.13.1 Informed Consent

The onus rests with the researcher to ensure that participants are “[c]arefully and truthfully informed about the research” (Patton, 2002, p. 372), and voluntarily agree to take part in the study without coercion or pressure (Rubin & Rubin, 2011). In addition they must be informed of their rights to decline or withdraw from the research process at any time.

Requesting participant consent, and communicating the reasons for, and nature of the research within this study occurred on three occasions. In the first instance an introductory letter was mailed to participants explaining the reasons for the study and requesting their consent to be interviewed. This was subsequently followed up by a telephone call to the potential interviewee. This availed them of the opportunity to ask any questions with regards to the study, and for me to address any concerns they may have held at the time. When first meeting with participants I once again verbally explained the reasons for the research and confirmed their willingness to partake in an interview. This gave participants another opportunity to ask any questions, which were subsequently answered. At this time I requested that they signed a consent form (see appendix 4), which once more outlined the study and their rights to withdraw from participation at any time. All participants who agreed to be interviewed at the telephone call stage, subsequently completed interviews and at no time did any individual request to withdraw from the study.

4.13.2 Confidentiality, Privacy & Anonymity

It is not unreasonable for participants to expect that their privacy will be respected, anonymity assured and confidences maintained before, during and following interviews (Orb, et al., 2004). Miles et al., (1994, p. 293) concur and suggest that researchers should be asking the questions “In what ways will the study intrude, come closer to the people than they want? How will information be guarded? How identifiable are the individuals and organizations studied?” For some, questions such as these present problems when determining what may be the sometimes ambiguous distinctions between the terms ‘Confidentiality’ and ‘Anonymity’. To clarify, confidentiality protects individuals’ privacy by managing and reporting information in such ways that it is not attributed to interviewees. Anonymity however refers to the association of identifying records with data that would facilitate retracing the ascription of data back to its source (Mertens, 2010b; Polit & Beck, 2010). Conversely ‘privacy’ “[r]efers to a person’s interest in controlling the boundaries between self and others” (Sieber & Stanley, 1988, p. 53).

Every endeavour was made during this study to meet my personal obligations as the researcher and to protect the rights of participants. I have previously discussed (see section 4.7.2) the protocols and procedures adopted to manage and protect both the identification of participants and the associated data. At no time in this study have the identities of participants been revealed without firstly obtaining their express permission, and even then, identities have not been documented. I raise this point because ensuring participant anonymity contradicts the snowball sampling method adopted to identify suitable interviewee candidates, and presents a dilemma. Snowball Sampling necessitates one interviewee suggesting other suitable potential interviewees. Obviously therefore the nominator can surmise that there is a high likelihood that they will know other research participants. Similarly the nominee can be assured that at least one person is aware that they may be participating. In many situations this scenario would not be seen to be problematic, but in some organisational and personal relationships it may well be. Regardless, the privacy of interviewees is not assured, and the potential for causing harm exists. Deferring to the utilitarian position of “[t]he right thing to do is that which is likely to produce the greatest happiness for the greatest number of people” (Thompson, 2010, p. 77), I requested permission from all nominating individuals that I be able to use their name in introductory discussions with nominees. Generally most participants agreed to this request, which relieved me of the some of the obligation I owed nominating participants. If

nominators were not willing for me to reveal their identification to nominee participants, then I abided by their wishes, and if asked by nominees would only confirm that someone within the wider industry had suggested their name to me. Unfortunately when Snowball Sampling it is not possible to respect the privacy of all participants, as nominated individuals will always be known to the nominators, yet the nominating individuals will not always be known to the nominee participants. During the interviewee recruitment process even though several individuals did not know who had referred their name as a potential interviewee, and were undoubtedly curious, it was never discussed as being a reason to decline acceptance of my interview request.

4.13.3 Lack of Deception

The ethics of deception in research is a topic that has been discussed for many years (Mertens, 2010b) and there is no escaping the fact that in some situations that deceptive practice where appropriate are the only means of collating relevant data. Albeit the deception must be revealed and participants debriefed after the study (Mertens, 2010b; Polit & Beck, 2010).

At the commencement of this study there was never any conscious intention to deceive any research participants. Nevertheless it did emerge during early interviews as a problem that required consideration, because of the potential harm it presented to participant organisations and the generation of relevant data. As previously discussed in Chapter 2 my professional background and experience comes from self-employment in the construction industry, and more specifically sub-contracting within the area of electrical and fire alarm installations. After working for many years within the industry I am familiar with cultural terminology, and have a wide range of industry associates and acquaintances. Aside from the initial pilot interviewees and one other participant who I had previous telephone contact with many years prior to this study, all other participants were unknown to me. As such, in the first instance when making formal contact with possible participants, I was viewed as an academic. In some situations when attempting to gain access, to overcome objections I alluded to my background and experience. There were times, however, within several of the early interviews whereby I refrained from mentioning my ties to the industry prior to commencing an interview, unless I was specifically asked, although I always discussed this with participants at the conclusion of the interview. While purposely lying to participants can easily be construed as deception, so too can staying silent (Burgess, 1984),

and this decision required reflection. This was an oversight on my part, that had never been initially considered, but that nevertheless had implications.

In retrospect it is now apparent that in the few instances that I did not mention my previous industry experience to participants prior to the interview, there was a difference in the types of responses I received. Interviewees responded in language phrased in terms aimed towards an interviewer unfamiliar with and unknowledgeable of the industry and as a consequence more time was required to elicit valuable and worthwhile responses. This was in stark contrast to the vast majority of interviews in which my industry experience was revealed prior to interview and in which verbal exchanges were expressed in common construction industry vernacular. While of note, the main positive benefit of participants being aware of my industry association was that it facilitated the building of rapport and resulted in minimising the need for participants to explain and clarify responses. It may have made participants made more overt and honest responses because they were aware that I had an understanding of the construction industry. The greater concern, however, arose because of the potential commercial harm that could perceivably be done to participants' businesses and organisations. By not revealing my links with the industry to interviewees they could unknowingly disclose sensitive commercial information of the kind that would not ordinarily be divulged to another industry member. In other words they could be inadvertently misled by the misnomer that my association and connection with the construction industry is purely an academic one. Furthermore, they may allude to and discuss individuals and organisations within the wider industry that are known to me, or that I have held relationships with previously, that they otherwise would not have mentioned. For interviewees representing some sectors of the industry, my professional involvement with the construction industry would not necessarily be perceived to be problematic. Others however such as electrical Sub-Contractors could be greatly concerned if they were to discover post interview that they had disclosed confidential information to me that could conceivably be detrimental to their future business operations. This possibility therefore obligated me to make a full disclosure prior to undertaking interviews. This approach firstly gave potential participants the opportunity to decline the interview, and secondly, if they chose to participate it enabled them, if they so desired, to moderate and restrict their responses accordingly, and at a level they deemed to be appropriate. While I have no reason to believe that participant responses were in any way tempered as a

result of my decision not to actively deceive participants, I cannot assume that this is the case.

4.13.4 Mitigating Risk and Harm

Many studies come with inherent risk and the potential to cause harm to research participants. Some participants for example may feel uncomfortable in the company of people they are unfamiliar with, while others may become psychologically distressed discussing sensitive and personal issues (Polit & Beck, 2010). Miles et al., (1994, p. 292) contend that:-

Harm to participants can come in many varieties Setting risk levels for potential harm is very difficult – perhaps impossible – in qualitative studies. It's wise to assume that the chances of some type of harm are better than even, and to consider in advance, ways of reducing that likelihood.

This study took heed of the warning of Miles et al.,(1994) and mitigated as much as possible the risk of causing harm to participants by maintaining rigid adherence to issues of informed consent, confidentiality, and avoiding deceptive practices. Notwithstanding any of these factors, the fact remains that my effectiveness as a researcher, is itself, another source of potential risk to participants. The quality of this study's findings has its antecedents in the value of the data generated and subsequent interpretation. Likewise the co-generated data is a result of the interview, or conversation between the participant and me as the researcher. In part, the success of the exchange between interviewers – interviewee comes down to how at ease both participants feel in the company of the other, more specifically the degree to which the participant trusts the researcher. It naturally follows therefore that researchers who secure the trust of interviewees, are very likely to be able to probe much more deeply into some aspects of research phenomena. As a consequence participants during an interview can often reveal details or issues that they would not ordinarily discuss with a stranger, that upon mature reflection they may regret having revealed. I am confident that instances such as these did occur during some interviews, as on several occasions I was astounded by the frankness of participants' responses to questions. All interviewees, however, when debriefed at the conclusion of the interview and asked if they wished to add, or more importantly retract anything they had said during the interview,

elected not to do so. Nevertheless, all were availed of my contact details and the on-going option to amend or withdraw any comments they had made.

I will never know for sure that no harm was done to research participants or their businesses during the completion of this study. At best I remain hopeful that the mitigation measures implemented during the processes of recruiting and interviewing participants and the subsequent data analysis were effective in minimising any risk and possible harm. This discussion has only alluded to the four widely accepted principles addressed above, that are coincidentally the basis of the University of Canterbury's Human Ethics Policy. Ethical considerations, however, extend more widely than these factors alone and often need to account for such issues as promises and reciprocity, data ownership (Patton, 2002) and sponsorship arrangements (Burgess, 1984).

4.14 SUMMARY

This chapter documents and discusses the procedures, rationale and justification that support the generation and analysis of data throughout the research process. Commencing with the introduction of the practical methodological steps required to undertake a grounded theory, the chapter continues to define the research context, and explain the reasoning supporting sampling criteria and the decision to gather data by the means of semi structured interviews. An extended discussion addresses the issue of gaining access to research participants, often borne from leveraging off pre-existing industry knowledge and awareness. The narrative continues to account for the introduction and broad acceptance of CAQDAS within qualitative studies, whilst justifying the use of NVivo as a means of facilitating data analysis. As a researcher relatively new to NVivo within grounded theories, a brief personal reflection considers the appropriateness of NVivo when used within this framework. Subsequent to which, discussion questions the relevance and suitability of criteria for ensuring the rigor and robust evaluation of grounded theory inquiries. The close of the chapter outlines the ethical considerations necessary to maintain ethical integrity.

CHAPTER 5

RESEARCH CONTEXT

5.1. INTRODUCTION

It is accepted that theory emerging from a constructivist grounded theory is the researcher's interpretation of phenomena within the substantive context. Context, which according to Corbin et al.,(2008, p. 88):

.... doesn't determine experience or set the course of action, but it does identify the sets of conditions in which problems and/or situations arise and to which persons respond through some form of action/interaction and emotion(process), and in doing so it brings about consequences that in turn might go back to impact upon conditions.

This description, however, although salient, does not accord entirely with a constructivist approach and address functional processes, Charmaz (2006, pp. 130-131) clarifies when she says:-

.... The constructivist approach means learning how, when, and to what extent the studied experience is embedded in larger and, often, hidden positions, networks, situations, and relationships. Subsequently, differences and distinctions between people become visible as well as the hierarchies of power, communication, and opportunity that maintain and perpetuate such differences and distinctions.

Therefore to understand the context of the studied phenomena, from which the constructivist interpretation and theory is drawn, it is necessary, as Charmaz (2006, p. 180) would argue, to address the "... social, historical, local, and interactional contexts...." of the substantive environment. As such, to situate this study within its appropriate context, and lend support for the generation and interpretation of data and consequent findings, this chapter discusses the most relevant aspects of the construction industry as they relate to this inquiry. Commencing with a brief overview of the industry demographics, it will discuss extensively the rationale supporting the adoption and use of sub-contracting organisations. The discussion will explain some of the historical issues that the industry has faced, and moves on to address themes such as; the tendency for domination of a few large

organisations, the extremely low barriers to entry, industry fragmentation, and competitive environment. Following on an outline of the currently most common procurement methods will explain the contractual and functional relationships and processes. Prior to the chapter summary discussion will turn to the ubiquitous use of competitive tendering and the nature of inter-organisational relationships that this organisation structure perpetuates.

5.2 INDUSTRY DEMOGRAPHICS

The demographics of the New Zealand construction industry are similar to those of the other OECD countries, being comprised primarily of small businesses. And in part this fragmented model, embodying a large number of specialist Contractors, is thought to be the underlying reason for its poor performance (Davis, 2010). Included amongst the plethora of actors are Architects, engineers, Consultants, builders and a high proportion of sub trade service organisations.

In total some twenty five thousand people are directly employed by construction firms (builders), dispersed across both the residential and non-residential sectors, albeit that the employment profile and characteristics of the two contrast somewhat. Fifty six per cent of employment in residential building is provided by companies employing less than five employees each. Whereas Seventy four per cent of employees in the non-residential building sector are working for firms employing over twenty staff each. This accords with international research findings suggesting that the structure of the industry has evolved significantly over the last three or four decades and now tends to be heavily dominated by a few large firms at the top of the supply chain, contrasted against a fragmentation of smaller business at the bottom (ILO, 2001). These smaller firms, who combined represent the largest sector of the industry with over sixty thousand employees constitute many diverse trades, from concrete layers to painters, and electricians to glazers.

It is notable from this and other international studies that the larger main contracting organisations often employ very few, if any, employees who work within a recognised trade. Of those that do, these employees are likely to be carpenters, who often multi task assisting with small tasks such as concreting projects. In the main, however, large construction companies predominantly employ white collar staff, such as Quantity Surveyors, Engineers, Project Managers and Supervisory Employees. In essence Main Contractors nowadays are not builders in the traditional sense, but more akin to large project management businesses

(ILO, 2001), heavily reliant upon the use of external organisations and Sub-Contractors to provide the necessary resources to physically build construction projects.

5.3 THE EMERGENCE OF SUBCONTRACTING

The construction sector has become increasingly reliant upon the use of Sub-Contractors, sometimes referred to as specialist trades. Sub-Contractors are now responsible for a large proportion of all works on a construction project, and it is not unusual for up to 90% or more of the value of projects to be directly related to Sub-Contractors (Eriksson, et al., 2007; Lehtonen-Wegelius, 1998; Vrijhoef & Koskela, 2000). The propensity for the use of the skills and expertise of Sub-Contractors tends to change in relation to the relative size and complexity of a project (Eccles, 1981). Compared to other industries this proclivity to outsource such a large proportion work makes the construction sector somewhat unusual (Khalfan, et al., 2006).

New Zealand construction practices and adoption of subcontract services and labour have followed those of the rest of the world. For more than thirty years construction firms have tended to distance themselves from the functional aspects of the construction process, preferring to focus on control and project management. Whilst larger firms may still account for a significant proportion of industry output, the amount of directly employed construction workers with trade skills has significantly diminished and been replaced with white collar employees (ILO, 2001).

There are a number of reasons why construction firms have moved away from directly employed labour. There is a tendency for construction projects to be more bespoke in nature and located in geographic locations often far removed from a firm's central base. This increases the need for flexibility. Furthermore, technical and complex projects have become a necessity in today's built environment and necessitate the skills of a multitude of diverse trades. Consequently it is both uneconomic and unrealistic for one organisation to retain all the required skills in-house (Tam, Shen, & Kong, 2011). This is especially so when the industry continues to promote the competitive tender, and struggles with the inevitable uncertainty of future workflow that this model creates (Hartmann & Caerteling, 2010).

The cyclical labour demand that results from current procurement practices means that it is not economically sustainable for one organisation to manage a large proportion of the direct workforce, and would lead to the need to continually recruit and release employees

(Eccles, 1981). Whilst retaining a broad range of skills in house may appear convenient, the financial reality is that finding work to maintain employment for employees from a multitude of different functional disciplines is unrealistic. In addition, other incidental employment costs would be prohibitive. Furthermore, the management and administrative effort to facilitate movement of employees between projects would increase project management and supervision costs. Finally, the outsourcing of work packages to Sub-Contractor's transfers control away from a Main Contractor to the supply chain.

For the most part the importance of Sub-Contractors and their added value through expertise and innovation is not recognised by Main Contractors and the wider industry (Dainty, Briscoe, & Millett, 2001; Egan, 1998). Sub-Contractors take responsibility for management of onsite employees and they alone carry the burden of poor performing employees and a project's exposure to possible disruptions such as poor weather conditions.

Whilst organisational flexibility would appear to be one of the main drivers of the construction sector's use of Sub-Contractors, in essence there are two overriding reasons why the industry continues to remain with the current model. Firstly, their use significantly reduces costs incurred by the Main Contractor. These are not simply administrative costs, and include those incurred as a result of submitting tenders, and any associated omissions and errors for which they cannot receive compensation. Secondly, Sub-Contractors act as a means of mitigating a Main Contractor's risk, for example inherent risks like a lack of work or resources, or as a result of employment or performance (Hartmann & Caerteling, 2010; ILO, 2001; Tam, et al., 2011).

A view also exists that the transference of risk from Main Contractors to Sub-Contractors is not adopted as merely a strategic business decision, but rather that this practice facilitates a means of exploiting opportunities in the supply chain (Khalfan, et al., 2006; Pietroforte, 1997). Regardless, new subcontracting businesses continue to emerge, largely as a result of the very low barriers to entry, and the competitive price driven culture of the industry. An industry which is said to continue to accept new entrants without adequate vetting of their financial stability, qualifications and ability to perform as required (Arslan, Kivrak, Birgonul, & Dikmen, 2008). The net effect, however, is that Sub-Contractors have now become an integral part of the construction process, so much so that the ultimate success of a project is

largely dependent upon their effective selection and performance (Thomas Ng, Tang, & Palaneeswaran, 2009).

5.4 SUB-CONTRACTOR SELECTION

The vast majority of the value of any construction project is derived from the subcontract trades, so it is not surprising that opportunistic Main Contractors view Sub-Contractors as the most effective source of cost savings and reductions (Kumaraswamy & Matthews, 2000). The starting point for any potential savings is borne from, in most cases, the traditional tender process, 'lowest price wins'. Although Main Contractors may have developed a certain degree of trust and familiarity with some Sub-Contractors, and would possibly prefer to work alongside them (Hartmann & Caerteling, 2010; Tserng & Lin, 2002), the complexity of modern projects will often mean that employing unknown Sub-Contractors becomes unavoidable. Moreover, familiar or preferred subcontract companies may not submit the lowest price. In the course of this study participant interviews with Main Contractors and Sub-Contractors have confirmed that in New Zealand this is often the case. Quite frequently either unknown or undesirable Sub-Contractors submit unsolicited tenders to Main Contractors that are known to be tendering for a particular project and very often the submitted prices are either very competitive or unrealistically low. At times when presented with this scenario, a Main Contractor's first choice is not to speak to the contractor with the lowest price. It is not uncommon for their first approach to be to a known and preferred, *pet*, contractor which may be for example an electrical or plumbing contractor with a higher price. The Main Contractor will very often attempt to negotiate using the lowest submitted tender as a starting point for negotiations or at least for leverage. Dependent upon the likely margins the Sub-Contractor wishes to achieve and conscious of current workloads an acceptable discount off the original submitted tender is sometimes determined. Alternatively the Sub-Contractor may opt to simply decline the opportunity to negotiate and leave the Main Contractor to make the selection decision. Some large well established Sub-Contractors have confirmed that up to ninety per cent of their winning tenders are as the result of post tender close negotiations with Main Contractors when they were not the lowest submitted initial tender. However, long standing relationships based upon performance enable the Main Contractor to secure a contractor that is trusted to perform, and the Sub-Contractor to obtain a project that ordinarily they would not have won. Some Sub-Contractors alluded in interviews that this may just be a

ruse on the part of Main Contractors to improve their own margins. Sub-Contractors confirm that they do not see other tenders, so they might well have been the lowest price and negotiating with the Main Contractor has only served to erode their own margin and integrity.

During the construction process, regardless of the procurement route, it is necessary that tens or sometimes, for larger projects, hundreds of subcontract trades are commissioned. However, whilst some Clients may evaluate the appropriateness of Main Contractors through pre-qualification to undertake a project, often very little effort is placed upon the evaluation and recruitment of Sub-Contractors, which can result in detrimental implications as the project progresses, ultimately impacting upon quality, time and costs (Arslan, et al., 2008). However, this may not solely be due to limited effort by Clients and Main Contractors, but may very possibly be due to the unwillingness of large numbers of small Contractors to allocate resources to a process that may not have a positive outcome (Baroudi & Metcalfe, 2011).

Research has identified that a correlation exists between the selection of Sub-Contractors and the success rate of projects and it also significantly impacts upon the ongoing performance of a project based organisation, such as a Main Contractor (Artto, Eloranta, & Kujala, 2008). It is therefore somewhat surprising that no guidelines have generally been adopted either internationally or in New Zealand that define a recommended framework for Sub-Contractor selection. Prima facie, however, several factors are paramount like their previous work history, efficiency, reputation and quality of employees for example (Arslan, et al., 2008). However, following the UK government report '*Constructing the team*' (Latham, 1994), and its recommendations, the Construction Industry Board (C.I.B) in 1997 published the '*Code of Practice for the Selection of Sub-Contractors*' (Board, 1997), which predominantly discusses procedures to adopt within a competitive tender process. The primary purpose of the Code of Practice is to increase the efficiency and associated productivity of the industry by the use of best practice principles, whilst introducing lean principles to minimise waste in the supply chain and remove the potential for duplication.

During this research it became apparent that both Main Contractors and Sub-Contractors would benefit from adopting some, if not all, of the guidelines outlined in this Code of Practice. This is because predominantly construction contracts are won and awarded based solely on price, with little consideration for the influence that an inappropriate supply chain

can have on the quality of the final product. Further, Main Contractors often request tenders from selected Sub-Contractors, but at the same time advertise in local media for tenders from other interested parties, without reference to their qualifications or ability to perform. This is a safeguard solely used to ensure they have the most competitive price. Confidentiality is seldom observed with Sub-Contractors' prices often discussed with competing organisations. Project specific documentation from Architects and Consultants is very often incomplete, or of a poor quality necessitating the need to omit, or offer alternate products, making evaluation of tenders difficult. Teamwork is not uppermost in Sub-Contractors' minds. Generally margins within the competitive environment are so low, that it is commonplace that each party is only interested in protecting their own interests (BCSPP, 2011).

5.5 HISTORICAL CONSTRUCTION INDUSTRY ISSUES

Whilst complex, the construction industry's structure has been deemed to be unique, in that most of its turnover is generated from a relatively small number of large firms. Relatively low barriers to entry, however, ensure that the industry maintains a proliferation of small to medium enterprises (SME) and whilst this does allow for, and engender flexibility, it can be detrimental to open communication and innovation (Wolstenholme, 2009). Moreover, the resultant fragmented industry, overrun with actors reliant upon short lived opportunism (Cox, et al., 2006) effectively reduces industry productivity (BCSPP, 2011).

For over a century the United Kingdom construction industry has been attempting to address issues such as industry fragmentation, a poor culture and vast inefficiencies. Two highly regarded government commissioned reports of the 1990s have played a major role in attempting to influence and change long held opinions and attitudes within the sector. The first being the 1994 report 'Constructing the team' written by Sir Michael Latham, and more commonly known as the Latham Report, and the second written by Sir John Egan in 1998 entitled 'Rethinking Construction'. The Latham report made several recommendations to the industry, suggesting that their implementation had the potential to reduce construction costs by thirty per cent over a five year period (Bourn, 2001).

The Egan report (1998) focussed largely upon the private sector construction industry, and like Latham (1994) made recommendations for improving poor efficiency within the industry. Egan, however, also identified four other specific reasons for the industry

requiring modernisation. Firstly, the margins were too low to sustain the industry, secondly with low profitability very little was being reinvested into research and development. This point also limited the proportion of trainees in the workforce which would ultimately create labour shortages. And lastly what was perceived by Egan as one the *'greatest barriers to improvement'*, Clients maintaining a propensity to select Consultants, Architects and builders based upon the lowest tendered price.

One of Egan's recommendations was that the industry needed to move its mind-set away from thinking about their next employer, to one that is focussed on their current customer and their needs, which historically has not been the case. Egan (1998, p. 13) commented:-

'In the best companies, the customer drives everything. These companies provide precisely what the end customer needs, when the customer needs it and at a price that reflects the product's value to the customer. Activities which do not add value from the customer's viewpoint are classified as waste and eliminated'.

Egan also suggests that the fragmentation in the construction industry is largely due to the irrational assumption that Clients somehow benefit by the selection of new actors for each project. These groups then come to a new project with the view that it can be completed using a staged step by step approach implemented by individual trades working sequentially in isolation to each other. Further this approach is supported by a culture of self-interest, compounded by a lack of obligation and no commitment as to whether the project is a success or not.

The issues addressed by Latham and Egan are not isolated to the United Kingdom; they are ongoing issues for the international construction sector. Within New Zealand the New Zealand Construction Industry Council (NZCIC, 2004, p.4) has highlighted some of the issues facing the industry especially those pertaining to competitive tendering:-

'...the lowest bid approach is compromising design quality and integrity, health and safety, training, the environment and education, all of which constrains innovation (given the need to trim costs in order to win contracts in the first place, there are few incentives to keep training and investing in innovation and development).

'...the lowest bid approach encourages unsustainable markets (bidders are required to seek every possible cost-efficiency, which can lead to under-estimation of the actual costs associated with undertaking the work, and low/unsustainable margins)'.

The NZCIC share the international opinion that procurement methods need to change to secure projects that are of quality and give value for money and that are not primarily focussed upon the lowest cost (NZCIC, 2004).

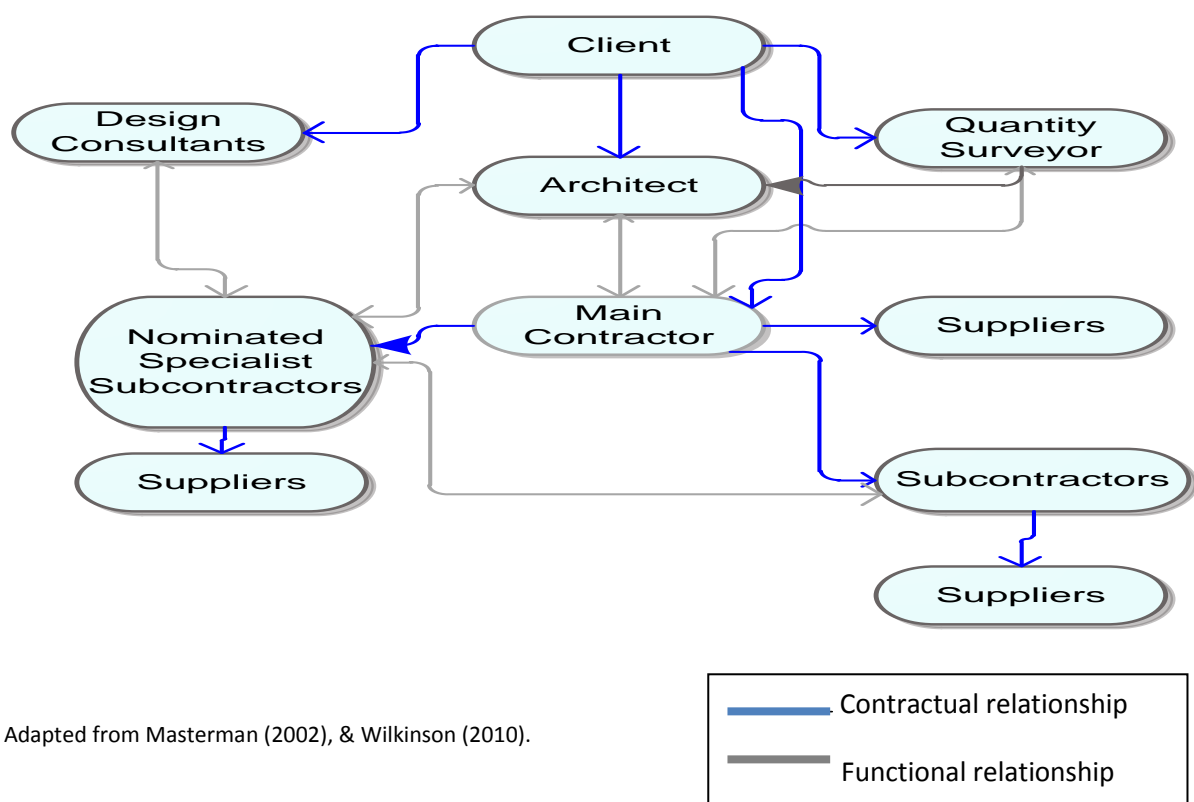
5.6 CONSTRUCTION INDUSTRY PROCUREMENT

Ultimately it is construction Clients as originators of new projects that determine the amalgamation of actors brought together to work on any one project. It is they who, depending upon their own experience of the construction sector, opt for a particular procurement method and it is this initial decision that will often influence the success of the final outcome, not only for the Client, but also the other members of the supply chain (Male & Mitrovic, 2005; Vennström & Eriksson, 2010). Procurement methods themselves are generally categorised in one of three ways. The first is separated or traditional procurement (Masterman, 2002) sometimes referred to as design-bid-build (Wilkinson & Scofield, 2010) approach and which would include the traditional lump sum (Love, Skitmore, & Earl, 1998). Second, an integrated approach, including design and build, novation and turnkey methods (Love, et al., 1998; Masterman, 2002); and a management orientated (Masterman, 2002) approach whereby the design is produced by Consultants responsible directly to the Client, with the works carried out by package Contractors (Masterman, 2002; Wilkinson & Scofield, 2010). Third, and used widely in the New Zealand context, is project management. This method sees a project manager employed by the Client from the outset, and is then responsible for liaising between stakeholders but who takes no active part in the design or construction of a project (Wilkinson & Scofield, 2010). The following figures 5.1 to 5.6 illustrate the contractual and functional relationships between stakeholders for the differing procurement methods, as well as the process flow of activities.

5.6.1 Traditional Procurement

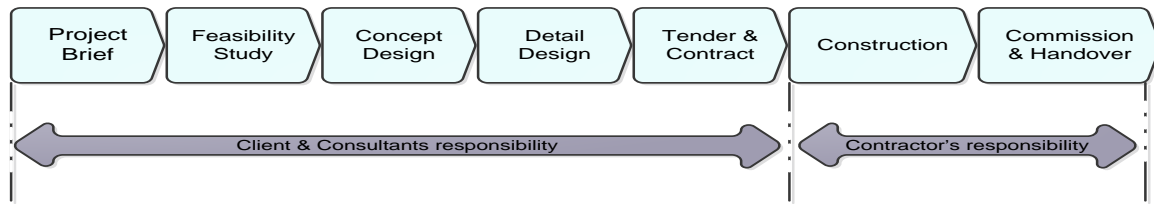
When working within the traditional or separated procurement system Figures 1 & 2, design and construction responsibilities are isolated from each other. It is usual for the Client to employ the services of a lead architect and associated mechanical and electrical Consultants to prepare the design and tender documentation (Rashid et al., 2006). Tender documents will be released to Building Contractors to bid upon, in turn the Building Contractors will request pricing for specific services from Sub-Contractors, and often Client nominated specialist Sub-Contractors. It is usual for the lowest tendered price submitted to be accepted by the Client in consultation with the architect. Characteristically delivery of the project is of a sequential nature, with the vast majority of design work completed prior to the commencement of work on site. The project is usually jointly managed by the Client through the architect and associated Consultants as well as the project Main Contractor. Traditionally Architects are paid on a percentage of the value of the project, with the Main Contractor on a fixed lump sum, or via a pre-determined schedule of quantities or rates (Masterman, 2002).

Figure 5.1 Traditional Procurement Functional & Contractual Relationship Chart



Adapted from Masterman (2002), & Wilkinson (2010).

Figure 5.2 Traditional Procurement Process

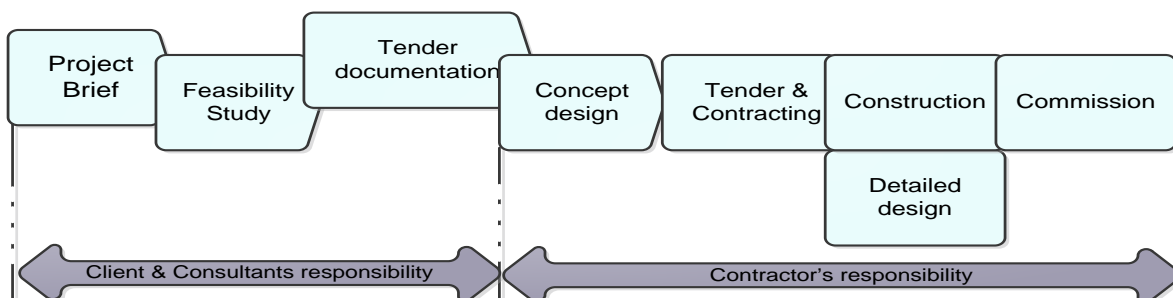


Source Rashid et al, (2006)

5.6.2 Integrated Procurement

Integrated procurement, Figures 3 & 4, combines the responsibility for design and construction of the project within one organisation. From the perspective of the Client they deal with only one organisation, who elects to either directly employ or subcontract the design and construction team members (Masterman, 2002; Rashid, et al., 2006). The Client and his Consultants produce a brief and invite interested parties, usually with vast experience, to submit their own design and costing. Several variants exist within this method such as design & build, turnkey, novated design & build, and package deals. Using this type of integrated approach, however, poses advantages and disadvantages.

Figure 5.3 Integrated Procurement Process



Source Rashid et al, (2006)

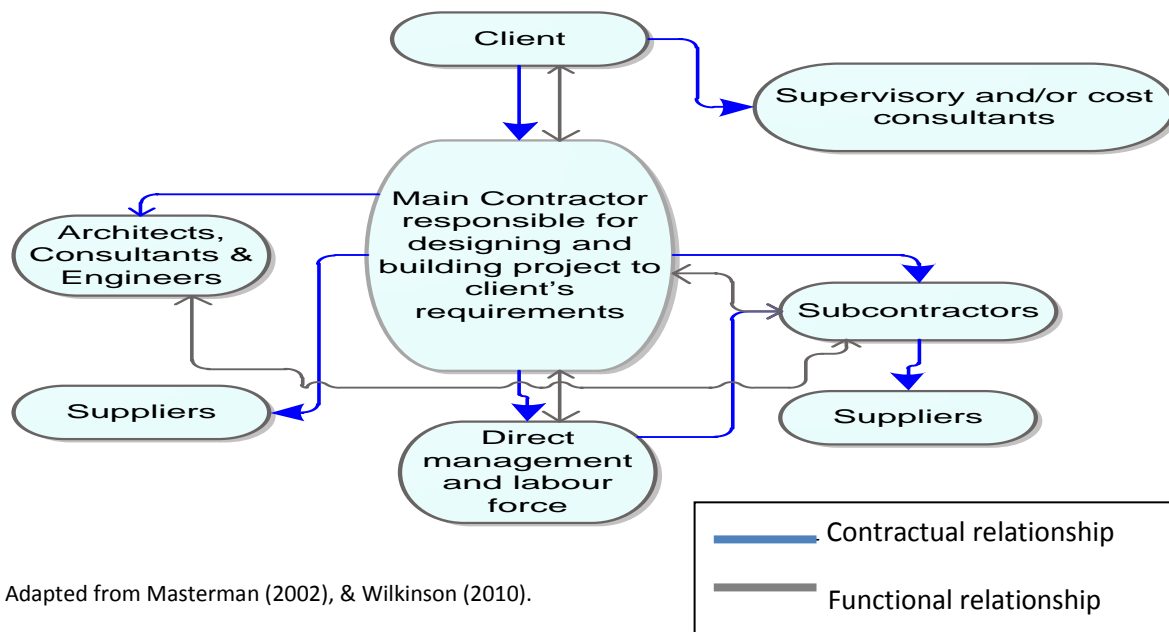
Advantages

- The Client maintains only one point of contact.
- If the Client clearly defines their requirements, the cost is often less than other methods.
- Design and construction often overlap, producing shorter project durations.

Disadvantages

- Poor design briefs can lead to ambiguous tender responses, making comparisons and evaluations of tenders difficult.
- Without a schedule of quantities produced by a quantity surveyor, costing variations can be difficult.
- The Client relinquishes some of their ability to control aesthetics (Masterman, 2002).

Figure 5.4 Integrated Procurement, Functional & Contractual Relationships



Adapted from Masterman (2002), & Wilkinson (2010).

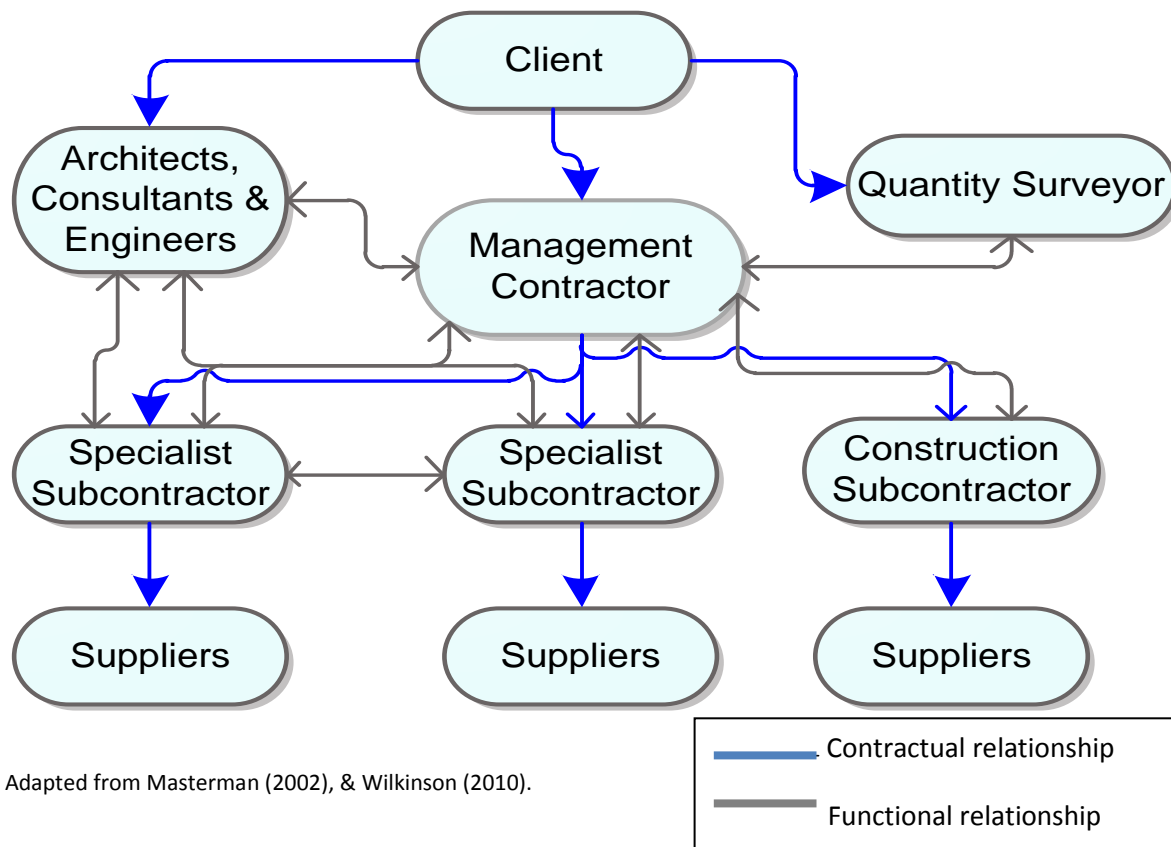
5.6.3 Management Orientated Procurement

Management orientated procurement systems contract both the management of the design process and the construction of the project to a contractor, who in effect becomes the Client's management consultant. The project is designed by Architects and Consultants employed by the Client. Specialist Sub-Contractors are employed usually by the management contractor, but occasionally by the Client to construct the project, see Figure 5.5 for the contractual and functional relationships. The primary reason for the introduction of this type of procurement was because of the acknowledgement by some that a builder has more expertise to manage the design and construction process (Rashid, et al., 2006).

Management orientated procurement includes three different methods, management contracting, construction management and design and manage. The first two of these methods are processes deemed to speed up completion of the project, commonly referred to as fast tracking. The primary difference between the two methods centres on the

contractual arrangements of the specialist or package Contractors. Under management contracting they are contracted by the management contractor, and by the Client under construction management. The third method, design and manage, sees a firm engaged to initially design the project, then work as a consultant to the Client to manage the specialist trades employed directly by the Client to build the project (Rashid, et al., 2006).

Figure 5.5 Management Orientated Procurement, Functional & Contractual Relationships



Adapted from Masterman (2002), & Wilkinson (2010).

Whilst management procurement may include three alternative philosophies, there are several characteristics, both positive and negative attributable to each particular method.

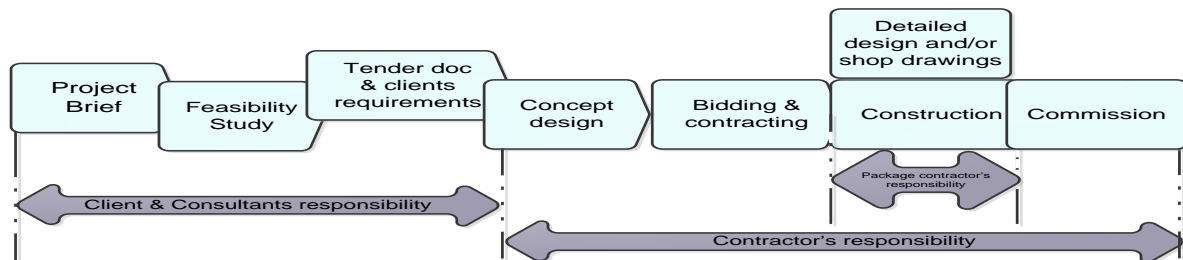
Positives

Commencement of the project is accelerated and should therefore realise an appreciably earlier completion.

- The expertise of the contractor/manager can be garnered very early in the project.
- The system is very flexible; therefore variations and delays are more easily accommodated.

- There is less financial risk because the project is not reliant upon one Main Contractor; any one financial failure is less damaging to the continuation of the project.
- Individual subcontracts on up to ninety per cent of the project enable competition, and a reduction in costs (Masterman, 2002).

Figure 5.6 Management Orientated Procurement Process



Source Rashid et al, (2006)

Negatives

- With the management contractor acting in the capacity of a consultant, a larger proportion of risk is allocated to the Client if Sub-Contractors fail to perform effectively.
- The management contractor carries limited liability; hence any remedial costs are borne by the Client when Sub-Contractors fail to remedy their own defects.
- The inability to maintain tight quality control can often lead to the need for the Client to employ more on site supervisory employees.
- Prior to the commencement of the project, the final costs are usually unknown (Masterman, 2002).

5.6.4 Traditional procurement – the Problems

This study of the New Zealand construction industry has served to reinforce the views, concerns and issues that both Latham (1994) and Egan (1998) identified in the UK construction industry and that remain prevalent issues for New Zealand today. Margins for Main Contractors, who ultimately carry the risk of poor performing sub trades (NSWGovt, 2008) are generally very low, sometimes as low as one or two per cent. For Sub-Contractors margins are slightly better averaging between eight and fifteen per cent. Clients are driving the culture of competitive bidding by insisting on the traditional tender, and Sub-Contractors appear to have lost sight of their Clients' interests, and predominantly only

serve their own. Overseas experience shows that the traditional method of open tendering and the 'lowest price wins' mentality still exists and remains ingrained as the most popular method of procuring a project (Naoum, 2003).

Research by Constructing Excellence UK (2003) suggests that the traditional tender has four inherent risks. Firstly, it is not very often that the lowest bid process produces the best value for the Client. It is very common within the industry for an open bid tender to include several contingencies, first and foremost to cover any unknowns, as a consequence of poor documentation. This leads to unnecessary loss for the Client because over estimated contingency costs more than cover 'unknowns'. On the other hand if the contingencies themselves have been under estimated they can lead to a loss for the contractor. Either way it creates a point of tension within the relationship. Secondly, there is often ambiguity within tendered prices, and quotations are littered with contract conditions. In effect Sub-Contractors and Main Contractors attempt to recover costs by exploiting contractual conditions and omissions from documentation; whilst suspicion of Main Contractors and Clients by Sub-Contractors supports their reasoning for adopting this practice. Consequently the Client is left unsure of the final contract price, and the Sub-Contractors are left uncertain as to payment. The third risk of the traditional procurement route is created when the Client and contractor enter into an agreement without a developed understanding of their exposure to the risk of time and cost associated with the project. The Client ultimately has uncertainty as to whether the quotation is comprehensive or not, and the contractor left unsure as to whether the Client will cover all costs. Any of the these three risks can lead subsequently to the fourth risk, the risk of arbitration and an outcome that is unknown to all (CE, 2003).

Again, these same issues exist in New Zealand. The competitive nature of the industry is such that all parties seek to garner a competitive advantage when opportunities arise. It is not unusual for a Client to request tenders from up to five builders, each builder will, in turn request tenders for each relevant trade from multiple sources, usually at least three, who in turn will request prices from their own suppliers.

Sub-Contractors especially, implement several strategies to increase their likelihood of securing a competitive bid project, namely:-

- Offer alternative products
- Look for discrepancies between drawings and specification
- Omit items from tender
- Submit tenders as late as possible
- Price discriminate
- Tender bomb
- Post tender negotiations.

Alternative products other than those specified are routinely included with tenders as a means of reducing the cost of a Sub-Contractor's tender. Cheaper sometimes inferior and poor quality products are offered that may not only reduce the bid price, but at the same time improve the contractor's margin. It is not unheard of for inattentive Main Contractors to accept Sub-Contractors' tenders, only to discover during an on-going project that products originally specified were not those ultimately supplied and installed.

Several Sub-Contractors and Main Contractors commented during interviews about the deteriorating standard of documentation provided to tenderers. Few Clients now employ the services of a quantity surveyor to provide a schedule of quantities to assist with the preparation of tenders. Participant interviews show that proportionately only five per cent of projects are scheduled; these tend to be the larger ones. For Clients this is often an economic decision borne from the high cost of quantifying all facets of a project. Nevertheless, this decision has consequences because discrepancies that could have been filtered out by a quantity surveyor are often overlooked. That is not to say that others involved in the preparation of documentation such as engineers and Architects be absolved of their responsibilities to produce comprehensive documents. It remains, however, that buildings are complex, and incorporate many individual systems, and as such it is expected that documentation is likely to incorporate numerous mistakes and omissions. If faced with ambiguous documentation Contractors will normally exclude the items in question from their tender. In this regard both Main Contractors and Sub-Contractors perceive this as an opportunity to improve their margins by seeking additional costs to compensate for additional work; this of course is post tender, and at a time when they are no longer pricing within a competitive environment.

Purposely omitting items from a tender is commonplace. A familiar omission by electrical and plumbing Contractors for example would be trenching, or the fire proofing of wall penetrations. Most tradesmen would be competent to undertake both tasks. However, the tasks can be expensive to carry out and a relative appraisal of their value is not always easily quantifiable. Hence a contractor who submits a tender and chooses to omit these costs achieves a conditional competitive advantage. The advantage is conditional in the sense that, if the Main Contractor does not identify the before the final submission to the Client, then it is deemed to be accepted. In this instance the associated cost and responsibility for the inclusion of these items subsequently passes to the Main Contractor.

When Main Contractors submit their tender to the architect or Client, their bid is based primarily on the submissions of Sub-Contractors. It therefore assists Main Contractors compile their tenders, if Sub-Contractors' bids are forwarded to them with sufficient time remaining pre close of tenders, to both fairly and thoroughly evaluate all competing submissions. For several reasons this suggested practice is not the norm. Firstly, documentation may simply not have been sent to Sub-Contractors in sufficient time for them to produce a tender that meets the time constraints of Main Contractors. Often however, it is a strategic decision on the part of a Sub-Contractor. The supporting rationale being that by delaying the submission of a tender it extends the timeframe available to identify an agreeable, '*friendly*', Main Contractor who may be willing to provide some insight into competitors pricing. Alternatively Sub-Contractors purposely submit late to minimise the window of time available by Main Contractors to '*shop*' or reveal their prices to others.

Main Contractors are well aware that they may potentially lose a project by not including the most competitive bids received from Sub-Contractors within their submissions, even though their compliance with tender documents may not have been confirmed. To address this situation Main Contractors often include a Sub-Contractor's quotation within their own submission so that Architects and Consultants may validate it. In some instances the Sub-Contractor will be asked to price any omissions to confirm competitiveness against compliant bids. Findings from discussions with Sub-Contractors, subsequently confirmed by Main Contractors and Architects, is that the Sub-Contractor with the lowest price at the close of tenders, is often likely to be successful in negotiating for the project with the Main Contractor, even if their original bid was not compliant. The consequence of this tendency

to negotiate or accept the lowest submitted tender post tender close is that other bids may potentially be overlooked that would offer better value if comparatively evaluated.

Price discrimination is another frequently used tactic. Many Sub-Contractors submit different pricing structures to competing Main Contractors. For some this practice is to give a preferred Main Contractor a competitive advantage in anticipation of a reciprocal favour if the Main Contractor's bid is successful. Others submit a consciously high tender to an untrustworthy Main Contractor. Some perceive the risk of working for a contractor with poor project management skills or with a reputation for late fee payment as sufficient reason to charge a premium.

It is common for a new entrant to the industry to '*Tender Bomb*'. The basic premise of this is to identify and price as many projects as possible and submit tenders to all Main Contractors pricing the associated projects, working on the balance of probabilities that some tenders will be successful.

Many Sub-Contractors with longstanding relationships with some Main Contractors anticipate the opportunity to negotiate for a project after the tender closes. For many Sub-Contractors this is a very successful strategy and for some the vast majority of their work can be sourced in this way.

Many tender practices have serious implications for the industry, impacting upon quality, performance and profitability and often the antecedent of these problems is founded in the traditional tender and the associated competitive environment that evolves as a consequence. Predominantly a Client, especially an inexperienced one, chooses to procure a project via a traditional tender because they assume that market forces will deliver the best value project, at the lowest fixed cost (AIA, 2010). The reality, however, is often very different, with a Client paying a premium to receive what can conceivably be a poor quality project and one that takes longer than predicted to complete.

Main Contractors and Sub-Contractors spend an inordinate amount of time tendering for projects the majority of which will prove to be unsuccessful. Participant interviews indicate that the average success rate for tendered projects is around 15%, or a ratio of 1.5:10. Many Contractors spend up to 3% of their annual turnover pricing what results in unsuccessfully tendered projects. For some smaller Contractors this ratio is significantly higher. Interviews show that whilst many are spending hundreds of thousands of dollars per year, some are

spending in excess of a million dollars per annum. Most, until asked, have never calculated this added transactional cost of business. The aggregated cost of providing tenders across the construction industry supply chain undoubtedly equates to many millions of dollars per year. However, the majority of businesses consider this to be a routine business cost and factor it into their overheads. This has ramifications for not only Contractors' profitability, but also on the cost of construction. Every project that a contractor wins inevitably includes the associated cost involved with producing tenders for unsuccessful bids, as no mechanism exists to recover this cost from elsewhere. Hence a portion of the cost paid by a Client for a construction project is not only attributable to the eighty five per cent of projects that their chosen Main Contractor lost, but also that of the many other supply chain constituents.

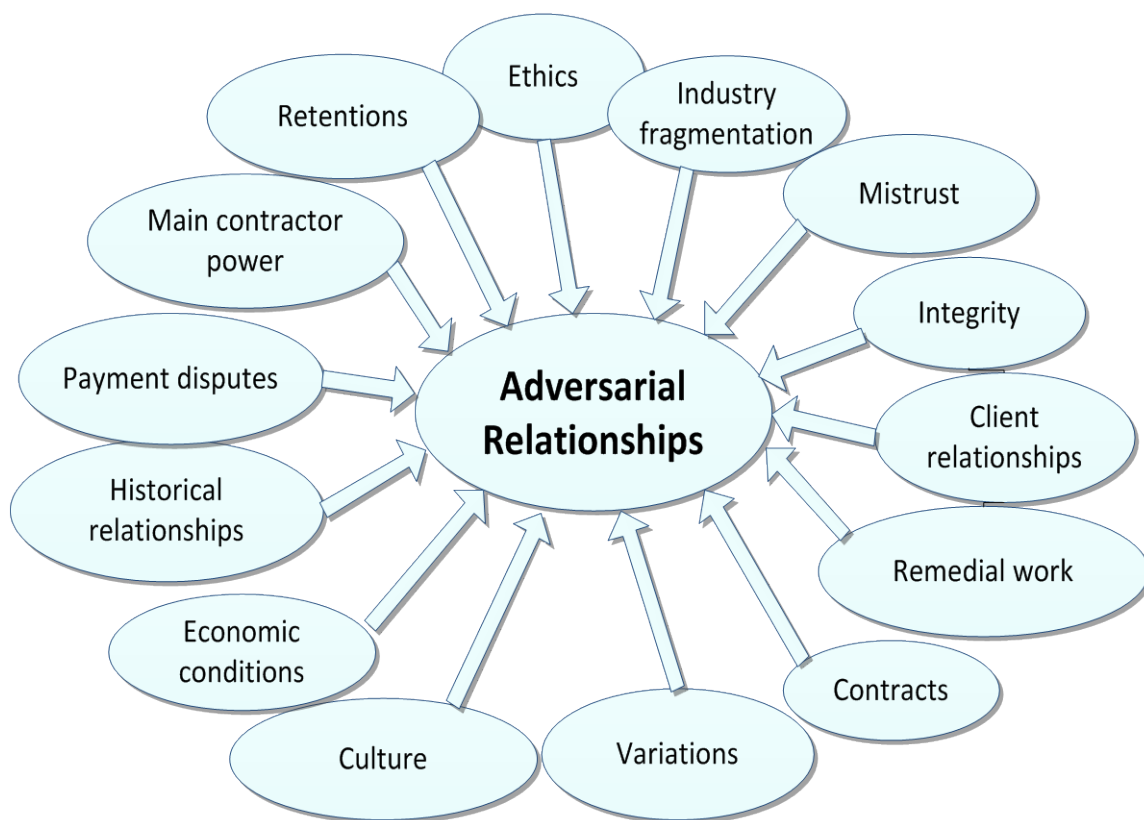
Competition between large numbers of Sub-Contractors and Main Contractors to secure work serves to drive down initial tender costs to Clients. At times to the detriment of Contractors' margins which are easily eroded. In many instances the reduction of margins is to such a degree that projects are not financially viable for Contractors from the outset. The pressure this places upon businesses is at times sufficient to incentivise Contractors to seek, recoup or mitigate some of their perceived losses. Some large Main Contractors and Sub-Contractors interviewed during this study confirmed that when necessary they submit tenders with negative or extremely low margins. Main Contractors seek to recover their position by leveraging discounts from Sub-Contractors and via compensation resulting from discrepancies with documentation and subsequent variation orders. Sub-Contractors are also keen to identify variations from the original contract and will opportunistically take short cuts wherever possible. The behavioural consequence is that costs increase during the project and will often well exceed the original tender, whilst the quality of the finished project deteriorates and projects routinely run over time (Riazi, Riazi, Skitmore, & Cheung, 2011) usually as a result of remedial work that results from poor performing Sub-Contractors (Love, Irani, & Edwards, 2004).

5.6.5 Traditional Procurement & Relationships

The success of any project is also influenced by the willingness of project participants to work co-operatively. However, the traditional tender process does not engender co-operation, moreover it promotes adversary. Clients often find themselves involved in a conflict situation with Main Contractors seeking additional costs; similarly Main Contractors are often in disputes with Sub-Contractors who attempt to recover margins. Contractually

the objectives and goals of parties are often opposed (Love, et al., 2004), with Sub-Contractors contracted to Main Contractors often held at arm's length from the Client (Beach, Webster, & Campbell, 2005; Duren & Dorée, 2008).

Figure 5.7 Source of Adversarial Relationships



In the New Zealand construction industry interviews show that the objectives of Main Contractors and Sub-Contractors could not be more dissimilar. Main Contractors are clearly focussed upon Client satisfaction and enhancing their brand and reputation. When asked how they viewed a successful project on completion, without exception the first response from participants ordinarily pertained to the Client's satisfaction and proclivity to use their company again. Any reference to financial success was normally referenced as holding significantly less importance. Sub-Contractors, however, generally perceive profitability as the first criterion for success. Many do not consider the needs of the Client; as they often have very few dealings with them directly; their relationship is with the Main Contractor who discourages direct dialogue between Clients and Sub-Contractors. It is no surprise, therefore, that with such contrasting objectives, relationships become strained resulting in frequent disputes.

Adversarial relationships (Figure 5.7) within the construction sector are not isolated to New Zealand, many international journals and reports reference their existence (AIA, 2010; Beach, et al., 2005; Eom, Yun, & Paek, 2008; Hartmann & Caerteling, 2010; Khalfan & McDermott, 2006; Latham, 2005; Shapiro, 2005). The inherent mistrust in the sector however, is derived from the formulation of relationships borne as the result of market forces, or the competitive tender. The relationship between Main Contractors and Sub-Contractors is often of short term duration, for one off projects. Each Sub-Contractor is simultaneously working on many other projects for other Main Contractors, and the same is true for Main Contractors. The threat of opportunistic behaviour by the other party reduces communication and creates costs in being able to identify individual organisational responsibilities (Beach, et al., 2005).

Main Contractors interviewed for this study were often under the misconception that relationships with most Sub-Contractors were good; in some instances this will undoubtedly be true. Many Sub-Contractors, however, feel that they are treated poorly by Main Contractors. This ill treatment, they suggest, often commences during the initial tender process (Hinze & Tracey, 1994), and subsequently continues into the construction stage of the project, at times, further compounded by on-going disagreements over variations. This they claim is followed by late payments for interim progress claims and is supported by the industry practice of withholding retention monies. Notwithstanding these problems, Sub-Contractors wishing to remain within the industry have had to learn to accept the prevailing industry culture and place their faith in contractual remedies where they exist to seek appropriate redress as required.

Payment disputes within the industry are commonplace, and historically many Sub-Contractors have become insolvent because of either slow or non-payment from Main Contractors. In some instances payment issues are attributable directly to Main Contractors' poor business practices, but it is also not uncommon for them to be related to the financial failure of a Client or developer. The Construction Contracts Act 2002 was introduced in 2003 to improve cash flow within the industry and speed up payments, and whilst there has been some improvement, problems still exist.

The construction industry's payment structure is similar to a pyramid, with a multitude of small subcontracting and supplier businesses at the base, generally accountable to one Main Contractor, who in turn is usually responsible to one Client at the pinnacle. The Client in

most instances only has a contractual obligation to the Main Contractor, who in turn mitigates his own risk by contracting to individual Sub-Contractors. When invoiced, progress payment claims from Contractors are normally made after, rather than before, work is completed, requiring both Main Contractors and Sub-Contractors to become short term unsecured creditors. This continually exposes the supply chain to financial risks, and means that any payment bottlenecks can have consequences throughout the supply chain (N.Z.L.C, 1999). Often projects include multiple tiers of Sub-Contractors who for the most part have little knowledge of the financial credibility and stability of the Main Contractor they are directly employed by, never mind the Client or developer.

The propensity of the industry to retain the accepted norm of delayed payments is the cause of many disputes in New Zealand Construction. It is not unusual for either payments to be late, or for only a proportion of an invoice to be paid (Ramachandra & Rotimi, 2011). Regardless of how or why payments are not made when due, the result is often the same with increases in both transaction costs and finance costs.

Following a Law Commission report in 1999 which confirmed that many Sub-Contractors' complaints with regards to a Main Contractor's propensity to delay payments at that time were justified (N.Z.L.C, 1999), statutory legislation was introduced to improve cash flow within the industry (Rees-Webbe, 2009). The three principle objectives of the new Construction Contracts Act 2002 (CCA) at the time being:-

1. *To facilitate regular and timely payment between the parties to a construction contract;*
2. *To provide for speedy resolution of disputes arising under a construction contract;*
3. *To provide remedies for the recovery of payments under a construction contract* (Bayley & Kennedy-Grant, 2003; DBH, 2011).

Whilst the introduction of the CCA has had some success improving the time frame for payments when correct procedures have been followed, some issues still remain, especially with regards to the payment of retentions (Rees-Webbe, 2009). In 2010 the Building Research Association of New Zealand commissioned a report (Branz, 2010, p. 5) to identify the current status of late or non-payment in the industry, they concluded:-

- That within the previous five years, sixty one per cent of Head Contractors surveyed had instances when a Client did not pay them.
- Eighty eight per cent of Head Contractors had not been paid for less ten per cent of jobs in the previous five years
- Eighteen per cent of Head Contractors had not been paid for between 6-20 times in the previous five years
- Four per cent of Head Contractors have lost over \$500,000 from non-paying Clients in the previous five years. Although sixty six per cent of those with non-paying Clients lost less than \$50,000
- In sixty five per cent of instances that Contractors received no payment from a Client, they had no security payment provision in the contract.

It is evident therefore that payment issues still exist within the industry (Ramachandra & Rotimi, 2011). Whilst the Branz research comprised primarily Main Contractors, it could be surmised that the Sub-Contractor sector is still vexed by the same problems. In addition whilst the CCA provides a process for speeding up dispute resolution some of the procedures and processes laid down in the CCA itself have now become the target of disputes contributing to further disruption, delays and costs (Ramachandra & Rotimi, 2011).

5.7 DISCUSSION & SUMMARY

The New Zealand construction industry suffers many of the problems that exist overseas. A low cost culture drives the industry, with little attention to consider viable alternatives. Ramifications of this mind-set not only impact upon the Client and the quality of the finished project, but are also to the detriment of the industry as a whole. Low, unrealistic margins amongst other issues forces Contractors to make questionable ethical decisions that impact upon quality and performance, and limit investment into research, development and training.

Many factors underpin the inherent inefficiencies within the industry, none more so than its fragmented nature and the traditional competitive tender with the assumption that the lowest price equates to the best value. The subcontracting sector serves as the backbone of the construction industry, their relative importance is largely unrecognised and their expertise underutilised.

It is widely accepted that it is the Client that makes the procurement decision. Inexperienced Clients often seek the advice of Consultants or Architects in regards to procurement decisions. Interviews with Architects in New Zealand have highlighted their propensity to direct Clients down the traditional tender route, when alternatives are available. They are often reluctant to even advise a Client to collaborate in a minor way with a Main Contractor by negotiating a price for a project, primarily because of potential reputation damage if a recommended contractor fails to perform. On the rare occasions that Clients do enter into negotiated contracts with Main Contractors, the Main Contractors for the most part continue to procure the project via Sub-Contractors down the conventional traditional tender route. Experienced Clients in some instances are more likely to negotiate with a Main Contractor, especially if they have an historical working relationship. The New Zealand government, as probably the sector's largest Client has an opportunity to guide the industry, but are hampered by the need for transparency and continue to promote, with a few exceptions, competitive open tendering as the default procurement route (Govt, 2006).

Currently it would be very unusual for construction projects in New Zealand to meet budget expectation. Some of the reasons for this are easily explainable, the simplest of which is the budget was unrealistic in the first instance. Many Clients seek advice from an architect for a

project concerning the potential cost. Whilst Architects are usually good at designing a building, they are not quantity surveyors accustomed to providing detailed estimates of costing, hence preliminary cost estimations are often awry. In addition, competitive tendering incentivises both main and Sub-Contractors to seek flaws and errors within documentation to improve their already low margins, whilst at the same time generally installs a random selection of sub trades together on a project with no incentive to work cooperatively with each other or the Main Contractor. Each is often focussed upon completing their individual task, attempting to make a profit, and with one eye always on the next project. For the Main Contractor this serves to increase the cost of management and control, often leading to project time overruns.

Architects and Clients routinely employ the services of specialist Consultants but they negate the opportunity to realise the expertise and knowledge of the Sub-Contractors. This is partly due to current procurement methods not capturing their input in sufficient time to be incorporated in the design. Sub trades are recruited very late in the construction process, post tender, with insufficient time to enable them to offer innovative ideas and potential cost reductions.

Another contentious issue with Sub-Contractors in New Zealand is the industry's insistence on withholding retentions from Main Contractors and Sub-Contractors. Ordinarily if following the conditions of NZS3910 in respect of contract works 10% of the first \$200,000 will be retained, plus five per cent of the next \$800,000 plus 1.75% of any amount in excess of \$1 million with a maximum aggregated amount of \$200,000 (NZStandards, 2003). Hence under this regime a \$2 million project would see the Client retain \$77,500 upfront. However, the value of a project feeds up through the supply chain via the Main Contractor, and ninety per cent of the value is with the Sub-Contractors. With each sub trade package unlikely to exceed the ten per cent, \$200,000 retention threshold, and \$1.8 million of this project attributable to Sub-Contractors, then the Main Contractor theoretically retains \$180,000, of which only \$77,500 is held by the Client. This additional \$102,500 often supports the Main Contractor's cash flow, and it becomes difficult for Sub-Contractors to recover when it becomes payable.

The predominant use of subcontracting companies within New Zealand construction has largely come about because of the potential flexibility it creates for Main Contractors, whilst mitigating their risk and reducing overheads. In other industries such as manufacturing,

outsourcing to other suppliers is used extensively as a means of driving down costs and improving quality. This philosophy, however, is ineffective when applied to the construction sector utilising current procurement models. In New Zealand the traditional tender, driven by the lowest price, is the procurement route adopted for ninety per cent of all construction projects. With such a large Sub-Contractor contingent and significant competition traditional tendering does at the outset produce very competitive tenders. Unfortunately, however, it comes at a cost; transaction costs grow which are ultimately passed onto Clients. Margins are generally so low that Sub-Contractors are incentivised to cut corners and seek additional compensation through variation orders. Very often poor workmanship leads to defects upon completion and on-going remedial works. It also promotes adversarial behaviour, and creates numerous disputes between Main Contractors and Sub-Contractors, which prohibits on-going cooperation.

Main Contractors, who themselves work on unrealistic margins, are often obligated for economic reasons to recruit Sub-Contractors either unfamiliar to them or who they ordinarily would not choose. While it is common for a Client to evaluate the capability of a proposed Main Contractor, the same Client will negate to evaluate the proposed Sub-Contractors, who, in reality will be constructing their building. Often the only qualification required of a Sub-Contractor to win a project is the lowest price, which comes with associated performance and cost risk.

Construction projects procured in New Zealand ordinarily follow one of three routes; traditional procurement; integrated procurement or the management orientated approach or a variant of one of these at least. The vast majority of projects procured either internationally or within New Zealand follow the traditional route, ensconced within the competitive tender, driven by cost, whereby the lowest tender secures the project. This procurement method is known to carry inherent risks; often the best price does not produce the best value outcome. Projects routinely run over time, over budget and are plagued by defects and disputes between parties. The risks of traditional procurement are partly attributable to the large numbers of Sub-Contractors, their bidding strategies and the competitive environment this creates, in conjunction at times, with some contentious business practices.

CHAPTER 6

FINDINGS

6.1. INTRODUCTION

This chapter presents the substantive theory of Convenient Immorality, a result of the integration, synthesis and amalgamation of themes emergent of a constructivist grounded theory approach into procurement in the construction industry. The chapter commences with an explanation of what Convenient Immorality is and outlines the importance of its relationship and association with competitive tendering. It subsequently discusses many of the reasons why the construction industry has maintained this traditional procurement route. The discourse focuses on the key themes drawn from interpretative memos with theoretical integrity supported by the data generated.

Convenient Immorality emerges as a response to industry contextual and economic factors and the necessary reactive and proactive organisational responses required to facilitate and sustain business objectives within an environment of intense competition. It is underscored by relationships often based on mistrust, opportunism, power and influence which reveal themselves in the form of organisational strategic decisions and behaviours that are subsequently described and integrated as the chapter progresses.

6.2 Convenient Immorality

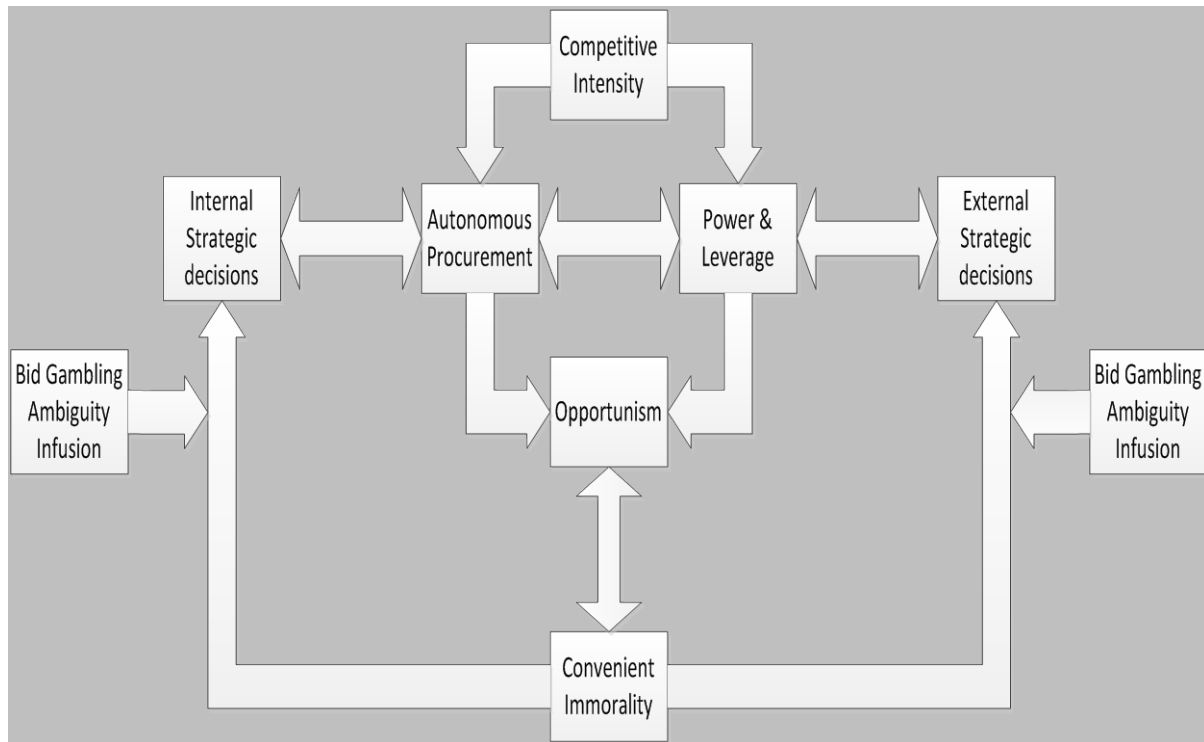
The concept of *convenient Immorality* (CI) is the key core variable to emerge from the many and diverse interviews undertaken during this study, that best serves to explain 'what is going on', within construction procurement (see Figure 6.1). CI is both influenced by, and influences several facets of organisational behaviour pertaining to the procurement of construction. It is seen to be either a proactive and strategic organisational business decision, or alternatively a reactive and rational choice, or even both.

CI is best described as the behaviour that arises as a consequence of individuals and organisations consciously deciding to forego compliance with the cultural norms, rules and standards that constitute what would otherwise be considered to be 'normally' acceptable conduct within the process of construction procurement. Behaviours, exemplified by actions that internal and external industry stakeholders would construe as being either unethical or

immoral. For most, such responses are merely an isolated matter of business convenience or necessity, not necessarily extending to include all or any other organisational business functions and processes. CI is both a cause and consequence of various organisational strategic approaches that at times may be initiated in response to procurement decisions. Business decisions that are themselves often influenced by the relative positions organisations hold within the hierarchy of conditional or unconditional supply chains.

The most significant antecedent of CI is the adoption of the traditional or competitive tender as the preferred procurement route. Although routinely viewed by many to secure the most competitive price for a project it retains many well documented negative consequences for not only the quality of the final project but also for members of the supply chain. The focus on minimal cost, combined with the extremely low barriers to entry associated with some sectors of the industry, has a dramatic effect on increasing competitive intensity. In response to increased competition, fractions of the industry and especially those organisations reliant upon bidding to secure on-going employment, have developed numerous reactive and proactive strategies to mitigate the risk that increased competition presents to their own organisational success.

Figure 6.1 Drivers of Convenient Immorality defined within a context of Inter Organisational Mistrust



6.3 WHY TRADITIONAL TENDERING REMAINS PREVALENT

It has long been accepted by those working within the construction industry that some performance related issues can be directly attributed to the almost ubiquitous traditional tender procurement route. Yet any attempts to introduce alternative approaches over the years have met with limited success, with minimal if any real uptake (see Figure A1.5, appendix one, for a summary of the key themes pertaining to alternate procurement routes to emerge from interviews). The procurement decision is made early in the construction process, being predominantly driven from the head of the supply chain. Therefore understanding the drivers of the Client's motivation to adopt this method goes some way towards explaining its dominance.

Clients can generally be categorised as belonging to one of two groups, those experienced in the procurement of construction related projects, and those that are not. Experienced Clients procure construction regularly and have an understanding of the procurement and construction process, often maintaining in-house construction related expertise. For the vast majority of Clients however, procuring new construction is likely to occur infrequently, hence they rely heavily upon the guidance of independent experts to design and procure new construction works.

The New Zealand government, an experienced Client, tends to procure all major projects via a traditional competitive tender, likely out of a requirement to demonstrate transparency and fairness. However, some very experienced Clients do negotiate contracts or utilise other alternative procurement methods, but it is still evident amongst experienced Clients that the traditional tender remains heavily favoured and largely entrenched. For those Clients with less experience their decision to opt for a competitive tender is often based upon the expectation that it will achieve the optimal price and value, or merely ignorance of other possible approaches.

It is a real sense that the owner is getting a fair value for their money.

Certainly in a government sector type situation, we have to go to tender. There is no choice. In the private sector it's obviously more open to negotiation. Generally most Clients would assume that going to tender would be the best way so they would take some convincing not to go to tender.

Just habit. Like it's just, as I said earlier on, the industry is just so geared up, so used to, and they've got such a mindset around tendering and that's led by a lot of our government departments. Our Council, bless them, they are still in a very, very traditional prescribed tender cost driven process and until the big organisations actually change the way they work and I think until we have probably some better margin and profitability in some of the developments we're doing, cost is always going to be a big driver.

What's the alternative option for the tender systemI don't know what the real answer is? It's the nature of the beast that we live with.

You know you've got a competitive price; you've got the best price. From a Client's perspective you've got the best price on the day. We're still in favour, in many cases, of this approach.

As Architects, what we do find however is the process of competition; it's something that we grow up with for a start. Secondly, it really helps us stay on our game.

A tendency exists for most Clients to employ independent Consultants and Architects to design and manage construction work. It is somewhat natural therefore that their expertise and input invariably assists in guiding decisions pertaining to the adopted procurement

route. During interviews, many of these Consultants by their own admission conceded that they often influence a Client's final procurement choice, more often than not by recommending they follow a traditional competitive tender. For some Consultants this preference comes from a belief that this approach is in the best interests of the Client, and for others it is derived from the comfort and convenience of familiarity.

.... as an example we might have a Client who says I'm told we could approach a project manager and we could get them to act as a contractor and call all their subs' prices and what have you and I'd say to them please don't do that. I'll do a report on the best methodology, comparing that and the pitfalls of that. I've done this for school boards for instance, comparing that system versus the open tender system. As a result of that the board has actually decided at a very formal level and they might have even had an approach from a project manager or a builder, so they've got clearly the builder preferring the negotiated route and I'm saying no, the tendered route and they have gone with the tender route following almost a formal process.

Another contingent of Consultants exist, however, that promote the traditional competitive tender to Clients, because of the perceived risk to their own businesses posed by proposing any form of alternative procurement that substitutes competition for negotiation. While Clients negotiating contracts with a preferred Main Contractor can involve an initial cost premium, other costs such as those related to additional works and variations are said to reduce, as to is the quality of the finished build. It comes as a surprise therefore that this type of procurement contract is not more prevalent in today's construction projects. The reason for this was partly answered during the course of interviewing participants for this study. It became evident that Consultants were wary of propagating a perception within the construction community of any type of behaviour that could possibly be construed as being inappropriate and thus potentially leading to reputational damage.

Of course, if you negotiate and recommend a particular builder and this has happened occasionally in the past, what if a builder, what if he cocks up on this job and he doesn't deliver, and you have recommended him? That can happen with your open tenders, but somehow if you recommend someone, you are a bit more dependent on the integrity of their whole performance really.

It's an industry standard so it's still generally accepted as being a reasonably robust model. It basically promotes us as being reasonably impartial and that a Client goes to tender and is not then influenced or is not coming back to us and saying well perhaps you have influenced this situation because you've had a relationship with the contractor. It's a good way of us standing back and seeing what the market delivers.

The Khalfan, McDermott and Swanns (2007), study attributed the importance of organisational reputation within the construction sector to the size and closeness of the industry. This is an industry that is highly networked wherein actors, although from different organisations, frequently need, rely upon, and work with the same people across many different projects sometimes for many years. They argue that reputations signal trust to working associates and as such remain a valuable asset necessary to instil confidence in parties considering any future or on-going working relationship.

Architects especially, for most part subscribe to a code of ethics and rely heavily on promoting a professional image that demonstrates integrity and trustworthiness. They can ill afford any type of behaviour that questions their morality. As such it appears that most prefer to suggest procurement practices that alleviate, or at least mitigate the likelihood of this occurring. Undoubtedly they have influence over Clients' decisions, but many choose not to suggest alternative procurement options and demonstrate a reluctance to appear to favour any individual main contracting organisation. There are three reasons for this behaviour. First, because alienating Contractors may have on-going implications when attempting to secure their services in future. Second, because Architects are exposed to a degree of risk and damage to their reputation if a contractor recommended by them does not perform adequately on a project. Third, by adopting traditional competitive procurement methods, Architects are seen to be - and believe that they are - promoting fairness, equitability and transparency. The reality however is somewhat different and many strategies are implemented by organisations throughout the supply chain that make the veracity of these objectives questionable.

Most of our Clients just know the inherent benefits of the tender process and invariably you'll stitch yourself into a bit of a corner trying to negotiate that with them.

We've had a few house Clients who have asked to suggest one or two Contractors. So far we've never had the situation where those Contractors have not performed. But yes, it is a risk.

Does the tendering just give them that opportunity to say look, well we gave everyone a crack at it? This is the best price that came in. This is the team and that's the only way. So you can see why it still is favoured from that perspective because it's just that sort of transparency, but is it the best way to deliver a project? That's questionable.

It is somewhat questionable therefore as to why Architects persist with recommendations to competitively tender, when objectives for fairness and transparency are seldom achieved. One answer to this question is that they remain remote from the functional financial aspects of compiling and submitting tenders and so are unaware of the behaviours inherent in the supply chain. Another possibility is that they are conscious of many questionable bidding practices but choose to ignore them. Indeed is it any of their concern, or are they in anyway accountable or responsible? Regardless, however, the resultant practices implemented throughout the supply chain do have consequences for the Client to whom they are ultimately responsible to.

While all of the aforementioned reasons contribute to maintaining the dominance of traditional competitive tendering within the construction industry, it could be argued that their antecedents rest in the complacency of the deeply rooted industry culture, and the actors within it. In some instances, such as those Architects reticent to promote alternative procurement routes, the culture of the industry has become a convenient shield to hide behind and justify their position.

It has been tried and tested over a hundred years.

I guess it's just tradition isn't it really. You assume you're going to get the best price, the lowest price.

It's just an accepted way of doing things now.

It's just the culture of the industry I suppose.

It's almost like it's a given that the competitive route is traditional and that's the default.

Most Contractors within the industry accept without question the procurement of construction by competitive tender, viewing it as the cost of doing business. Clients remain understandably cost focussed, and perceive traditional tendering as a means of obtaining the best value for money, combined with the security and assurance of a fixed price. Although other procurement routes would also provide this financial safety net, they are rarely utilised. This may in part be explained by a perception that the industry is untrustworthy, or unscrupulous, as one respondent alluded to:-

The whole industry has got a very bad reputation for ripping people off and the Clients think that the only way they can get comfort that they are not being ripped off is to do the tender process.

To overcome this broad lack of trust Clients rely upon the competitive tender to identify the market value of constructing a project confident that it is an approach that will elicit optimal value.

Unfortunately, that's been a mentality that has been ingrained over a number of years, far exceeding the amount of years I've been in the business. It's also reinforced by local government, by large corporates, by central government in regards to the way they do a procurement process. So you've got this general psyche which basically says tender is best, whereas the market that actually delivers the product and the people who are associated with it all clearly say that it is not.

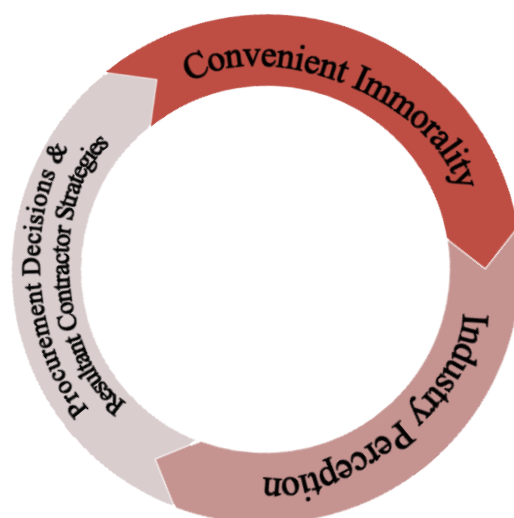
Of course Clients are often left disappointed when costs subsequently escalate and overrun as the project evolves and nears completion as a consequence of the shortcomings of competitive tendering, which often only serves to reinforce the long established perception that the industry is untrustworthy.

6.4 THE CYCLICAL NATURE OF CONVENIENT IMMORALITY

A perception exists within the general public as well as the wider construction industry that ethical behaviour within the industry is poor. A broad distrust exists and a belief that many members of the industry are opportunists. The relevance of the truth pertaining to this belief is inconsequential, as it is ultimately the reality as seen through the lens of decision makers that determine the approach taken to procuring construction. Historically construction projects have been procured by competitive tender, with a view to obtaining maximum value. However, this particular procurement route has, over time, rightly or wrongly also become an acceptable means of demonstrating transparency and therefore by association trustworthiness. As such it has bred familiarity to such an extent that it has continued largely unchallenged as the adopted norm for in excess of ninety per cent of procured construction and become heavily ingrained within the industry culture.

Regardless of how the decision to elect the route of competitive tendering has been made it has become the mechanism by which the supply chain is recruited, and by which the cost, at least initially, of proposed projects are determined. At the same time it has also become the stimulus for many of the strategies developed by the contracting fraternity that play out over the life of the procurement and construction process. Many of which would be considered by not only the public, but also the industry itself, as being unethical. Nonetheless they form the basis of the concept of Convenient Immorality.

Figure 6.2 Cycle of Convenient Immorality



Logic suggests therefore that poor perceptions of industry behaviour are borne, in the first instance out of facts, which no doubt overtime become embellished as they are retold, eventually becoming distorted remnants of the reality that they purport to represent.

Nevertheless, they are the genesis of the decision making process, which is derived often from mistrust and the need for transparency. This subsequently promotes both defensive and offensive strategies amongst Contractors, resulting in the immoral and unethical behaviour that drives public perception, thus preserving the cyclical nature of convenient immorality (see Figure 6.2).

6.5 COMPETITIVE INTENSITY

Porters Five Forces framework for industry analysis (Porter, 1998) is a useful representation of many of the factors present within the construction industry that engender the intense competition that currently exists. It is relatively easy to enter the industry at some point and for a very minimal cost. Buyers (Main Contractors) being very few in comparison to suppliers (Sub-Contractors) are price sensitive and have a relatively high degree of power as they are usually solely responsible for supply chain recruitment. Suppliers are numerous, although generally small in size, and provide for the most part generic services that remain readily replaceable or substitutable. Moreover however, other influential factors such as the characteristics of Clients, industry drivers and a propensity to competitively procure projects come to the fore (see Figure A1.4, appendix one) as antecedents of competitive rivalry. And whilst perhaps attributes and features merely idiosyncratic to the construction industry, they nonetheless serve to exponentially increase competitive intensity in the sector.

In many industries the logistics of the process of buying and selling is relatively simple, usually being conducted between agreeable parties. In construction procurement, under the framework of a traditional tender, buyers are seeking to acquire the services of a supply chain to work alongside, with members that may at times be averse to working together. The mechanism of the traditional tender serves to identify the most competitive or lowest cost obtainable to construct a project. Largely by capitalising from, and leveraging off, the significant and vastly inequitable balance of power that buyers (Main Contractors) hold over lower echelons of the supply chain.

There is a natural tendency for individuals or organisations to prefer to employ or work for those they are familiar with. At times familiarity derives from a previous working relationship or merely because of a positive organisational reputation. In essence this desire to work with such individuals is not borne solely from the fact that parties have a previous relationship, moreover, it is likely to arise from a sense of trust that the previous relationship has created. It follows therefore that those recruiting members of the supply chain feel a greater sense of security if they can freely control and select the parties they wish to employ. Similarly those who are seeking to be employed would prefer to work for organisations they trust.

6.6 TRANSITIONING POWER WITHIN A HIERARCHICAL SUPPLY CHAIN

Data analysis revealed that two distinct stages exist within the construction supply chain reflecting the status of the procurement process. Prior to contract award, when the supply chain is conditional (Figure 6.3), and post contract award when the supply chain is unconditional (Figure 6.4). It emerged however, that for many a third stage in the process that can affect a large proportion of organisations. From the perspective of a Client or their representative a contract is normally awarded at such time that a bid from a Main Contractor has been accepted and contractual terms agreed upon. At this juncture, however, interview respondents indicated that those subcontracting companies responsible for undertaking the majority of construction works have not ordinarily been contracted. Albeit that many of their prospective bids have formed the basis of the successful Main Contractor's submission. Nevertheless, they remain in contractual limbo, reliant upon their ability to secure the relevant contract from the company contracted to complete the works. In essence this is another stage of the procurement process, such that although the Main Contractor has been awarded the contract, he has not yet formally recruited members of the supply chain (see Figure A1.3, appendix one, for the source of actors power).

This is a period within the procurement process when numerous interviewees contended that the relative power of actors is clearly imbalanced. This imbalance is far more than during the initial stages of the tender process when Main Contractors are heavily reliant upon Sub-Contractors to aid in the formulation of their bid. Ordinarily it is also the time that contractors can elicit an indication of market prices. Moreover the power to leverage and negotiate during this period predominantly resides solely with the elected Main Contractor who may have won the contract in the first instance by allowing for little, if any

margin for profitability. As such securing additional reductions from the costing used to formulate their winning submission immediately improves their financial position, usually to the detriment of Sub-Contractors. Furthermore, Main Contractors remain free, leaving aside any moral obligation, to negotiate with all or any Sub-Contractor, not only those organisations that forwarded bids used to secure the contract.

Upon determining and contracting the subcontract companies (Figure 6.5) necessary to complete the required construction services an inequity of power often still pervades contractual relationships between main and sub-contracting companies, although now with some degree of fluidity. No longer is power a static attribute residing with only one party or the other, nevertheless it is often an arbitrary tool used to facilitate individual objectives often driven by organisational morality.

Figure 6.3 Power Vs Hierarchy, Conditional Supply Chain

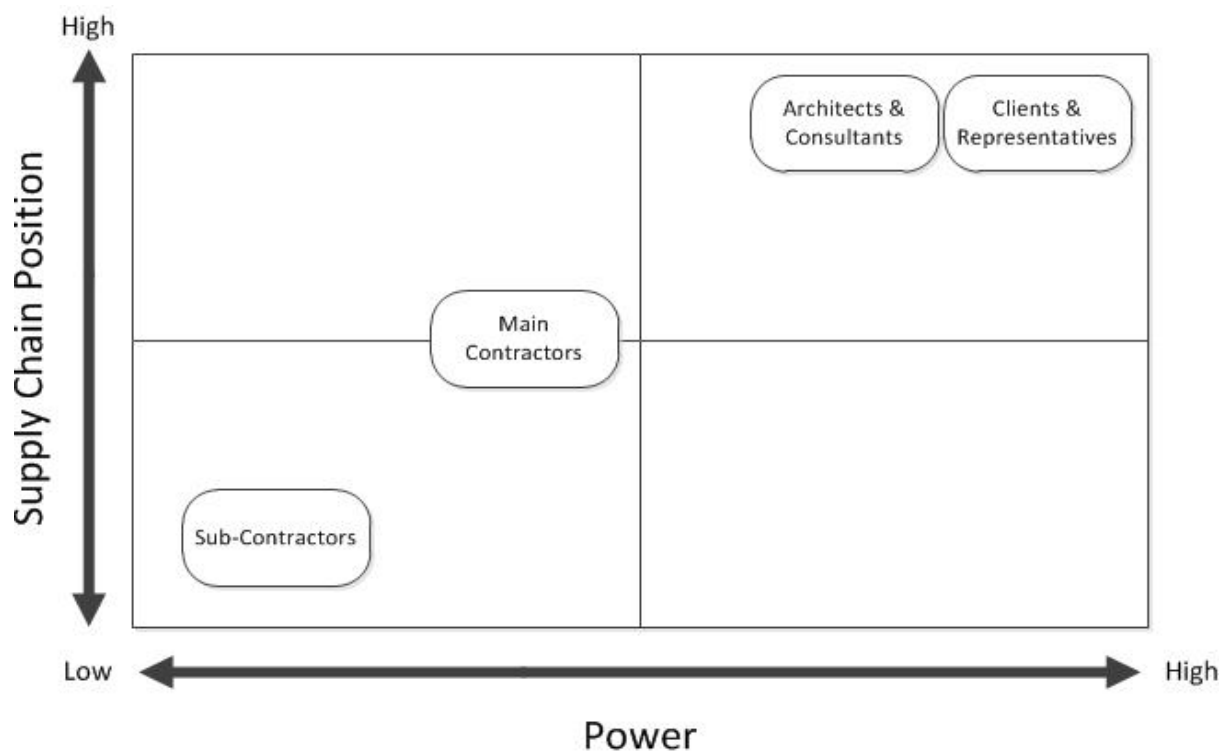


Figure 6.4

Power Vs Hierarchy, Unconditional Supply Chain

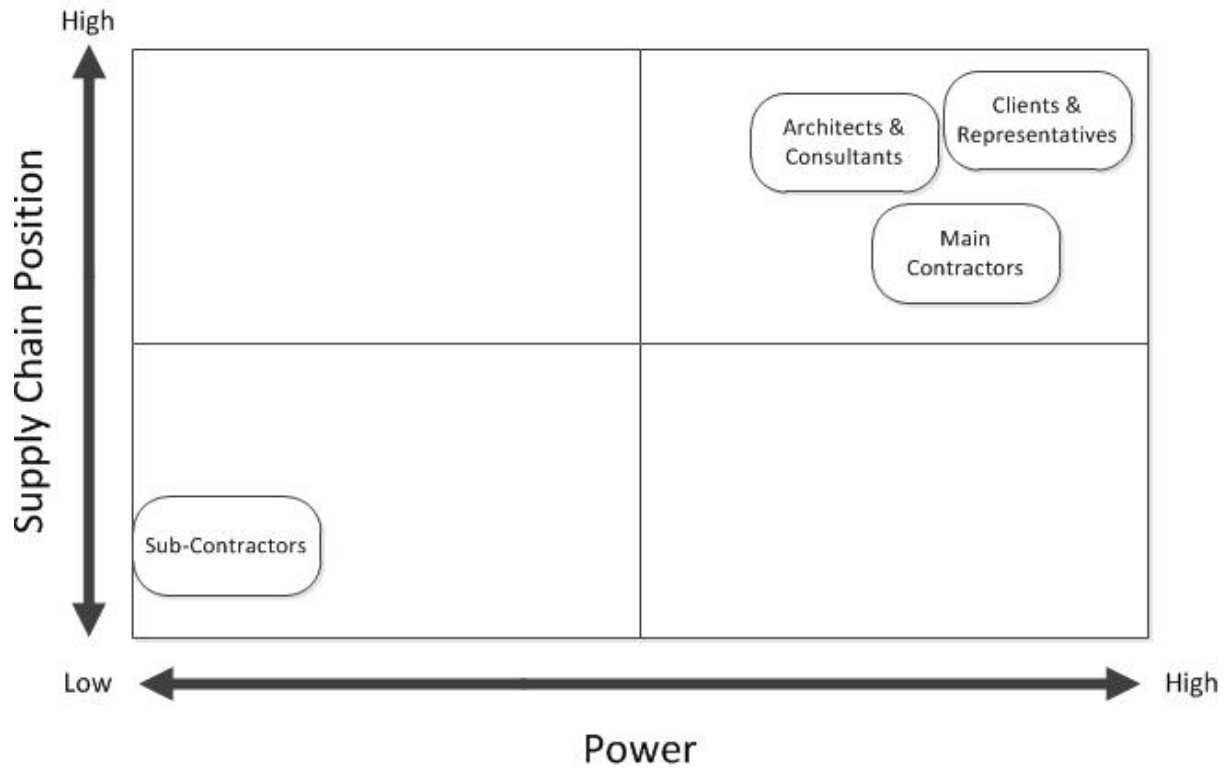
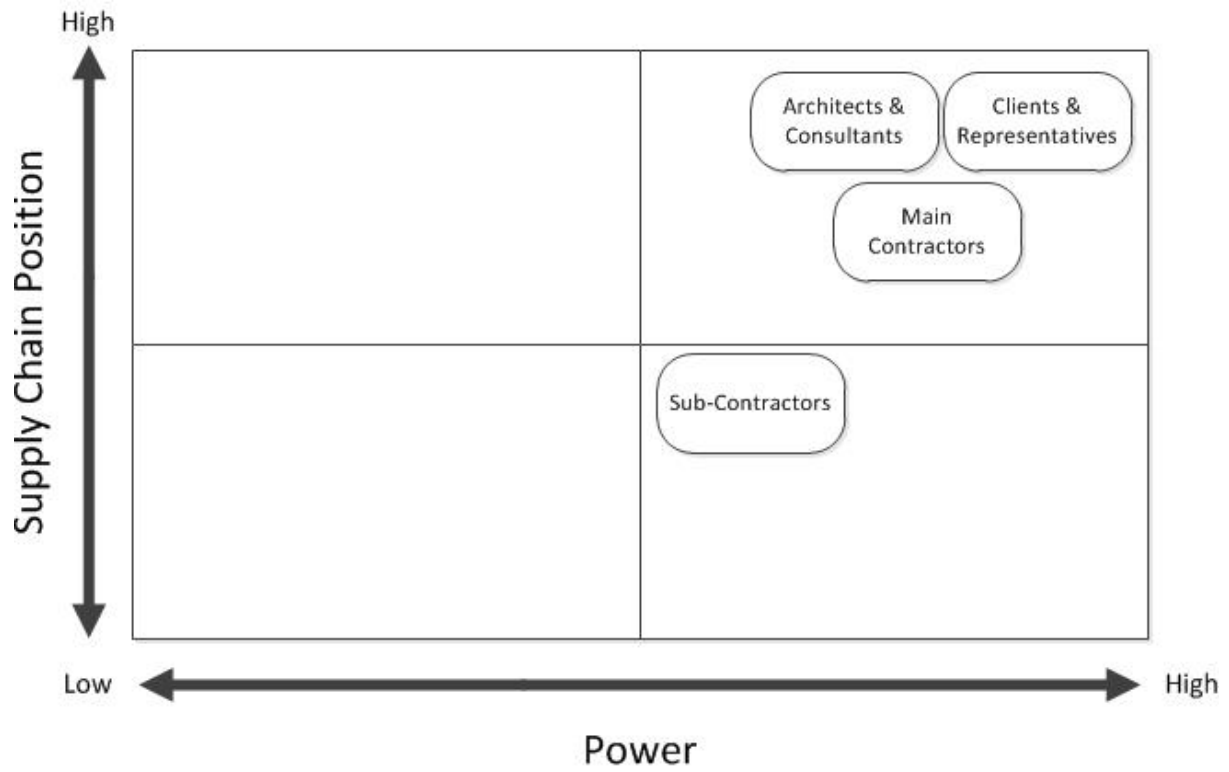


Figure 6.5

Power Vs Hierarchy, Recruited Supply Chain



6.7 SELECTION CONTROL

Selection control is the ability for organisations to freely choose the Contractors they wish to employ, or alternatively be employed by. At times this concept is demonstrably absent within the construction industry. Furthermore, even when its presence is evident its existence can often have detrimental consequences for members of the conditional supply chain. Within the construction industry the underlying rationale for recruiting members of a supply chain is predominantly price. The traditional procurement model sees numerous Main Contractors (because of an inability to individually supply all the necessary services required for a construction project) attempting to develop and submit bids for projects by drawing upon the most competitive pricing elicited from a plethora of competing sub trade organisations.

Organisations ordinarily maintain a preference for working alongside companies of their own choosing. However, in situations such as the one previously described, the overriding need to select supply chain candidates based purely on the competitiveness of their accompanying bid, means that it is often not commercially viable or possible for these preferences to be adopted.

A conventional procurement scenario would see up to five or more Main Contractors being asked to submit a tender for a potential construction project. All five of whom would subsequently attempt to formulate their tender by requesting submissions for various aspects of the intended works from specialist sub-contracting companies. It is not unusual for Sub-Contractors to submit prices to all Main Contractors, whether requested to or not, indeed this is more often the norm. As such each MC will be aware to some extent of the range of prices that his competitors have received that support their tender submissions. MCs are not necessarily obligated to accept any bid, however they remain conscious of the fact that their competitors are likely to use the most competitive Sub-Contractor's price, or risk being uncompetitive. Similarly, they too are under some pressure to adopt the same practice.

The other one would be rogue Sub-Contractors. Unfortunately, tenders are 90% weighted towards our price delivery and you may get a Sub-Contractor which has been approached by one of the other Main Contractors, they may deliver a very

cheap price. If you haven't dealt with them before, it becomes quite a risk to actually take that price, but you have to, to achieve the lowest common price structure. So what ends up happening, it means you are putting forward a bid where you actually may not have full faith in your ability to deliver at an acceptable level.

We are frequently in a situation where we are submitting a tender, there is a very cheap price from one of our Sub-Contractors and we are in a price-weighted environment and we know by selecting that price it will improve our chances of getting the tender, but we know the cost of administering the Sub-Contractor will exceed the margin that we are going to make out of the project. That becomes quite difficult because you are in a situation where if you do not use that price, you most probably will not get the job.

It is at this juncture that the control for the recruitment decision whilst still effectively left to the discretion of individual MCs, is influenced by the unknown yet anticipated actions of their competitors. Many at this time are coerced into accepting tenders from Sub-Contractors that they would not ordinarily employ through fear of being competitively disadvantaged.

The margins are so small that we are forced to use their price, we don't want to be left in the lurch, and the same is true when we get unsolicited tenders from companies that we may not even know. Some of them may turn out to be okay, but others not, hence we may then be forced to talk to others that have quoted to see if they can match the price.

That's one of the worst situations with tender pricing, is that we often get forced to use Sub-Contractors that we don't want to use.

It's just the game. You are just tendering, if you have a tender business your whole game is to get on the list and just play the averages.

Others, however, will often revert to their *pet* Contractors (who have a higher price) and seek to mitigate any commercial financial risk by securing a discount amounting to an equivalent or lower value than the unfavourable, yet competitive Sub-Contractor's bid. This strategy achieves the desired objective of maintaining a competitive position whilst securing the services of a preferred and known contractor.

Sub-Contractors generally supply tenders to all Main Contractors known to be bidding for a project. This strategy maximises the likelihood that their submission will be successful, if by chance they submit the lowest tender. Usually Sub-Contractors exhibit a preference towards working for preferred *pet* MC's whenever possible. SC's are reliant upon Main Contractors as the ingress point to win projects before they are in a position to be guaranteed any financial rewards, even if their tender happens to be the most competitive. They are effectively impotent when it comes to influencing the selection of Main Contractors. Nevertheless, some offer covert agreed discounts to selected MCs in the hope of improving the possibility that they will win the desired project, thereby indirectly enhancing the likelihood that their bid is also successful.

Supply chains procured by competitive tendering can be effective in *disempowering* some of its members, by withholding their ability to dictate their own inter-organisational procurement relationships. Competitive pricing carries a significantly higher weighting than any other criteria when Contractors are evaluating tenders submitted to them by their Sub-Contractors and essentially it is the most common criterion by which a contractor's subsequent completed submission will be judged. Economic coercion such as this continues to encourage and promulgate the adversarial relationships that the industry is renowned for and hinders the potential for inter-organisational trust. The natural consequence of which is that each party assumes the other will act opportunistically to maximise their own interests and will have developed business strategies accordingly.

6.8 RATIONALISING OPPORTUNISM

Opportunists seek to take advantage of circumstances to serve their own interests without regard for any consequences and related affects their behaviour may have upon others. Doubtlessly scope for opportunistic behaviour exists within most industries. Within the construction industry, however, its presence forms the basis of numerous strategies and behaviours enforced to achieve some degree of competitive advantage. It is not unusual for some within the industry to set aside any thoughts and consideration for what may be the underlying and widely expected ethical norms, as the compulsion for self-interest is paramount. Albeit they remain aware that associated parties may well be negatively impacted by their actions, leading to a degradation of relationships, this is for some an acceptable level of collateral consequence.

The market is very competitive and everyone is looking for an edge. I do not think that organisations consciously intend to act unethically; often it is as a result of circumstances.

Unquestionably the vast majority of organisations working within the many varied sectors of industry do not seek acrimonious relationships. Rather, it tends to be that the opposite is generally true. It is likely therefore that for organisations to be willing to accept such a negative influence on relationships that the particular competitive environment within the construction industry may be peculiar to it. Indeed the propensity for the industry to focus on procurement based upon the model of traditional competitive tendering, with poor contractor selection policy and control would suggest that this is true. The industry is propagated by small businesses with extremely low barriers to entry, working on small profit margins, and eager to optimise their own positions.

Everybody is only working for themselves not for the project. That's the fundamental thing. You have a negotiated project, you work for the project. If you have a tendered project, you work for yourself.

If we thought they act unethically then so would we. At other times if we were desperate for a job, or if we feel the people we were dealing with, such as Sub-Contractors were not competent, we would then try to negotiate with someone else. Another example would be when we thought a Client with a reputation for always using the same builders was just using us for a price, and then maybe we would take some action.

It is these characteristics of the industry that in part allow many of its proponents to internally self justify and rationalise opportunistic behaviours that ordinarily many of them would otherwise accept as being behaviour incongruous with accepted ethical norms. Moreover, however, many protagonists of opportunism such as some Sub-Contractors justify and rationalise their actions by drawing upon the power inequities evident in *ingressing*, and the perceived *immorality* of others working within the industry.

6.9 INGRESSING

The concept of *ingressing* alludes to the ability of one party to control and influence other parties' attempts to become members of a proposed supply chain.

The funnel effect of traditional tendering sees many Sub-Contractors bidding for projects that can generally only be accessed through a relatively small number of Main Contractors. Individual Sub-Contractors are in the first instance competing between each other to submit the most cost effective compliant tender. The reality is that for them to be ultimately successful they have a single point of ingression into the supply chain. It is necessary for their bid to be accepted by Main Contractors and for the Main Contractors' subsequent bid to be accepted by the Client. Up until this time, both intra and inter-supply chain competition continues to exist.

Ingressing is the Main Contractor's attempt to mitigate some of the risk associated with the tendering process. With its objective being to generate a competitive tender constituting bids from preferred supply chain members, usually those that they have previous experience of working with. The focus of Main Contractors is predominantly and necessarily on cost during the tender stage. If this cost driven objective, however, can be aligned with preferred suppliers who possess a willingness to collaborate with each other then it is possible to derive numerous positive benefits.

It is perhaps understandable that Main Contractors would prefer to employ Sub-Contractors known to them, with whom they preferably maintain some degree of a pre-existing relationship with, if for no other reason than a level of trust will already exist between the two parties. Contractors normally solicit bids from sources they consider to be both reputable and reliable. But they will nevertheless also generally receive unsolicited bids from Sub-Contractors who may be unknown to them, or who they would prefer not to work with. From the Sub-Contractors' perspective submitting bids to all bidding Main Contractors increases the slim probability that their bid will secure a project. For Main Contractors this practice ensures that they are aware of the majority of bids in the marketplace for each sub trade service. Having acquired this knowledge, however, can pose problems when compiling their own submission, especially if a situation arises whereby an unsolicited tender was by chance the most competitive one, as exclusion of this bid could result in their own bid being

uncompetitive. But including them, whilst ensuring competitiveness, also carries the associated risk of employing often unknown or untrustworthy Sub-Contractors. Faced with this dilemma some Main Contractors ignore unsolicited tenders and form a tender that is solely based on those solicited from known and trusted sources. Others will include unknown Contractors' bids on the trade summary and include a caveat with their submission that references any concerns. Others will attempt to exclude the trade summary to maintain some flexibility within their tender with regards to definitive supply chain selection. Another group however, and one that most Main Contractors will have belonged to at some point in time, will use competitive unsolicited tenders to negotiate discounts from *pet* Sub-Contractors.

.... sometimes they'll come back if we're not the cheapest and negotiate. They won't tell us the price. They will just give us some clues.

Sometimes if you know the builder or the contractor fairly well and they haven't made a decision yet, if you're not quite there you might be able to adjust your figure or they might prefer to work with you rather than anybody else so they'll say come and see me.

Ingressing in this situation thus enables leverage, as Main Contractors clearly benefit from being in a position of asymmetrical power.

Well what you do is you hand everything over to the builder. So if you've got three builders that's the only time in the contract they've got to be competitive and they're all the same, so they're all going to get a third of the jobs if you're only doing three. Then as soon as they get awarded the job, they're in the power position with everybody, including, if you're not careful, the Client because they can just bombard the Client. If they invest a time in finding stuff, they'll just beat the Client up.

Sub-Contractors have an expectation when submitting bids that the details of their submission remain confidential, and in many instances sufficient integrity exists to ensure this is the case. It is, however, commonplace for Main Contractors who hold good relationships with individuals working within *pet* subcontracting organisations to reveal to them either implicit or explicit indications of competing bids, known as *price shopping*. This assistance often facilitates a negatively skewed negotiation of a preferred Sub-Contractor's

bid. An inequitable balance of power often results in preferred and trusted Sub-Contractors significantly reducing their original bids on the pretext of these being uncompetitive when this may not have been the case.

It's a major problem and it has hurt us because what happens often is a Main Contractor will pick up a job and he will say listen, I'm not using those clowns, I want you to do the job, here's their price. This is what we want you to do it for. If you're given an opportunity, often you will take it.

One of the most annoying ones I think is we'll go in as sharp as possible and then once tenders close, the builder will come back to us and say you can have the job if you drop another 5%. And you know that that margin is going in the builder's pocket, not the owner.

If it goes out to tender, I virtually don't have to send them a price. They'll just put our name in at the best price. They just say you've got this job because we do all their work.

For Main Contractors *ingressing* has financial benefits by enabling the power of leverage, often suffice to elicit discounted pricing from Contractors. Furthermore, it facilitates the recruitment of a supply chain comprised of preferred and trusted Sub-Contractors. For Sub-Contractors *ingressing* erodes margins, but improves their tender conversion rate and maintains on-going relationships with Main Contractors.

6.10 MIRRORED IMMORALITY

Put simply mirrored immorality, a concept drawn from data generated across numerous interviews refers to the propensity of organisations to replicate the ethical behaviour others display, especially if a perception exists that they will be disadvantaged in some way if they do not reciprocate accordingly. Organisations working within the construction industry view themselves for the most part as employing ethical business practices and are loathed to contemplate that the reality can contrast starkly with their ideals. Nevertheless, stakeholders also contest that the industry continues to demonstrate many practices that are in their opinion unethical or immoral; behaviour that in part is explained by organisations mirroring the moral behaviour of contractually related parties.

Mirroring the immorality of others within the construction community is often viewed to be justifiable by its protagonists. It is borne out of a widely held perception that organisations routinely breach what is thought to be good and acceptable ethical behaviour.

Dealing with someone that you suspect is not kosher, we would follow the same path as them. If we thought they act unethically then so would we.

.... but I think if others are doing it, the pressure to do the same increases.

Relaxing normal ethical conventions is not something that most construction related companies (especially the smaller ones) have difficulty with. Perception is sufficient to equate with justification, and unfortunately within the wider industry itself many carry the notion that unethical practices are commonplace, which simplifies justification and therefore continues to further degrade behaviour. As a consequence, in the process, poor behaviour is more likely to become an excusable norm.

While some continue to justify immoral behaviour merely because their peers act unethically, others only become complicit because of commercial pressure.

It just comes down to the bottom line. You've got to be competitive and you've got to do what's necessary within your own ethics I suppose and I suppose that's a bit more relaxed if other people's ethics are down a bit, then you've really got to go a little bit with them.

Relying heavily on the tender market most subcontracting organisations exist by working on extremely small margins, with a modest bid to success ratio of only around fifteen per cent. For many their very existence rests with winning bids at almost any cost. As such they are predisposed to leverage any possible advantage and will readily detach moral constraints if they consider competitors are doing likewise. This also applies to those organisations that companies feel historically have acted with poor moral standards towards them. In such instances retribution for past ethical demeanours can be reason enough to justify one's own immoral actions.

6.11 PROACTIVE OPPORTUNISM

Organisations tendering for projects often implement strategies as a direct response to the competitive environment pertaining directly to the process of construction procurement (see Figure A1.1, appendix one), without holding concern for the effects their strategic decisions will have upon implicated stakeholders. This is the essence of *proactive opportunism*. Wherein opportunistically driven self-serving behaviours reveal themselves within actors emerging as a result of economic pressures to secure on-going income, revenue and profitability.

Proactive opportunism reveals itself during the process of procuring projects, especially those procured by means of a traditional tender. While largely a response to the influence of competition specific opportunity triggers engender the impetus for action. The practice is strategic and similarly undertaken by both Main Contractors and Sub-Contractors alike and is responsible for driving one of three proactive groups of identified behaviours; *bid obfuscating*; *bid gambling*; and *playing the grey*. Similarly however, this type of opportunism also resides behind the reactive strategic behaviours of *price shopping* and *mirrored immorality*. And although generally these practices occur during the tender process, many of their resultant implications do not become evident to associated parties until post contract award.

6.12 BID OBFUSCATING

Whilst not ubiquitous interviews suggested that there is strong evidence to suggest that many in the construction industry intentionally submit ambiguous tenders for projects; ostensibly in the hope of achieving a competitive advantage against other bidding organisations. Bid obfuscating, the practice of purposely submitting equivocal tenders was seen to be practiced predominantly by Sub-Contractors. And is an attempt to elicit an advantage drawn from asymmetrical understanding, or minimal *gatekeeper cognisance*, often combined with poor project documentation, ineffective project management and control, plus insufficient evaluation time. With such a large focus upon tender price, it is those bids submitted by Sub-Contractors that outwardly appear to present the most competitively priced submission that are often favoured by MCs. For this reason Sub-Contractors are at times incentivised to artificially decrease, or provide the illusion that their tender is more competitive than reality dictates.

It pays to just tag everything out and find a mistake in there and say, great, I won't show that mistake.

As Main Contractors, we're in exactly the same position. We want to put as many tags in as we possibly can because we want to keep our price as low as possible

The means utilised to enable Sub-Contractors to reduce bids are generally overt, yet at times they continue to go unnoticed, or are not adequately questioned by recipients responsible for evaluating competing bids. It is commonplace for submissions to include numerous conditions, which may include such things as omissions of specific items, a divergence from original specifications and the substitution of alternative equipment to name a few. The effect of all these actions is that submitted bids are often non-compliant, somewhat deceptive but nevertheless outwardly appear to be competitive and therefore often accepted.

We've got one contractor and Christ almighty almost immediately they get out of their truck they start to mark out the cuts for the asphalt and that and they say, that's an extra. What do you mean? There was no concrete in our plan. A bit of concrete cut in that, you know, but it goes right through the company. I don't know whether they get paid a bonus per extra or something, they might get 20 cents in the

dollar for every dollar they pick up, but it makes it hard because it's all extra work through here to process it and it's all money coming off the bottom because most of it is too niggly to even pass on to the Client.

Non-compliant bids are accepted for several reasons. At times the window that Main Contractors have at their disposal to evaluate tenders is insufficient, as a result of the strategic decision by Sub-Contractors to submit bids just prior to tenders closing. At other times Main Contractors do not understand the terminology used within a tender or the relevance of items being excluded or substituted.

So people put in tags for many reasons. One, so they can have the lowest price on the day because lowest price on the day wins the tender, or lowest price on the day gets you on the list. Then you're in a position to negotiate out the pricing of your tags and because of relationship in today's market, no tender is fair. People then have the opportunity to work through what is the cap price I can push those tags up to?

6.13 BID GAMBLING

The practice of tendering or bidding for construction projects often results in Contractors having to either react to, or adopt strategies that frequently contest risk to reward, in effect *bid gambling*. This is especially evident within organisational interactions pre-contract award when both main and Sub-Contractors are endeavouring to secure work by optimising their own positions. In such situations they not only have financial outcomes at stake, but there is also the possibility of jeopardising on-going relationships.

At times Main Contractors when tendering for work submit bids that include their own estimations of sub contract trade works, rather than rely on the assurance of a Sub-Contractor's bid. Often this situation occurs because of the inevitable time constraints associated with compiling tenders, but also because some Contractors feel sufficiently confident and competent to make an *educated guess* at the likely realistic cost of some readily measurable trade services. Other instances also exist whereby Sub-Contractors price discriminate. That being they submit bids of differing values to competing Main Contractors in the hope of availing a *pet* contractor of a competitive advantage, while at the same time ingratiating favour whenever possible and consequently expanding upon existing, or enhancing and developing new relationships.

It follows that both scenarios potentially hold positive and negative consequences for actors. *Educated guessing* may be overly cautious. Allocating a higher value than necessary to a service (for fear of under estimating) can result in an uncompetitive bid, and the loss of a project. Conversely organisations that allow unrealistically low sums increase the likelihood of achieving a successful bid, but simultaneously erode potential margins. In the event of a winning bid however, Contractors invariably find themselves in a position of greater power and leverage. At which point many often return to the tender market assured of the contract award, and in far stronger position to negotiate pricing with suppliers. Conscious that any further negotiated reduction in costs from the proposed supply chain at this time, can only serve to improve upon previous financial projections. Suppliers, however, are often left in the unenviable position of electing to discount their previous bid or risk their competitors being approached to negotiate.

Low-balling tenders yes. So there is Contractors out there in the market at the moment and some big players that have a very aggressive approach where they go in very, very low having looked through the documents, having looked through the contract with a fine tooth comb and have worked out where they can make additional money and then they will come at you like a bull at a gate come contract award and look to recoup what they think they can on the contract and it's a very, very negative way to work.

Sub-Contractors practicing price discrimination do so primarily because of a pre-existing relationship with recipient Main Contractors and also on the pretext that availing demonstrable financial advantages to Main Contractors enhances their own chances of securing a contract if the respective Main Contractor's bid is ultimately successful. They also offer a reduced price because they perceive some Main Contractors as having more competent project management skills than others. The rationale for such a strategy being that improved site management equates to greater efficiencies and productivity, and is therefore financially prudent. It also, however, requires a degree of trust and confidentiality between parties if it is not to present a risk to the supplier's relationships with other Contractors. Other Contractors are understandably reticent to seek bids from suppliers that are known to purposely disadvantage them, having an expectation that subcontract suppliers provide them with terms equitable with those offered to their competitors.

Traditional tenders that incorporate a bill or schedule of quantities present an opportunity for document manipulation. A bill of quantities is a document that quantifies specific items within each sub trade that require pricing, assuring Contractors that all parties are bidding on a comparable basis. It also forms the basis of financial reimbursement rates for any subsequent claims associated with additional work should it arise during the contract period. It is common practice that completed schedules are not forwarded by Sub-Contractors with the tender submission. Therefore a Main Contractor's evaluation of a tender is often based solely on a lump sum price. Astute Contractors cognisant of reoccurring additions and variations when completing schedules are known to inflate item prices. Conversely prices attached to items that conceivably may at some time be removed from the contract are reduced, so that a smaller accompanying credit is required. Both practices are conspired to optimise profitability, but nevertheless carry a small degree of risk as Contractors cannot be assured that their presumptions will eventuate.

At the end of the day, it takes a while to get a price schedule through and we find it takes weeks and weeks and sometimes months to get a price schedule through or they'll get it through in dribs and drabs.

I had an example where they had possibly assumed that an alternative material would be used and they put in a very low price for the specified one. So when you give a credit, you give back next to nothing and the alternative is priced at the true price.

So if I ever get a scheduled job, my \$40,000 main switchboard becomes \$10,000 because they're never going to take it out.

....go through the schedule and see whether the rates are about right because they will play silly buggers. The classic one is soft spots. We ask them to allow 100 cubic metres for soft spots which means dig out the crap, put the hard fill back in and it might be \$36 a cube, if they think that's a damn good site and it's highly unlikely to happen, they'll price it at \$5 a cube and not \$36.

Well its \$200,000 worth of lights in it. In the schedule there will only be \$150,000 because I know I will be able to make my plugs higher and my lights higher and what have you.

6.14 PLAYING THE GREY

Playing the grey is a concept drawn directly from its In Vivo code and clearly captures and describes the essence of ‘what’s going on’ in the context of construction procurement. Put simply it describes the behaviour of both individuals and organisations’ bidding for construction contracts who purposely withhold knowledge of any ambiguous procurement related issues; or who attempt to imbue a degree of ambiguity into the procurement process. This is conduct played out largely in the hope of garnering a financial benefit at some time during the course of a project if their bid is successful.

I think in a competitive tender, part of my job is finding the grey areas.

It is a practice prevalent at both the level of Main Contractors and Sub-Contractors, often because the standard of tender documentation issued by Architects and Consultants is not sufficiently comprehensive to ensure clarity. This is not intended as a slight on their professionalism, rather as both Architects and Consultants contest it is reflective of, and attributable to, a Client’s short term cost focus. And which at times has the effect of limiting the amount and quality of documentation issued for the purpose of estimating the cost of potential projects.

We’ve learnt from that, so it pays to just tag everything out and find a mistake in there and say, great, I won’t show that mistake.

We’re finding now that documentation coming out is absolutely atrocious because of time and every engineer’s busy, they haven’t got time to detail and they’re just throwing it out there hoping it will be right. At the end of the day, the builder or the owner has to pick up the variations and work out why.

Yes, it’s using inferior product. It’s tagging. Its finding gaps in specifications, especially the more complicated the plant items are.

Organisations bidding for tendered contracts seek every available opportunity to discover a competitive advantage. Further, they can ill afford to place themselves in any situation that commercially disadvantages their bid. As such many are keen to identify inconsistencies or ambiguities that may exist between contract drawings, specifications and schedule of quantities. Such an example could be the specification of a particular product that is not

suitable for its proposed environment. In this scenario, depending upon timeframes, some Contractors may notify the issuer to seek clarification. Others, however, especially if the requisite product is of a higher value will base their bid on the specified criteria, confident that if their bid is successful they can negotiate terms surrounding procurement of the correct item once the contract is secured. At which time their relative bargaining power is significantly greater as they are no longer working within the confines of a competitive environment.

For every competitive tender that you put in you put a bid strategy in place, and that bid strategy is to how you're going to go about winning the project, what you're going to need to do to win it, and so on and so forth. Sometimes your strategy will be such that you'll be aware that it's a crap set of documents or that there are holes all though it, or they have made a mistake over there or whatever, and you can probably capitalise on that downstream.

The Contractors do like to play the game of spotting things that are missing so that they can claim it back later on and keep their price down.

So the risk to it is that you tag things and you look for the grey areas or the risk areas and you exploit them if you're a Sub-Contractor.

With the complexity of construction projects ever increasing the number of specialist sub trades has increased accordingly. Boundaries between associated trades have as a result become blurred, and so to at times have organisational responsibilities, especially if documentation is not specific. This can provide a point of tension, and render suffice justification for some trades to place conditions within bids, exempting some aspects of a project, thus enabling a subsequent financial reduction. This reveals itself as an apparent cost saving when compared with the submissions of their competing peers that could potentially be overlooked by an evaluating Main Contractor when scrutinising Sub-Contractor bids. Undoubtedly this presents a real risk to unwary MCs not applying the required degree of due diligence.

The problem that we have sometimes is that you put a tender in for a job and the builder is only interested in the price. That's all they are interested in because their tender is closing and they just need all their subbies in. They are going through fire,

yes, yes, put a price in; use that one. They don't even read the tender. We had a perfect example just recently with a job we tendered. It was a reasonable sized job, \$400,000 and they were only interested in the price. They didn't even read our tender letter and now we are arguing over variations and they're saying well you should have allowed for it. I said it wasn't in the spec; we tagged it in our tender; you never quantified our tender; don't come to us so now and we are getting the proof.

You can purposely leave things out, tag certain things, which is a common one. Or if you know that the specification is missing something, you'll go in at zero margins because you know you're going to get a variation later on.

As Main Contractors, we're in exactly the same position. We want to put as many tags in as we possibly can because we want to keep our price as low as possible

As the vast majority of the value of a construction project rests within the sub trades, it remains beneficial to Clients and Architects evaluating submissions to have some knowledge of the proposed subcontract organisations prior to awarding a contract. It is a common expectation therefore that Main Contractors submit an accompanying trade summary with their bid, which outlines the organisations they intend to employ to undertake the required work. However, while many organisations do, a large proportion of bids are received without the requisite trade summary. In many instances this is a strategic decision and a conscious attempt to delay the appointment of Sub-Contractors. The intention is to extend the period of time available to negotiate possible discounts by not committing to definitive supply chain members.

What we ask for is a trade summary, so at least you've got it set up by trades. First and foremost, we like to know who the Sub-Contractors are so that stops them shopping around. You know if they are shopping around if they're changing their subbie.

Playing the grey is by no means breaking any laws and likely could not be construed as being dishonest either. At best it may be described as *legitimate deception*, which primarily exists for two reasons. Firstly, many in the industry are encouraged or incentivised to act this way as a response to their competitive environment. And secondly, because the operational

practices those potential injured parties maintain facilitate opportunities from which others may capitalise an advantage.

In terms of ethical standards, I mean some of the things that we talk about in terms of our worries with builders and things like that.... It's not unethical, but it's more around the tender process itself and the tender process where you're forced to be recognised as being the lowest price to be considered and things like that. So it's not unethical per se, or descriptively unethical, but what it is, is that you're having to make choices that even you might not think is right.... You know that choice B is the right one for the Client, but you would choose A because the documents indicate A is still acceptable and it's the cheapest price and it's the only way you're going to get it.

Contractors for example could not benefit from ambiguity in contract documentation, if the ambiguity did not exist. Main Contractors availing themselves of sufficient time and technical expertise would identify discrepancies in Sub-Contractors' bids. Clear detailed delineation between sub trade responsibilities would limit confusion and Clients and Architects insisting upon the inclusion of completed trade summaries with all submissions would identify from the outset the proposed supply chain, whilst eliminating post contract award negotiating leverage from Main Contractors.

Multiple consequences of *playing the grey* exist. Clients accept contractor bids with a defined and articulated financial expectation, only to receive subsequent claims for additional costs as shortcomings in the prescribed documentation comes to light.

They've cut all of the meat out and they obviously do their best to try and recover some profit in the job. It will partly be by screwing the Sub-Contractors. It'll be partly by trying to claim every last nut and bolt and screw that wasn't in the specification as an extra.

Sub-Contractors margins are reduced as a result of Main Contractors not supplying trade summaries and by not defining Sub-Contractor responsibilities problems arise as projects progress because required services are omitted. The aforementioned points all have financial implications, but moreover they provide for antagonistic and untrusting relationships which inevitably impact upon time, cost and quality.

6.15 SUPPLY CHAIN RISK

The transient nature of construction project procurement and the associated actors involved invariably brings with it a degree of risk for all stakeholders (see Figure A1.2, appendix one). This section will outline what are considered to be the greatest sources of risk for individual sectors of the industry and address how this impacts upon the project. It will then discuss the strategies that organisations implement to mitigate both real or perceived risk, and how their behaviour influences, and impacts upon other members of the supply chain.

Traditional tendering accounts for at least ninety per cent of all construction project procurement within New Zealand and while it is a process that supposedly achieves the most competitive price to undertake a project, it also brings with it many inherent risk factors that necessitate managing.

Primarily risk is derived as a result of supply chain selection or a lack of *selection control*. But many other factors such as poor documentation or ineffective site management can also increase risk. The source of risk is often peculiar to the relative position of an organisation within the supply chain and the stage of the tender process, but associated implications can most often be categorised as being financial or performance related.

Sub-Contractors engaging in *bid obfuscating*, *bid gambling* and *playing the grey* do so to enhance the likelihood of securing work. For Main Contractors this practice increases the risk that bid evaluation, and contractor selection is compromised resulting in the recruitment of a supply chain incentivised to seek additional compensation from the outset. Furthermore members of the supply chain qualify for inclusion predominantly because they were the most competitive quotation at the time tenders closed. Often time limitations prohibit Main Contractors from not only evaluating Sub-Contractors' tenders, but also the Sub-Contractors themselves. In essence Sub-Contractors are often recruited because of competitive pressures with no verification or evidential support of their technical expertise or competence.

While Sub-Contractors are a source of risk for Main Contractors, Sub-Contractors themselves in turn face significant risks generated from the actions and behaviours of Main Contractors. Much of this is derived from factors related to *ingressing* such as asymmetrical

power, negotiating leverage and *price shopping*. A lack of transparency ensures that Sub-Contractors rely largely on the trust and moral standards of Main Contractors to protect their interests during the bidding process. This presents enormous risks as it is widely acknowledged within the industry sector that confidences are often broken, and unfortunately although not openly discussed, this has now become an accepted way of business. Nevertheless it remains that for Sub-Contractors to be considered for a project, they currently have little option other than to submit tenders to all bidding Main Contractors, even with the inherent risks this poses.

Sub-Contractors winning tenders for projects have no control over the selection of the remaining sub trade organisations that will make up the supply chain, this is generally solely at the discretion of the Main Contractor. Regardless an expectation and need exists at times for sub trades to work with and alongside each other, managed by the Main Contractor. This intangible requirement for co-operation is ordinarily not accounted for by Sub-Contractors when compiling their bids, usually for one of two reasons. The first being that at no time would a Sub-Contractor be aware which Main Contractor, and supporting supply chain members would be successful. And secondly, if a premium was added to compensate for co-operation it would likely result in an uncompetitive bid. It is nonetheless a source of risk for all supply chain members, as a lack of cooperation can dramatically influence any individual Sub-Contractor's performance.

Most of the value of a construction project is normally undertaken by Sub-Contractors. From a Client's perspective, however, their contractual relationship tends to remain with only the main contracting company, who in turn maintains the Sub-Contractor contractual relationship. As such all cash flow is routed through the Main Contractor before payment is made by them to the numerous subcontracting companies. Slow or none payment by a Client therefore has a far greater effect, and poses more risk towards individual Sub-Contractors than it does for Main Contractors working on a 'cost plus' margin.

Some Main Contractors endeavour to mitigate risks posed by Sub-Contractors by only employing Contractors that are trusted, usually as a result of having had a previous working relationship with them. Trust builds relationships and engenders loyalty, but can also lead to Main Contractors relying upon tenders that are not the most competitive in the marketplace

at the time. Inevitably this leads to a competitive disadvantage that some will seek to recover from by *price shopping* to *pet contractors*.

The task of evaluating Sub-Contractor tender submissions and selecting the supply chain is fundamental to the success of any project. Yet Main Contractors are often blind to the risks posed by bid obfuscating and have few strategies to offset them. Working within tight time constraints multiple tenders from many trades require scrutiny and comparison. For some trade services evaluation is straightforward, for other complex or technical services, however, this is not always the case and further the technical expertise to effectively evaluate such bids is not normally held within the Main Contractor's organisation. Therefore it is not unusual for Sub-Contractors' bids to be accepted without the contractor being aware that it does not meet the requirements of the tender documentation. Hence Main Contractors can be oblivious to the actions of Sub-Contractors and unspecified equipment can at times be installed in projects unbeknownst to them.

We specified a USG system that has a very specific seismic bracing restraint requirement. The contractor (big contractor) didn't even realise themselves that the Sub-Contractor had put in another system, an Armstrong system (the name doesn't matter) but another system. So they were then very exposed. The subbie exposed the Main Contractor because the due diligence on the bracing and the signing-off, because they've got to sign off and produce a date at the end, they weren't able to deliver it.

6.16 PRICE SHOPPING

The inter-organisational structure of procurement processes within the construction industry exists without the prescription or adoption of rules or guidelines to tendering. Nevertheless unwritten rules and expectations remain amongst the construction industry fraternity that act as proxy conventions. One of which is an implicit understanding and belief that when submitting a bid for a contract that price confidentiality is assured. As Contractors, especially Sub-Contractor's, bids are evaluated largely on price alone, this is often their only competitive advantage when sourcing work through the route of a traditional tender. And is one that is easily lost if financial details of a submission are revealed to competitors. As such the In Vivo code of *price shopping* is the practice of the

recipient of a supplier's quotation breaking expected confidentiality and revealing pricing to other interested parties.

And there are all these sort of unwritten rules about the tender market. There is this sort of expectation that if you've got the cheapest price on the day well then it's your job. At the end of the day, I think if you offered the best value submission on the day then there's probably an obligation that that's where the company should go.

Although members of the industry expect conformity with industry norms, the reality does not live up to the ideal. This is especially true with regards to price confidentiality. Most in the industry espouse their reluctance to break confidences, and view those that do as acting unethically, yet knowledge of the practice of *price shopping* is ubiquitous.

You have the opportunity at tender price to put all your prices forward, your best foot forward and make your judgment. To then go away and then work behind someone's back and fiddle it, I wouldn't class that as fair. You had that opportunity upfront.

But when it comes to shopping, our belief is that if you submit a price, that is your price and that is no one else's.

Reasons for price shopping vary, as do the associated implications of *price shopping* dependent upon when the practice takes place, pre or post contract award. Main Contractors formulating bids prior to submitting them for consideration by a Client or architect have two primary and related objectives. The first being is to ensure that their bid is competitive, and the second to ascertain that the supporting supply chain actors to their bid are competent, trustworthy and reliable.

At the end of the day you've got to be able to procure your supply chain on an appropriate basis. You've got to be able to choose people who you know are going to perform for you. You've got to be able to choose people who are going to be able to manage their works and deliver good quality and deliver it on time, and you've got to be able to procure in a way that your business is profitable.

The immediate solution to simultaneously achieve both objectives is to use preferred, *pet*, Sub-Contractors holding a competitive price. Intense competition between Sub-Contractors however generally leads to a range of prices with no guarantee that a preferred contractor

is the most competitive amongst those submitted. To overcome this it is not uncommon for a Main Contractor to discuss or suggest the value of the lowest bid with a preferred contractor, and avail them of the opportunity to at least match it before tenders close.

For favoured Sub-Contractors offered the opportunity to readdress their initial tender submission the likelihood of subsequently winning the contract improves, but often with a severely diminished margin. Sub-Contractors placed in this situation understand that their competitors are likely to be aggrieved by this practice.

Yes and if we're on the benefiting side of that we're happy with it. If we're not on the side of it, we're unhappy.

Now, if we get a quantity surveyor or if we get a developer pricing a job, then it would be good to see all those jobs come through and we get an independent evaluation of those tenders so that builder can't ring that electrician or he can't ring that plumber or he can't ring that concrete guy and tell him better your price and then send it back into me.

But for these favoured Sub-Contractors, the invitation by Main Contractors is seen as just reward for maintaining an on-going relationship with them. The Sub-Contractors feel an obligation to meet the Main Contractors request for price reductions for fear of damaging this relationship and increasing the risk that the Main Contractors will seek reductions from more willing competitors instead.

Whether the practice of price shopping is widespread or not is largely a moot point, as the perception alone that it exists, combined with an ingrained culture of mistrust is suffice for Sub-Contractors to have developed strategies to mitigate the possibility of it happening to them. In some instances the knowledge that a particular Main Contractor is bidding for a project will cause a Sub-Contractor to disqualify themselves from pricing, as they feel they cannot be trusted.

So if we find out they're pricing it, we just pull out. Once again, builders that aren't totally honest that we know are shopping our price.

We can refuse to tender to a particular builder and we've done that on some occasions.

Others will *price discriminate* and submit a purposely high bid to some Main Contractors with an aim of disadvantaging them, and only reveal their true bids to preferred recipients. Sub-Contractors following this course of action do not realistically expect a high bid to be successful, but nevertheless practice *bid gambling*. They do so to ensure they maintain some contact with Main Contractors, even those unlikely to employ them in the short term, in the hope of forming a working relationship in the future.

...depending on what happens, there are builders that we've put in more expensive prices to because we don't have confidence in them that they're not sharing our price and that type of thing. So probably that eliminates our ability to get work with them.

So if we don't put a price to a builder that we don't respect anyway, well we're never going to get his work because he's not getting our price. If we continue to put our prices out there and he doesn't want to work with us he'll just shop our price and get somebody else, so you are on a hiding to nothing.

However, the most common strategy is to submit tenders just prior to the close of submissions. Sub-Contractors have adopted this practice so as to limit the time available for Main Contractors to negotiate with their competitors, using their submission as a bargaining tool.

I guess what we don't know is once our price has gone out, we don't know what happens after that and that's why we try not to put our tender out until half an hour before closing, quarter of an hour before closing because you just don't know if your price is getting shopped.

.... you don't have time and the reason they turn up on the fax machine at ten to four and not three days beforehand, has anyone told you why that is? They are all dead nervous that you are going shop their price, basically.

Submitting late tenders is now the accepted norm amongst many sub trades as it is viewed by them as the best means to mitigate *price shopping*. As a consequence of this behaviour the period available to Main Contractors to evaluate tenders is at times reduced to minutes, which serves to facilitate *bid obfuscating*.

Main Contractors fortunate enough to win a contract at times use *price shopping* for their own financial gain. Knowing that they have been awarded a contract enables more aggressive supply chain negotiation, especially if a trade summary has not been included with their submission, as the Client is unaware of its proposed constituents.

So we obviously need those trade summaries and sometimes the Main Contractor nominates the name of the Sub-Contractor, but a lot try to avoid that because they still want to get into ... the ability to negotiate with ABC rather than XYZ, so they often don't nominate those.

The tender environment puts us in a situation of conflict not only with Consultants because we'll be trying to find ways in which to increase the value of the project obviously to be able to recover margin, but also with Clients who only wish to pay to a certain level and Sub-Contractors who have only priced for a certain section of the works and may have excluded others which only becomes apparent during the course of the project.

Price shopping post contract award is not used to ensure organisational competitiveness, or the competence of suppliers, its sole purpose to improve profitability. Having already had a submission accepted, any discount achievable by a Main Contractor from a Sub-Contractor's original submission improves their own financial position.

They shop prices and things like this. One of the most annoying ones I think is we'll go in as sharp as possible and then once tenders close, the builder will come back to us and say you can have the job if you drop another 5%.

So you have been awarded this contract from a really robust process but you can go out and be a real asshole round the town and say the guy down the road's going to do it \$5,000 cheaper than that, get your price down.

They'll win a job and ring their subby and say good news, we've won a job, bad news for you, you need to sharpen your pencil when they'd already won on that thing so that's the first part of how they will get back.

The converse is true for Sub-Contractors who choose to accede to Main Contractors requests. Their margins decrease unless they themselves can recoup some of their own

costs. Something they will often attempt to do by returning to their own suppliers to negotiate discounts. Alternatively some may consider other options such as taking a strategic gamble and replace specified products with cheaper alternatives.

If you're given an opportunity, often you will take it and all that does consequently is mean we go out and screw our supply chain harder ourselves, so it's not a win/win at all. It's a win for the Main Contractor, but from there on it's not because we're on the back foot. We are putting pressure on our suppliers and whether you like it or not, the variations that we are doing are costing more than what they should.

Moreover Sub-Contractors often feel that they have little or no alternative other than bend to the demands and pressures from Main Contractors, as access to larger projects is generally only available when facilitated by them, leaving few other options available.

So their main priority is to get a job and once they get a job they screw it to bloody suit themselves to a profit and we just, well it's unethical.

It doesn't always pay to have the best price on the day because that's the price that's going to be shopped.

Amongst the Sub-Contractor fraternity most Sub-Contractors view price shopping as egregious behaviour, unless they benefit from it, at which time they can readily justify it as the realities of being in business.

If another plumber comes in and says it's \$1,450, you've got the right to say well if you make it \$1,350 the job's yours, which is effectively price shopping. That's probably the trouble because, I don't know if they do know, but we've done the research because it's nice to know these things and it's not illegal and I think as long as it's not illegal... well, it never will be, but you just have to learn to play the game.

Those issues of screwing the subbies, you've got the job now you've got to do it \$10,000 less to get it, is that unethical or is it just driven by the market? Is it business or is it unethical? It's a fine line between what's unethical and what's just simply reality.

In an industry dominated by SMEs, where no formal procurement rules, guidelines or controls exist it should not be surprising that such practices exist. Clients adopt traditional

procurement methods as a means of obtaining the most competitive tender. Main Contractors are obligated when submitting their tender to ensure they incorporate the lowest bids for each trade. And Sub-Contractors if they wish to be considered for a project often have to comply with Main Contractors requests for discounts or lose potential work, whilst incurring the cost of formulating a bid.

It is commonly accepted amongst Contractors that *price shopping* occurs, in fact some Sub-Contractors routinely actively benefit from it, by maintaining strong relationships. While the construction community expect confidentiality when they submit tenders, many third party organisations when required can easily access information from within their network of contacts and manipulate prices accordingly.

Sometimes they'll tell you and sometimes they won't, but you can always find out from somebody else.

Consequences for other prospective members of the supply chain are inevitable, so too are possible impacts upon the project. Regardless price shopping continues to be a common occurrence and usually goes unchallenged by those parties disadvantaged and harmed by it.

Everybody knows it is going on, nobody is prepared to do anything about it.

I'm sure, as we've said before though, even with open tenders and the closing date, there is always ways of well his price is this, you've got five minutes, knock a couple of grand off of it and it's yours.

The reticence of Contractors to object to the prevalence of price shopping is firstly because the practice only breaks cultural expectations, not legal obligations. Sub-Contractors have minimal influence and bargaining power, and are reliant upon maintaining amicable relationships to secure work, whilst those Main Contractors who practice price shopping use it as a means of ensuring competitiveness.

Organisations such as Architects, Consultants and Clients, although sitting at the head of the supply chain, see themselves as having, or electing to have, minimal influence over the Main Contractor Sub-Contractor relationship. They remain at arm's length from Sub-Contractor selection and negotiation with no contractual relationship with either party and a functional relationship with only the Main Contractor.

We only have access to a Main Contractor. I hear all sorts of things because I have associations with a number of subbies and they'll ring up through the tender process and bleat that they are being screwed or whatever. So I do know what goes on, but I can't do anything about it because I have no relationship with the Sub-Contractors.

In reality that is of no real concern to us because we are only dealing with one party, namely the Main Contractor.

In effect the Client's representatives often chose to turn a blind eye to known issues of confidentiality that occur during or following the tender process. Although they have no formal obligation to interject, or be involved in disputes between Main Contractors and Sub-Contractors they do at all times maintain a fiduciary responsibility to the Client.

6.17 INTERPLAY OF ORGANISATIONAL TRUST

Mistrust is a common theme shared amongst many actors involved in making decisions in the process of procurement within the construction industry and underpins much of the characteristic behaviour that has emerged in recent years. The propensity for those involved in construction procurement to not trust each other stems from individual experience, hearsay and innuendo in addition to historical understandings and perceptions. It cannot be said that this is solely attributable to competitive tendering, but much unfortunately is.

Several definitions of trust exist in the literature just two being, '*trust is the mutual confidence that no party to an exchange will exploit another's vulnerabilities*' (Sabel, 1993) and '*trust refers to a more-or-less stable perception of actors about the intentions of other actors, that is, that they refrain from opportunistic behaviour*' (Edelenbos & Klijn, 2007). When viewed within the context of traditional tendering it becomes readily apparent why some members of the industry are inclined to mistrust others. Sub-Contractors bidding to *ingressors*, usually Main Contractors, expose their bids when forwarding them for consideration, at which time sole control of the document is relinquished. While submitting to numerous *ingressors* can potentially increase the likelihood of success, it can also increase the likelihood that the financial details of their bid will be revealed to their competitors. From the perspective of an *ingressor* reliant upon Sub-Contractors' bids to formulate their own submission, they often have little option other than to accept a bid without evaluating its integrity and as such they themselves submit unsure of any subsequent financial implications.

It was apparent during interviews that many Contractors within the industry have developed strategies borne out of a general lack of trust towards some stakeholders, so as to protect their own interests. Juxtaposed with those who have developed simultaneous strategies engineered to maximise opportunities that become available as a result of strong associations and relationships between organisations. Practices such as *bid obfuscating* have evolved in part to gain a competitive advantage, but moreover because Sub-Contractors are often bidding to Main Contractors with whom they may have either limited or no previous working relationships. Conversely the notion of *pet* Contractors has emerged out of a high degree of familiarity between organisations, grown over time from successful working relationships on numerous projects.

Analysis of interview transcripts revealed that organisational procurement relationships within competitive tendering are founded on either a high or low degree of trust, from which subsequent outcomes can have both positive and negative implications for others. *Bid obfuscating* for example, often a result of perceptions of *price shopping*, in the first instance is a strategy that assists to secure work, thus creating an initial positive outcome for Sub-Contractors that upon eventual discovery contributes to, and reinforces feelings of mistrust and animosity. Similarly Main Contractors, who reveal Sub-Contractors' prices to their competitors benefit from securing a known contractor, but encourage on-going antagonism towards them.

Even when no historical context exists between organisations the extent to which initial trust is present is largely determined by an individual's subconscious estimation of the other parties propensity for opportunism (Khalfan, et al., 2007; Laan, 2009). Before systems can be defined and implemented to build upon trust within a relationship, a determination is required as to where the emphasis for trust building should be placed. Is trust between organisations at the level of individuals or indeed the organisation itself? Or is trust merely an outcome of learning as posited by sociologists, that which will emerge regardless of the context (Brunetto & Farr-Wharton, 2007). Some argue that trust is built between individuals rather than organisations. Drawing on relationship exchange theory, this suggests that inter-firm opportunism is mitigated by the trust derived from the relationships between individuals (Brunetto & Farr-Wharton, 2007; Zaheer, McEvily, & Perrone, 1998). Whilst others suggest that whether trust is between individuals or organisations is a moot point and it is all a matter of personal perspective. For example an individual's level of trust in another may be determined by, or influenced by the organisation they belong to. Conversely another individual's level of trust of an organisation may be dependent upon the individuals working within that organisation (Nooteboom, 2004).

The process of developing trust according to Vangen et al, (2003) is by nature cyclical, propagated by risk, expectation and vulnerability. They advance the notion that whenever stakeholders interact a risk is assumed and each makes a presumption regarding the behaviour of others and how their behaviour impacts upon their goals. When expectations are met belief in the ability to trust a partner is affirmed, increasing the likelihood of future relationships, whilst reducing the perceived level of risk that parties had previously been exposed to (Vangen & Huxham, 2003). Khalfan et al, (2007) credits five factors with

effectively building trust: Experience, individuals regularly working together; Problem Solving, which improves communication; Shared goals, a common aim; Reciprocity and Reasonable behaviour.

The arguments of Vangen et al, (2003) are clearly evident within the context of traditionally procured construction. As Sub-Contractors, without established relationships continue to remain reliant on Main Contractors to access work, and often succumb to the consequences of their influence and power. While those with longstanding relationships benefit from their continuing association by becoming *pet* or preferred Contractors.

Regardless of the relational status of parties tendering for work, individually all are primarily concerned with securing profitable contracts, and minimising exposure to risk. As the majority of a project's value is drawn from the Sub-Contractor supply chain, it follows that a high proportion of risk resides there for Main Contractors. Selecting a competent and trusted supply chain therefore is a relatively obvious way to mitigate some of this risk. Albeit that its recruitment is constrained by the need to maintain competitiveness. It is the need to achieve these sometimes paradoxical objectives that coerces some to adopt practices such as *price shopping* as a means to manipulate supply chain acquisition. Conversely the practice of Sub-Contractors *price discriminating* has evolved in part to counter the potential risk posed by poor contractor site management. Discriminatory pricing is both a consequence of and a means of forestalling the risk that price shopping presents to their bids. This is achieved by submitting higher bids to untrustworthy Main Contractors, whilst availing preferred Contractors of a financial advantage. In essence these Sub-Contractors are *bid gambling*, being prepared to risk financially penalising and forgoing some bids in the hope of enhancing opportunities elsewhere. While coincidentally building stronger on-going inter organisational relationships with some factions of the industry.

Issues of trust within construction procurement do not reside solely within the Main Contractor – Sub-Contractor relationship. Clients, especially those considered to be less experienced, predominantly opt for traditional competitive tendering because of ignorance of alternatives and an ingrained presumption that competition equates to value. Furthermore, a commonly associated historical inference exists that Contractors will take financial advantage of unwary Clients if left to negotiate rather than tender for projects. Some instances of egregious behaviour akin to this likely do exist. Notwithstanding this,

most Contractors view favourably the opportunity to negotiate the cost of projects directly with Clients and recognise the degree of trust a Client has placed in them. While a small premium may be incurred over and above a competitively bid project it is often offset to some extent by a reduced level of variation costs. As Contractors reciprocate the Client's trust in them by often being far less inclined to seek reimbursement for inconsequential additional works.

There is a reduced rate of questioning for variations if it's gone down a negotiated route.

He [the Client] benefits because he is not going to get banged for a whole lot of variations as a rule.

Like if we make a hole, say the boys make a hole, sparkies always never make holes, well if a plug gets covered over so they have to find it, we'll ring up straight away and tell them so they can go and fix it. We're not in a situation where everyone tries to charge everyone for something.

It also follows that Contractors placed in the fortuitous position of negotiating contracts directly with Clients wish to propagate those relationships. Hence rather than actively seeking to extrapolate the greatest short term financial return from a project, their focus is more often upon maintaining on-going long term relationships, with the Client's personal objectives taking precedence over their own.

So you've got to make sure that you cover yourself, do it right, do a good job for the customer who has had faith in you.We're going to make sure we do it right. We're going to talk to them and say look, what about this, what about that to make sure he gets what he wants, plus, rather than what he wants, minus. We've got to make sure that we've almost got the license now to make it right, we have to make sure we do it right.So I think, in general terms, the customer would get a better job but he would pay a bit more.

There is a widespread acceptance amongst Contractors that negotiated forms of contract often supply far better project and financial outcomes for stakeholders than those that can be secured from competitive tendering.

Most Consultants believe that negotiated procurement is the best way of doing it. However, when their Clients turn up on the doorstep and say we want to go to tender, they do very little to dissuade them.

In most new, let's say greenfield site work, most of our Clients just know the inherent benefits of the tender process and invariably you'll stitch yourself into a bit of a corner trying to negotiate that with them.

Yet proportionally very few contracts follow a negotiated route even when the project is headed by an experienced architect. Those that do follow the path of negotiated procurement are generally limited to those negotiations between Clients and Main Contractors, to the exclusion of all other members of the extended supply chain who ordinarily continue to be procured via a competitive tender. Cultural norms account for much of this reticence to negotiate more projects, but some responsibility also falls back on to the professional Consultants employed to advise Clients such as Architects and project managers of the more effective procurement methods. This, however, does not always happen, because of the *reputational protectionism* stemming from an overarching lack of trust.

Part of our professional approach is that they might think if we directed the builder that somehow we are getting backhanders from them and that's why I never feel overly confident because whilst that can never happen with an architect, it doesn't stop an owner who is a businessman thinking that's what is happening.

Of course, if you negotiate and recommend a particular builder and this has happened occasionally in the past, what if a builder, what if he cocks up on this job and he doesn't deliver, and you have recommended him? Somehow if you recommend someone, you are a bit more dependent on the integrity of their whole performance really.

It's an industry standard so it's still generally accepted as being a reasonably robust model. It basically promotes us as being reasonably impartial and that a Client goes to tender and is not then influenced or is not coming back to us and saying well perhaps you have influenced this situation because you've had a relationship with the contractor.

Construction Consultants can take many years to develop valuable and worthwhile industry reputations which they keenly safeguard. Suggesting or nominating Main Contractors, even those with good historical performance records to Clients therefore can place the trust of protecting their reputation outside of their immediate control; a risk that for some, when the option of promoting competitive tendering exists is seen to be unnecessary. Of greater significance though to a consultant, than the damage that a poor performing Main Contractor can do to their reputation is that posed by presenting a procurement context in which misconceptions can emerge, such as those that are negotiated. Consultants cannot trust Clients and other stakeholders not to misconstrue decisions, but can minimise the likelihood of it happening in the first instance by injecting a degree of transparency as many in the industry believe exists within the framework of competitive tendering.

Khalfan et al, (2007) posit that trust is built upon the experience of working together over time, joint problem solving, shared objectives and ambitions, reciprocal relationships and reasonable behaviour. More often than not, all factors that in many instances do not exist between parties involved in a competitive tender scenario. Clients or their representatives undoubtedly evaluate Main Contractors invited to tender for projects, and probably have prior working relationships with at least some of them, suffice to ensure a quantum of trust.

Sub-Contractor recruitment, however, is ordinarily the responsibility of Main Contractors, many of who are similarly likely to have prior knowledge of, or working relationships with, a proportion of the bidding Sub-Contractors. Depending upon the project size and complexity the probable reality is that unfamiliar or unknown Contractors will also submit bids, albeit often unsolicited, to those Main Contractors compiling submissions.

You may get a Sub-Contractor which has been approached by one of the other Main Contractors; they may deliver a very cheap price. If you haven't dealt with them before, it becomes quite a risk to actually take that price, but you have to, to achieve the lowest common price structure. So what ends up happening, it means you are putting forward a bid where you actually may not have full faith in your ability to deliver at an acceptable level.

Main Contractors of course have no obligation to consider or accept any bid, especially from those Sub-Contractors not invited to tender. Nevertheless, the possibility remains that a portion of these bids may be the most competitive and will serve to send a price signal to

the market. Some recipients of these bids will elect to ignore them, others wary that their competitors could potentially include them with their submission, will also use them, and another group will seek to use these bids to leverage discounts from known and preferred Contractors. Trust ultimately serves to guide these decisions. Does the recipient for example trust the integrity of the submitting organisation and the adequacy of their bid? Will competitors act opportunistically and accept bids from unknown sources? Have some competitors worked with bidders previously, formed trusting relationships and thus secured a competitive advantage? Can preferred Sub-Contractors be trusted to covertly negotiate, maintain discretion, discount prices and continue to meet required performance objectives?

Interviews revealed not surprisingly perhaps that prior working relationships enforce the degree of trust levelled between individuals and organisations, engendering a preference in Clients, their representatives and Main Contractors towards potential candidates for future supply chain recruitment. This is understandable, if for no other reason than Contractors have had an opportunity to demonstrate capabilities and competence. Moreover individuals and organisations have confirmed operational and personal compatibilities. The nature of competitively tendered projects largely prohibits the selection of a supply chain wherein trust exists between all parties ultimately expected to work together. Competition to secure work whilst ensuring profitability leads to Main Contractors accepting or negotiating the lowest Sub-Contractors bid and conflicts with Khalfan et al's (2007) premise with regards to building trust, and the assertion of Nooteboom (1996, p. 989), who posits:-

One cannot simply buy into trust. If it is not already in place prior to transaction, trust has to be built up. It is as much the result of cooperation as a condition for it. All one can do is to select conditions that are conducive to the emergence of trust, such as placing not too much focus on mistrustful means of governance.

Competitive tendering is known to encourage adversarial relationships, and is not readily conducive as a model befit for establishing inter-organisational trust. Nevertheless, inevitably merely the experience of working together helps develop a degree of trust between some parties. It remains though that often factions of supply chain relationships are strained and fractious, actively discouraging bipartisan problem resolution and promoting unreasonable behaviour. However, more than this what highlights perhaps most why competitive tendering is so diametrically at odds with Khalfan et al, (2007) notion of

building trust is the lack of shared objectives and aims between stakeholders.

It was clearly evident from the data generated throughout this study that most stakeholders viewed the success, or lack of, of a project as being analogous with whether they were able to meet their own individual objectives or not. Clients and Consultants predominantly focussed upon reaching objectives pertaining to meeting completion time expectations, within budgetary requirements, at an acceptable level of quality. Main Contractors first and foremost equated their objective with ensuring Client satisfaction. Conversely Sub-Contractors who account for the majority of the value in any project almost exclusively expressed a unified objective, with the determinant of a successful project being net profitability.

Such a disparity of objectives, combined with a reticence to mutually resolve problems, and a ready willingness to succumb to obstinate behaviour, whilst not always prevalent nevertheless at times exists amongst project members. Sub-Contractor resentment, where it exists, is often directed towards Main Contractors, but normally remains veiled for fear of impinging upon future work.

We've got the tiger by the tail and this cannot We are on a wild donkey that's running out into the desert and it's going flat out and it has left its competition behind. [Main Contractors] have done a fantastic job. It's one of those things. You think if you stay on the donkey for a long time you are going to die with the donkey in the desert. You've got to know when you can actually get off and walk back to water.... They see their Client as paramount, but it's bloody awful to work for them with some of the ways they engage people.

So at the end of the day, here is this Main Contractor standing there with the Client saying this is the best price you can possibly get. He can put whatever he wants on the flipping job yet he screws everyone else along the way.

I know this for a fact, they'll price work at less margin, say they'll go in on a job at minus 10% or minus 12% or 14% and then they'll just screw all the Sub-Contractors to that price. So their price doesn't actually alter. They still make a margin and they just screw everyone down. So their main priority is to get a job and once they get a job they screw it to bloody suit themselves to a profit and we just, well it's unethical. We

believe you've got to leave some fat on the plate for the next guy and if we start trying to screw Sub-Contractors they'll revolt and good on them.

Those interviewed during the course of this study, often spoke with some frankness and candour around issues related to trust within the industry. For those organisations that have fostered and cemented long lasting and established relationships, its existence generally has a positive influence upon project outcomes for organisations. Albeit that this can often be to the detriment of competitors, Clients and the quality of completed projects. Competitors often fall foul of the covert negotiations that pervade many aspects of the industry, especially with competitive tendering. Clients bear the financial consequence of strategies developed by Contractors to mitigate some of the risk associated with the evanescence of trust. This is in addition to a sometimes unrecognised or identified reduction in the quality of completed projects, which evolves as Contractors eager to improve margins seek to minimise expenditure.

6.18 THE EFFECT OF INFLUENCE

The notion of *influence* is a theme that reoccurs often throughout these findings, and is one which has emerged as a fundamental explanatory component of CI. Although an intangible phenomena it is often the immeasurable concept that interconnects cause and consequence, such as price shopping and negotiation, or reputation and trust. Dahl (1963, p. 17) suggests “[t]hat influence is a relation among actors in which one actor induces other actors to act in some way they would not otherwise act”. A behaviour that is frequently demonstrable and evident within the context of construction industry procurement which supports, and furthermore is illustrative of the behavioural rationale precursory to the theory of Convenient Immorality.

To identify and account for the relative importance and power of individual influence of one actor upon another Dahl (1963) poses six questions:

1. What is the scope of their domain? (The range of actors influenced)
2. What types of issues are susceptible to the influence of an actor?
3. By what means does one actor impose influence over another?
4. To what extent is relative influence reliable?
5. How powerful is the influence of an actor? Can it overcome reticence and resistance to change behaviour?
6. What are the costs of overcoming resistance? Are any necessary sacrificial costs significant or not?

Dahl’s (1963) questions are especially relevant when queried within the framework of procurement within the construction sector, but it is also evident that rather than influence being considered as a static invariable concept, it should be thought of as more likely being both dynamic and transient.

The scope of an actor’s domain is determined by their position in the supply chain and professional standing, their contractual status at the time of evaluation, as well as the strength of any pre-existing relationships. While Clients head the supply chain, often many of their decisions are guided by the expertise and associated repository of influence contained within the realms of employed professional Consultants (Maclagan, 1996). It remains therefore that while Clients may have procurement preferences, in many instances

their original intentions may be swayed, for better or worse, to some degree by the input of employed professionals.

Professional Consultants habitually recommend to Clients, and invite main contracting companies thought to be suitable and capable of undertaking proposed projects to submit tenders. However, beyond this point their ability to influence the recruitment of the remainder of the supply chain is somewhat diminished, as the mantle is passed to the Main Contractors, who subsequently usually acquire the remainder of the sub trade services necessary to complete the required project. Sub-Contractors themselves, unless nominated as a result of pre-existing relationships with Clients or Consultants, have little ability to directly influence any actors.

Contractual status, that is, has the contract been awarded to Main Contractors or not has some relevance when appraising the ongoing influence. Prior to securing a contract, any influence held by Main Contractors can only be leveraged towards potential subordinate organisations, and even then it is limited. Post contract award however, not only is their influence towards the lower echelons of the supply chain increased but this influence then extends to include those professional Consultants and Clients that elected them to the role.

Influence plays a part in many of the issues pertaining to construction procurement, revealing its presence in many of the themes discussed throughout this thesis. Selection control for example is concerned with an actor's ability to choose those individuals and organisations that they would prefer to work with. Other examples of the power of influence are:

Bid obfuscation, seeking to influence recipient perceptions of the completeness and validity of tenders

Opportunistic actors endeavouring to influence contextual circumstances to maximise their own interests whilst also responding to the presence of competition; and

Ingressing, a concept borne out of the ability of organisations to influence other actors admittance to the supply chain, and reputation which acutely influences and determines levels of trust.

These are only a representative sample of the many demonstrable ways that influence is effective in changing behaviours and outcomes relating to the process of procurement.

The mechanics used to implement and facilitate influence are numerous. Leverage and power are instruments commonly used. As is limiting and controlling access to necessary supply chains. Other concepts such as price shopping are effective in preventing some actors from securing work whilst assisting those with preferential relationships, or a willingness to discount prices. This is somewhat analogous to the practice of covert post tender negotiations, which often allude to promises of forthcoming projects, and on-going relationships, yet are at times juxtaposed, with threats of availing opportunities to competitors if restrictive and onerous financial conditions are not agreed to.

The reliability and relative power of influence is itself influenced by the competitive intensity of competitive tendering and any prevailing economic conditions at a point in time. The construction industry is renowned for following cycles of 'boom or bust' (Allan, Yin, & Scheepbouer, 2008, p. 5). Hence it is less likely that actors will reliably respond to external coercive influence in times of boom when alternative work is freely available. It is unlikely that the reticence of actors to change behaviours can easily be overcome. This position contrasts starkly with the behaviours that can be expected when work is not so readily come by and a plethora of actors are attempting to secure a limited number of potential projects. It is no hyperbole to say that Contractors often work on very low single digit profit margins, and work in an industry wherein they are often fortunate if they can secure fifteen per cent of the projects tendered for. As such even when not undertaking projects, transaction costs are increasing as they attempt to secure work. It follows therefore that actors faced with intense competition, often substantial fixed costs, continually increasing variable costs and intermittent unknown future revenues can sometimes find themselves in precarious financial positions. Thus they are more likely to become conducive and amenable to the persuasion of external pressure. A protagonist maintaining a degree of leverage can be confident that their attempts to exert influence over another have a greater probability of occurring and any residual reticence on the part of actors to change behaviours as requested can be more readily overcome.

In terms of the costs and sacrifices ascribed to those actors seeking to exert influence over others often there is no cost involved. Consider the scenario of a Main Contractor who has already been awarded a contract, but is yet to confirm the required sub contract organisations. Any Main Contractor in this situation has an enormous amount of power and leverage, and therefore an innate ability to influence the behaviour of potential Sub-Contractors. Far from bearing any financial burden attributable to influencing the behaviour of Sub-Contractors, Main Contractors in this position in many instances will take the opportunity to improve their financial position by seeking discounts from the supply chain, often from preferred pet contractors, who can frequently be leaked the supposed confidential pricing of their competitors. The Sub-Contractors themselves are very aware that morally their peers may construe this situation negatively. But will more often than not forego any misgiving they may have about ethical dilemmas in favour of discounting their previously submitted bid, to ensure a contract is secured. To this end a Main Contractor has influenced the proposed supply chain to include a preferred contractor and an immediate financial windfall.

The questions posed by Dahl (1963) clearly reveal some of the many forms and guises that influence presents itself in. Moreover, they help explain why within the context of competitive tendering actors can be persuaded, coerced or convinced as a result of economic circumstance, and the reluctance to damage relationships, to act in ways that they would likely be reticent to do otherwise.

6.19 SUMMARY

This penultimate chapter introduced and explained the key core variable to emerge from this study, Convenient Immorality (CI), a concept built from the propensity of the construction industry to continue to procure projects via the route of the competitive tender. The chapter continues on to outline many of the reasons why traditional tendering occupies and exhibits such dominance within the New Zealand construction sector. A position that effectively is the antecedent of the many inter-connected and synthesised themes that are subsequently addressed and which underpin CI.

The following and ultimate chapter will summarise the study's findings make recommendations to overcome and mitigate the effects of CI and discuss the implications of CI within the context of other, alternative procurement methods. It will finish with a concluding discourse, discuss the limitations of this study and make suggestions for additional future research.

CHAPTER 7

DISCUSSION

7.1 INTRODUCTION

This final chapter commences by firstly summarising the key findings to arise from this research. It subsequently continues to introduce the substantive grounded theory of Convenient Immorality and outline the relationship between the eight behavioural categories outlined in chapter 6 and their associated fit with an organisation's strategic drivers, relative power and degree of autonomy. Carrying on, the discussion expands to include the role and influence that the situational and cultural context has upon the behaviours of organisational actors.

Consideration is also given to the likelihood of Convenient Immorality existing within alternative procurement approaches in New Zealand, and further briefly outlines some innovative international procurement methods and discusses how their inherent characteristics may facilitate or mitigate organisational immorality.

The chapter draws to an end with a broad concluding discussion followed by an articulation appertaining to the significant contributions that this study makes, the implications it poses for both the practitioner and research fraternity, and suggested future research opportunities.

7.2 SUMMARY OF RESEARCH FINDINGS

It is widely accepted that the productivity and performance of the construction industry significantly lags behind that of other sectors such as manufacturing. Over recent years many have postulated suggestions that attest to explain the inherent inefficiencies continuing to exist within the sector. The consensus of commentators' opinions, however, generally tends to revolve around the opportunistic exploitative nature of the industry ensconced within an environment of conflict and mistrust (Bishop et al., 2009; Errasti, Beach, Oyarbide, & Santos, 2007; Rooke, Seymour, & Fellows, 2004). In such an environment, the traditional model of competitive tendering has been accepted as the cultural industry norm for procurement to encourage efficiency and value (Cox &

Thompson, 1997; Dubois & Gadde, 2002). This study found that within the context of the New Zealand construction industry all of these characteristics are present. Moreover, however, this study identifies other key drivers that individually and collectively influence the morality of actors. Those together inform our understanding of the organisational rationale supporting many of the strategic decisions that contribute to the poor performance of the industry.

7.2.1 The Serendipity of Grounded Theory from Collaboration to Immorality

Grounded theory is a methodological approach often adapted and used within the context of an area of study that has often been overlooked in the literature or has been paid scant regard (Goulding, 2002). It is also commonly used when the intent “[i]s to generate theory that explains a phenomenon of interest to the researcher”(Birks & Mills, 2011, p. 17). Moreover many researchers have come to recognise that serendipitous discovery is another aspect of grounded theory that continues to enhance theoretical insight and development. As Bryant et al., argue “If it wasn’t always apparent that GTM is all about serendipity, then it certainly is now” (2010b, p. 23).

Using grounded theory to facilitate a study does not on its own guarantee fortuitous findings. As has been highlighted numerous times throughout this study, many other factors can also be responsible, such as the research paradigm underpinning the methodology or the method used to generate data. It is acknowledged however that within this study grounded theory was the catalyst ultimately responsible for changing its direction, focus and findings.

At the commencement of this study in mid 2009 its objective was to garner an understanding of collaborative procurement practices within the construction industry, and further, explain the reticence of most members of the industry to enter collaborative supply chain relationships. A review of interview questionnaires in Appendix two reveals that questions supporting the semi structured interviews were directed heavily towards procurement methods. In late 2011 however the research focus changed as a direct consequence of what began to emerge from ongoing data analysis and the ever increasing repository of memos. Multiple themes were coming to the fore that bore no relevance to collaborative procurement per se, rather they tended to pertain more to the ethics and

morality of actors within the industry. This was somewhat at odds with a very early conceptual model that pointed towards the strategic intent of actors within the procurement process. A subsequent re-evaluation of this model from the perspective of morality revealed aspects of behaviours and strategies that would otherwise have been overlooked. Whilst to the researcher at the time this was a definite 'eureka' moment, the importance of which was immediately apparent, it also came with the realisation that all the data that had be coded and analysed up to this point would need to be re-analysed. It also necessitated a return to the field to secure more affirmative data and evidence.

Serendipitous finding and discoveries are thus something that a researcher following a grounded theoretical approach should be conscious of coming across, and attuned to the possibility. Nonetheless the researcher needs to be receptive to the notion from the outset that a grounded theory journey commences with an unknown timeline and an unknown destination. Protagonists embarking without the time and resources available to both enable and account for re-direction will not reap the true benefits that grounded theory can serve.

7.3 THE GROUNDED THEORY – CONVENIENT IMMORALITY

Convenient Immorality is introduced as an emergent substantive theory, or that which Glaser & Strauss (1965b, p. 5) posit as being "[t]he formulation of concepts and their interrelation into a set of hypotheses for a given substantive area". It is a precursor to the development and generation of formal theory (Glaser, 1978; Glaser & Strauss, 1965b), with its explanatory capacity confined to the specific research context. In this instance that of construction procurement within New Zealand.

The purpose of the theory of CI is to explain and predict some of the behaviours played out by the multiple actors involved with the procurement of construction projects (see Figure 7.1). Behaviour, that at times would be considered by other actors working within the industry, as well as the wider community, to be outside the boundaries of normally acceptable moral conduct and which in itself contributes to what many would consider to be poor public perception of the industry as a whole. More than this, however, it demonstrates the need for those making procurement decisions to consider the implications that their choices have upon proposed members of the supply chain.

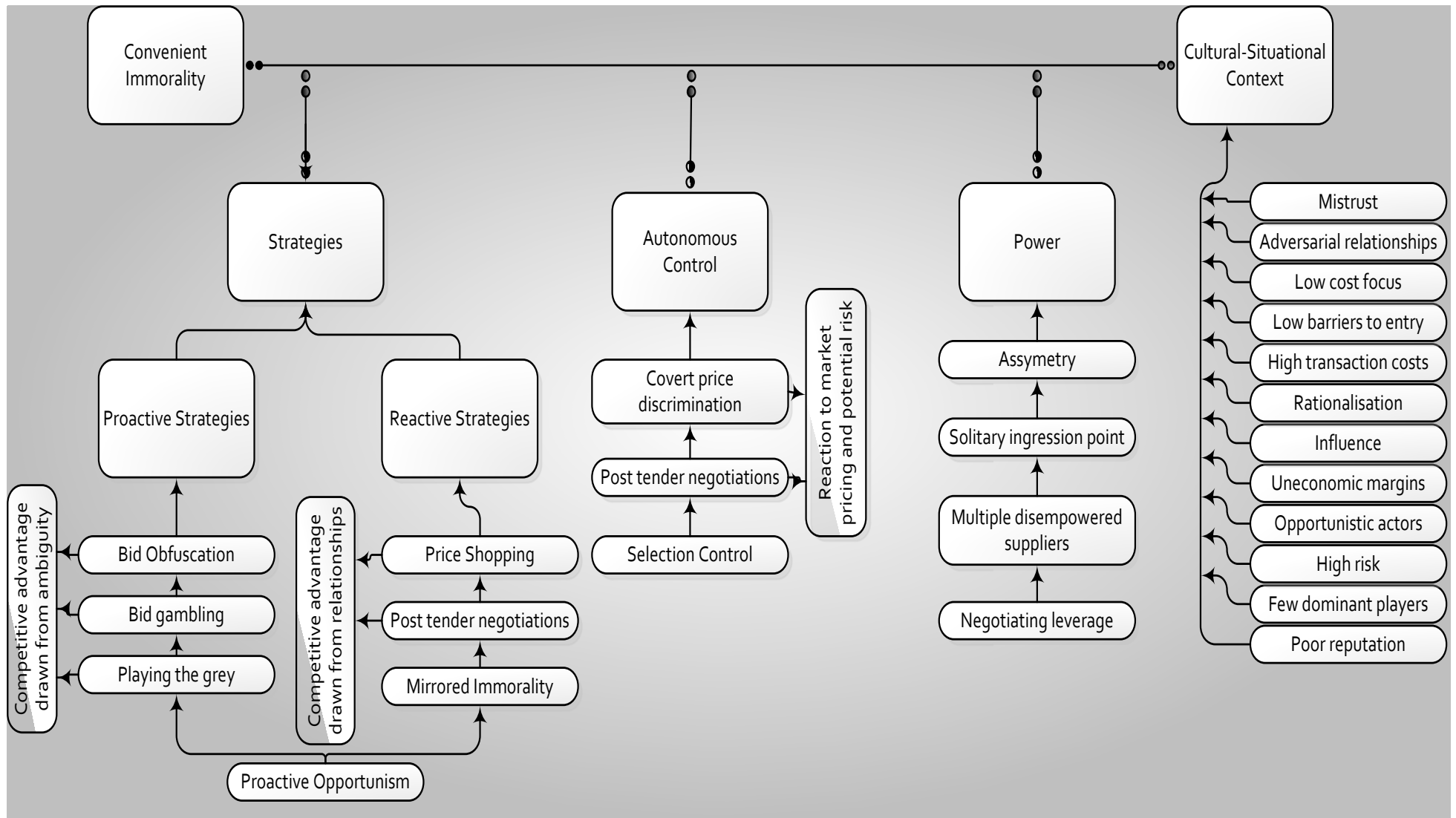
Importantly, it highlights and encourages consideration towards potential ramifications that may eventuate for both the project and other stakeholders as a consequence of an ill-considered myopic focus.

Convenient Immorality is built upon the eight behavioural categories discussed in Chapter six; Proactive opportunism; Bid obfuscation; Bid gambling; Playing the grey; Price shopping; Mirrored Immorality; Selection Control and Ingressing. Categories, that in themselves are each defined as being either strategic in nature, borne from a desire for autonomy; the ability to leverage power; or a combination thereof. Furthermore, and crucial to developing a full understanding of Convenient Immorality, is to consider the situational and cultural context within which these behaviours develop and prosper. That is an environment where significant risks are ever present, where trust is minimal, influence abounds and in which actors can readily internally justify their behaviour. More than this, the context is one of intense competition, extremely low barriers to entry, high transaction costs, low success rates, wherein many recruitment decisions are weighted predominantly towards cost, and is one which subsequently sees actors routinely working for low single digit, or even negative margins. This is further compounded when the makeup of the industry is accounted for, that being an industry heavily dominated by a few large organisations, but where the majority of a project's value is driven by a profusion of sometimes very small cash flow poor subcontracting companies.

The label Convenient Immorality was attributed to this theory without intent to imply or dispense any negative aspersion towards any fraction of the industry. It was, however, chosen in the knowledge that some may possibly take umbrage with perceived associated inferences. Nevertheless, first and foremost it was chosen because it intuitively captures the essence of the concept that it serves to describe, rather than infer any references towards an industry in which actors unilaterally choose to abandon notions of right and wrong for their own betterment. Convenient Immorality is a theory of the behaviour of key construction industry actors' intent on business sustainability and growth, when rational choices requires them to relax their normal moral constraints.

Figure 7.1

A Model of Convenient Immorality



7.4 STRATEGIC BEHAVIOURS

Strategic behaviours supporting Convenient Immorality are ordinarily categorised as being either offensive and thus proactive, or alternatively defensive and reactive. However, the sheer volume of simultaneously competing actors with invariably complex inter-organisational relationships and objectives, makes distinguishing between them at times difficult. As outwardly projecting behaviours may in reality be contrary to their proposed intent.

7.4.1 Proactive Strategic Behaviours

Bid Obfuscation (BO), Bid Gambling (BG) and Playing the Grey (PTG) are inherently proactive opportunistic strategies developed primarily to improve the underlying profitability of a project. However, there exists an obvious caveat. If and when contenders to a bid are unsuccessful, considering the majority usually are, then inevitably the net result is ordinarily that of a negative financial one. Purely, if for no other reason than because of the necessary costs incurred to formulate and submit a bid, which is generally produced at the contractor's own expense. As such the first objective of contracting organisations is to secure the contract they are bidding upon. Thus there is a requirement to balance their primary objective of securing a project with that of making a profit whenever successful, whilst operating within the context of a highly competitive environment.

To increase the likelihood of balancing organisational objectives many companies now routinely adopt practices such as BO, BG and PTG. Obfuscating bids and PTG are practices predominantly reliant upon extracting a financial benefit from ambiguous information. One, however, is drawn from the ambiguity of tender documentation and the other by infusing a degree of ambiguity into the tender process. Nonetheless both have the same objective of enabling Contractors to claim additional costs for omissions from their bids post contract award to offset the relative discounts given to secure the contract in the first instance.

Bid Gambling is a strategy that as the name would suggest involves an aspect of risk. In some instances it is a response to insufficient time to formulate and compile tenders, in such a situation Contractors may submit bids without confirming definitive pricing from their suppliers. Moreover, however, it is commonly also an indirect attempt to improve the

likelihood of winning contracts through leveraged inter-organisational relationships with preferred Contractors, wherein favoured recipients will benefit from discriminated pricing structures, designed to maximise the possibility of both submitter and recipient securing contract award.

7.4.2 Reactive Strategic Behaviours

Actors working within the construction industry have few opportunities to procure projects without the need to compete against numerous peer organisations for the same opportunities. In an environment where all players are looking for any competitive advantage it should be expected that a need arises for actors to consider and implement strategic responses to counter the consequences and risks posed by the strategic actions of competitors when seeking to secure a contract award.

It was apparent from the interviews informing this study that price or cost is heavily weighted whenever tenders are evaluated. From the perspective of most subcontracting companies it would seem that this is their fundamental consideration, and explains why their focus during the bidding process tends to be one dimensional. This for the most part however is understandable, as without at least submitting a bid that outwardly appears to be competitive, their submission is unlikely to progress any further. Hence the reason why the true competitiveness of competing bids is often concealed by practices such as BO, BG and PTG.

The need to remain competitive also extends to MC bidding for projects, albeit that their own submissions can also often be evaluated across a range of other criteria aside from price alone, such as work history, capability and available assets and resources to name a few. Nevertheless, price and competitiveness still drives most procurement decisions and a MC cannot overlook prevailing market prices in favour of utilising a preferred contractor's submission, for fear of being uncompetitive. To offset the likelihood of such an event occurring many Main Contractors rely upon the advantages that can at times be secured from close pre-existing relationships with some members of the supply chain. It is not unusual for these relationships to lead to the occurrence covert negotiations, during which supposed confidential third parties pricing is freely discussed. Price shopping is a

phenomenon widely accepted to frequently happen amongst interviewees. It is behaviour frowned upon as being immoral and unethical by most in the industry. That presents somewhat of a paradox as its existence is so prevalent. With many of those actors espousing abhorrence towards the practice simultaneously engaging in it, or alternatively benefitting from it, in some way whenever necessary or when the opportunity arises.

Although possibly not ubiquitous, all interviewees were either aware of the existence, had been detrimentally impacted by or taken part in the practices of post tender negotiating and price shopping. It is foolhardy to assume that all Contractors attempting to preserve the interests of their own organisations will not break expected confidences when perceived need, necessity or greed exists. MC organisations do so ordinarily to ensure their bid is not only competitive but also that they recruit competent supply chain members. Realistically SCs who would refuse to enter discussions with a MC not only risk damaging any future relationship, but would also invariably severely reduce any possibility of winning the intended contract with that particular MC. This concurs largely with the findings of Ray, Hornibrook & Skitmore (1999, p. 7) whose study focussed upon the Australian construction industry, who with regard to post tender negotiating say the following:-

At post tender stage, however, Main Contractors are in an even stronger position to pressure Sub-Contractors and suppliers into reducing their prices as there is a greater certainty of the Main Contractor, and therefore the Sub-Contractors, actually doing the work and therefore less risk of underemployment. As a result, Main Contractors are often able to reduce Sub-Contractors' quotes by simple unilateral action.

Both proactive and reactive strategic behaviours occur as a consequence of organisational self-interest in a highly competitive industry. Some organisations reported securing ninety per cent of their work in such a fashion. Others undoubtedly exist who largely refrain from these practices. Nevertheless a culture exists wherein Contractors justify what most would themselves ordinarily consider as being immoral behaviour, simply because they are replicating or mirroring the immorality of other industry members. This in the eyes of protagonists at least, subsequently qualifies the behaviour as being acceptable.

7.5 AUTONOMOUS CONTROL

The inability to freely subscribe to a supply chain comprising of preferred associates is perhaps an idiosyncrasy of the construction industry. Most industries such as manufacturing maintain established supply chain relationships. This position remains largely at odds with the transient nature of supply chains within the construction sector, drawn from traditional competitive tendering, which invariably change from one project to the next. From the perspective of efficiency alone this would appear to be illogical as any benefits from inter organisational relationships are limited, and cumulative organisational learning is lost.

Many organisations actively involved in competitively procured projects appreciate the many financial, operational and production benefits that can be garnered from working within a supply chain propagated by capable, competent, trusting members with a history of working together. Inevitably this incentivises some potential supply chain members to facilitate each other in an attempt to overcome the constraints of traditional procurement, which customarily dictates that the supply chain is comprised of those actors submitting the lowest bids. This suggests therefore that it is not only the need to remain competitive that drives those recruiting subcontract services to knowingly reveal third party pricing. These organisations consciously adopt this behaviour to not only protect their own financial viability, but also the integrity of the final built project which they see as directly influencing their on-going reputation.

The subcontract fraternity while not able to influence membership of the horizontal supply chain, nevertheless do attempt to capture some of the perceived benefits available to them from working within a preferred supply chain. In this regard there is very often only one means available to them, which generally involves offering covert discounted pricing to preferential and trusted Main Contractors. In an environment of multiple actors with multiple unknown inter organisational relationships this can be an unreliable strategy, that only serves to further reduce potential profit margins, further motivating Sub-Contractors to recoup financial recompense at every future available opportunity.

7.6 POWER DIFFERENTIALS IN THE PROCUREMENT PROCESS

Power disparities are normal in the traditional master – servant relationship, an inequity similarly evident in the relationships of actors active in procurement within the construction industry. Nevertheless, these relationships are not analogous when viewed in the context of the construction sector as the master, or Client, is ordinarily maintained at arm's length from the vast majority of other actors, or servants, working in the supply chain. Contractually a Client's agreement is bound to that of the main contracting company to the exclusion of Sub-Contractors. Thus sub trade service organisations, the greatest contributors of value to any project, are subsequently contractually bound to the Main Contractor.

Historically this traditional procurement model has met Clients' objectives to construct the built environment, but it is often fraught with numerous ill-considered negative consequences that Clients, especially those who are infrequent purchasers of construction, remain oblivious to. Although competitive procurement is thought to demonstrate transparency whilst the market simultaneously determines the optimum value, in many instances this is far from the reality. Project costs continue to commonly exceed initial budgetary forecasts and construction defects post project completion continue to appear. This has also been identified in studies by Craig, Sommerville and Auchterlounie (2010) and Sommerville, Craig and Bowden (2004), who suggest that the on-going proliferation of defects and poor quality in completed projects is purely attributable to building Contractors electing "[t]o turn a 'blind eye'"(Craig, et al., 2010, p. 1207) to their responsibilities.

This study concurs with many of the assertions of Craig, et al., (2010) but would also suggest that many Contractors' moral obligations are dispensed with for economic reasons, often brought about by the power leveraged against them by other competing actors. Sub-Contractors for example who can only access potential projects via the solitary ingress point of main contracting companies often have little choice other than to accede concessions to secure work. It is such at times that conceivably some could perceive the asymmetry of power as being responsible for creating almost overt obsequiousness. Similarly Main Contractors keen to recruit competent supply chains have few alternatives other than to 'shop prices' in response to 'low ball' market pricing. All of these actions, as has previously been discussed have on-going financial and production implications for

stakeholders. For many industry outsiders looking inwards therefore it is possible to understand how such behaviours could perceivably be construed as being somewhat immoral. In effect, however, from the introspective viewpoint of many of the actors working within the industry, their actions are perceived as being the results of economic necessity and coercion thus relegating their decisions to nothing more than rational choices.

7.7 SITUATIONAL & CULTURAL CONTEXT

If this study was conducted within a quantitative paradigm, undoubtedly reference would be made of the multi-collinearity of independent variables. Such as BG, BO, BTG, Price shopping and ingressing, and indeed it would be correct to argue that all of these factors are inter-related, and at times can be both a cause and consequence of each other. However, effectively they all contribute either independently or cumulatively to the notion of Convenient Immorality. Nonetheless, it would be remiss to view or interpret the relative causality of such contributory factors in isolation from each other, or alternatively from a perspective removed or redundant of the context, as the situational and cultural setting of the construction industry environment is fundamental to the emergent explanatory integrity of Convenient Immorality.

It is unfortunate that the construction industry has acquired over time what many would consider as being a poor reputation. Reputational damage is such nowadays that colloquial derogatory phrases such as 'cowboy builders', inferring shoddy workmanship and unscrupulous moral behaviour are everyday vernacular, one that extends to a plethora of associated trades often indistinguishable to the uninformed public audience. This study makes no attempt to defend any sector of the industry that purposely commits fraudulent or anti-competitive behaviour, but does seek to indirectly address some of the reasons why public perception of the industry is as it currently stands.

It was clear from the respondents informing this study that many worked in what can only be described as an antagonistic adversarial environment, propagated by actors focussed upon self-serving interests. Negative attributes, that for the most part emanate from a traditional competitive procurement model that rather than capture the many consumer benefits that have become expected from active competition between actors, instead serve to erode value. In most instances this erosion of consumer value is borne from Contractors

whose primary focus is to ensure projects meet their own financial objectives. This at times can conflict with the interests of other stakeholders, and result in cost efficiencies being sought which subsequently have detrimental implications for a project.

Erosion of value for the consumer is often the outcome of the traditional procurement model. Some of the antecedents and underlying explanation for this loss can be traced back to the bidding process, which occurs in a competitive arena plagued by a distinct lack of trust between some parties and is one wherein those actors fortunate to maintain pre-existing contractor relationships divest expected third party confidences in favour of securing their own on-going success. Furthermore, the bidding process is played out in a high risk, high transaction cost, opportunistic environment which effectively reduces potential profit margins to such a degree that many projects even at their commencement may not be financially viable, unless costs for additional works can be recouped, or efficiencies secured as the project progresses. The net result of which is often that a Client's original expectations are not achieved, or in some instances fall dramatically short of expectations, thus further supporting the arguments of those who would belie the reputation of the construction industry.

It is important that we consider the relationship between the industry context and the associated effects on the behaviours of actors. What for example would be the implications for the industry if current ingrained negative perceptions were resolved? Is it likely that industry performance would increase or not? If power inequalities were somehow balanced would actors be more inclined towards cooperation rather than antagonism? And further, if inter-organisational trust was more prevalent would the need to generate value from opportunism repress? After all, as this study would suggest it is issues such as these that exert pressure on both individuals and organisations working in the construction sector to adopt many of the procurement practices previously discussed. To assume that alleviating these issues would solve the vast inefficiencies within the industry would be wrong. It would, however, perhaps be correct to suggest that by adopting more approaches to procurement that diminish the likelihood of similar contextual conditions existing in the first instance, that consequentially it will go some way towards mitigating the effects that traditional procurement has upon the performance of the supply chain.

7.8 ALTERNATIVE PROCUREMENT APPROACHES AND CONVENIENT IMMORALITY

Chapter 5 introduced and discussed the three most conventional construction procurement used within New Zealand. Being the traditional competitive tender, the current dominant approach, as well as integrated and management orientated approaches. The impact of competitive procurement on the morality of actors supports this current thesis and as such will not be addressed here. Furthermore, this study found little evidence of a general awareness across the supply chain as a whole of integrated and management orientated approaches, especially amongst the Sub-Contractor community. Nevertheless, this is likely because from the perspective of Sub-Contractors their contractual agreement remained with what they perceived to be a Main Contractor, and they often remain ignorant of the wider holistic. Thus although the project may very well be procured via an integrated or managed approach, to Sub-Contractors it remains not dissimilar to that of a traditionally procured project.

Fundamentally there are significant differences between the functional and contractual structure of both managed and integrated approaches, when compared to those of traditional procurement. Most of the differences, however, relate to those relationships between Clients, their external Consultants and the Main Contractor or management contractor. It is true though that both remove some of the tensions inherent in a traditional competitive model. Integrated procurement for example, (see Figure 5.4) removes the need for the Main Contractor to consider 'low ball' prices from Sub-Contractors who may not have been invited to tender. As they are not competing against their peers, they can, if they so desire, ignore unwanted approaches that they would otherwise have to consider. So, rather than recruit a supply chain borne from economic necessity, they have autonomous control over its selection. This is also a benefit of a management orientated approach (see Figure 5.5), which sees construction Contractors relegated to the same level as other Sub-Contractors, and a management contractor installed who remains responsible for supply chain recruitment. Moreover, the necessity to evaluate Sub-Contractor submissions in unrealistic timeframes is removed from both approaches, mitigating risks posed by BO, BG and PTG and further it enables those responsible for selecting Sub-Contractors to

accommodate some of the beneficial design suggestions they may contribute, as they remain responsible for both design and construction.

Neither integrated nor management approaches present utopian ideals as although both pose solutions for those responsible for recruiting Sub-Contractors, they fail to remedy many of the problematic issues faced by Sub-Contractors themselves. For the most part Sub-Contractors continue to be selected primarily on price, and although they may at times be submitting bids to a management contractor rather than a Main Contractor, they remain in a high risk and highly competitive environment and one in which they may be forced to make discount concessions to secure a project. As such they are likely to maintain many of the same motivations and incentives previously held when working within a framework of traditional competitive procurement. This is largely because management and integrated approaches do nothing to address issues pertaining to trust, power and opportunism, at the lower echelons of the supply chain. Factors that each help explain the propensity for many actors to adopt immoral behaviour, and which support the theoretical rationale of Convenient Immorality.

7.9 SUMMARY OF SELECT INTERNATIONAL CONSTRUCTION PROCUREMENT PRACTICES

As in New Zealand, internationally there does not appear to be a model suitable for determining the selection and appropriateness of best practice procurement routes for individual projects (Lædre, Austeng, Haugen, & Klakegg, 2006). Yet there remains a widely held belief that choosing the correct procurement route could on average reduce construction costs by five per cent (Love, Davis, Baccarini, Wilson, & Lopez, 2008). Further, it is accepted that the correct procurement model is essential for project success for amongst other things it determines who is responsible for risk, and ultimately impacts upon the level of cooperation that exists between the Client and Main Contractor, and importantly the Main Contractor and any associated Sub-Contractors (Lædre, 2005). It is difficult to understand therefore why it is that international practice has not moved away from the traditional lump sum tender. Searching international literature reveals that while variants of traditional procurement, integrated procurement and management procurement do exist, the use of the latter two methods remain limited when compared to

the traditional tender. For example, the traditional tender still accounts for 95% of all public construction procurement in Western Australia, 90% of all public projects in Queensland (Love, et al., 2008), and over 80% in the Netherlands (van de Rijt, Hompes, & Santema, 2009). Interestingly the Australian and Dutch examples may offer some insight as to why the industry maintains with the status quo. Clients procuring construction within the public sector are normally constrained by guidelines that must be adhered to, there to promote and facilitate both competition and transparency (Boes & Dorée, 2008); unfortunately this creates a competitive environment that effectively reduces cooperation (Vennström & Eriksson, 2010), thus reinforcing and propagating an industry driven by competitive tendering and an ingrained culture of mistrust and self-interest.

Although the uptake and implementation of innovative procurement practices internationally has been limited, they do nevertheless exist. Supply chain management (SCM) has been recognised for the many innovative benefits it can offer to the construction sector such as reducing the industry's fragmented and adversarial nature and at the same time integrating systems and processes, engendering cooperation (Saad, et al., 2002; van de Rijt, et al., 2009). The Performance Information Procurement System (PIPS)(Kashiwagi, 2010; Kashiwagi & Byfield, 2002) is a procurement method that not only incorporates many of the aspects of SCM, but which also has the objective of recruiting the best contractor for a project, whilst maximising their performance and reducing the level of Client management (van de Rijt, et al., 2009).

In 2002 the Dutch construction sector came under scrutiny following media reports that collusive practices and bid rigging were costing the tax payer €0.5 billion annually (Dorée, 2004). The subsequent parliamentary inquiry did not corroborate the previous allegations, but found that the government was partly at fault because of their failure to produce a consistent policy appropriate for the construction sector (van de Rijt, et al., 2009). The net result was an industry refocused upon the market driving competition through lowest price tenders. Since then there has been considerable discussion and debate within the Netherlands as to how to tender and maintain competition using criteria other than price (van de Rijt, et al., 2009). Many have argued that rather than relying predominantly upon the lowest price tender as a determinant of value, that other factors such as quality, and a

contractor's previous performance may be more effective indicators of the success of a project upon completion (Duren & Dorée, 2008).

Some national construction companies within the Netherlands have introduced PIPS, and best value procurement principles moving away from traditional procurement, but their full implementation and acceptance is still a long way off (Boes & Dorée, 2008). PIPS was developed to mitigate the risk to construction from non-performing Contractors while optimising value through a competitive price and a quality product. The underpinning tenets of PIPS are that: (a) past performance is a good indicator of future performance; (b) experience is measureable in terms of a contractor's ability to predict rather than react; (c) a measureable correlation exists between a site foreman's capacity to predict, handle and plan for risk and performance; and (d) owners can limit their risk by interviewing and discriminating between Contractors (Kashiwagi & Byfield, 2002). PIPS utilises five information filters to reduce the likelihood of poor performance:-

1. Scores allocated to previous projects referees reports will identify poor performers and disqualify their bid, and highlight any need to improve performance prior to further consideration.
2. The Main Contractor tendering for a project is obligated to identify risks, namely those of not being on schedule, on budget with the required quality expectations, and how they will mitigate against them.
3. Only the optimal solution is chosen, i.e. the best contractor for the project.
4. The Main Contractor prioritised as the most suitable for a project is expected to review specifications and documentation for a project with their specialist Sub-Contractors, to coordinate services and in the process highlighting discrepancies, areas for improvement. After subsequent agreement and signing of contract documents, only variations outside of the project scope will qualify for reimbursement.
5. The Main Contractor's score is not only rated on his past performance, but importantly also that of his Sub-Contractors (Kashiwagi & Byfield, 2002).

Some of the major differences between a traditional tender and PIPS are that firstly under a traditionally procured project, it is a Client or their representative that directs a project

through the use of specifications, controls and audits of Contractors work, with no transfer of accountability for design to the contractor. Standards specified as a minimum by Architects and Consultants are interpreted as the maximum by Contractors. Inexperienced Contractors are incentivised to submit low tenders when working on a traditional tender, and expect to recoup variations later in the project after they have been identified. When working within a PIPS regime, experienced Contractors will identify short comings in the project scope and design prior to the contract award (Sullivan, Kashiwagi, & Kashiwagi, 2010).

The recognition of PIPS as a viable procurement method for construction is growing. The General Services Administration (GSA) in the USA, who with the exception of the military are the largest buyer of services in the country, use PIPS as a means of transitioning from a lowest cost procurement environment to one that reflects best value construction procurement (Meyer, 2010). This GSA decision was based on the documented performance of the system (Meyer, 2010), including:-

- Sixteen years of testing on over 700 construction projects.
- Reduced Client risk/project management activities by 90%.
- Improved contractor profitability.
- Recorded 98% of projects on time with no contractor incurred additional costs, time deviations, and has met with Client expectations.
- Over €1 billion of infrastructure completed using PIPS in the Netherlands.

An evaluation of the PIPS method by Duren and Dorée (2008) largely agreed with reports and statements by the creators of PIPS regarding its performance. Research conducted on the outcomes of over 400 PIPS projects revealed that 93.5% of projects finished on time, with 96.7% within budget, 91% of projects incurred no charges for additional work, whilst 94% of projects met with the expectations of the Client (Duren & Dorée, 2008).

While the outcomes of projects procured via PIPS is impressive, it has been said that the most significant advancement in the potential for improved performance in the construction sector comes from the notion of partnering, or as it is sometimes referred to, collaboration (Omran & Druica, 2011; Wood & Ellis, 2005) or Relational Contracting (Rowlinson & Cheung, 2008). This stemmed from the seminal UK government reports of Latham (1994) and Egan

(1998) and most construction procurement studies continue to cite these two reports. As with PIPS, partnering is an attempt to move the industry away from the traditional culture of adversary, to one that promotes trust and cooperation (Bygballe, Jahre, & Swärd, 2010).

The UK National Audit Office (NAO) report 'Modernising Construction'(Bourn, 2001), viewed one of the challenges facing the construction sector as being that of improving construction performance by meeting Clients' objectives with lower building life costs. This would involve managing risk, minimising waste, adding value whilst improving buildability through integrating the supply chain including Clients, Architects, Consultants, Contractors and Sub-Contractors. The UK government have moved away from the principle of lowest cost, their procurement advice now being *"Whole life cost takes into account the cost of over time, including capital, maintenance, management, operating and disposal costs. For complex procurements, whole-life cost can be very different from initial price"* (Treasury, 2007). This refocus upon the acceptance of greater capital (Capex) expenditure to reduce future operating expenditure (Opex) has support from the Improvement and Development Agency who argue that the ratio of Capex to Opex over the life of a building is 1:5, hence for every £1 spent constructing a building £5 is spent on maintenance (Agency, 2009).

It has been estimated that the adoption of collaborative practices, such as partnering based upon equitable risk sharing, competitive practices, transparency, and the early involvement of the supply team within the design process will produce significant benefits, including completed projects with greater operational efficiency and on-going savings throughout the life of the building. Furthermore, collaboration between supply chain members has been identified in studies to reduce the initial cost of construction by thirty per cent (Bourn, 2001). Adopting and implementing collaborative working principles requires a major industry shift, and for industry members to embrace the following principles (Latham, 2005):-

1. A cultural change embedded across the Client organisation and the entire supply chain.
2. Early contractor involvement (ECI), including specialist Sub-Contractors, at the earliest possible occasion, to exploit any opportunities for innovation and value.

3. The maintenance of competition within partnering arrangements, ensuring commercial pressure to achieve cost reductions and quality improvements.
4. Payment certainty for the supply chain to maintain confidence of supply chain partners and ensure the continuation of investment in capacity and innovation.
5. Robust, integrated and planned management of project handover to mitigate the risk of failure.

A major obstacle that a party subscribing to collaborative procurement has to overcome is mistrust. Traditional procurement predicated short term focus and the tendency of Contractors to change supplier between projects as a consequence of cost. Partnering alters motivations away from financial rewards to the anticipation and expectation of on-going work on other projects with the same partner (Eriksson, Nilsson, & Atkin, 2008). Ongoing relationships minimise the likelihood of opportunistic behaviour and replace this with trust alleviating the necessity for monitoring and control of partners, while at the same time stimulating cooperation (Bresnen & Marshall, 2000a; Rowlinson & Cheung, 2008).

Projects procured under various partnering arrangements within the UK construction industry have been proven through many demonstration projects to provide other benefits over and above cost reductions and improved productivity. Quality of finished projects has been seen to improve, accident rates amongst workers have reduced, staff turnover is three times better than the industry average, and projects are completed in less time than those procured under the dominant traditional tender. Finally, the workforce have become more satisfied and better qualified (Excellence, 2004).

Although partnering has been widely promoted and lauded within the UK, the traditional procurement method remains the most popular. Although government policy now dictates best value over best price, the public sector which constitutes 40% of all construction procurement has not yet fully embraced the concept of partnering and those responsible for public construction procurement remain fixated on lowest cost, not best value. Secondly, the industry capability is not seen as being adequate, with very few leaders capable of promoting a vision sufficient to engage employees to think outside of their own discipline. The industry has a low profile with a poor image and therefore finds it difficult to secure the services of motivated high quality staff. Also, the delivery model has not been widely

accepted. Clients are too often influenced by those Consultants content to promote traditional procurement, whilst the Client remains unaware of the potential benefits that collaborative procurement could bring to the project. Contractors are also recruited late in the process, with the focus on the lowest price, missing the opportunity to garner their input and fully integrate the design. Moreover, Main Contractors' approach to procurement is such that they would rather mitigate exposure to risk by passing it down the supply chain, than extracting opportunities from their Sub-Contractors that potentially could add value through integration. Finally, the concept of partnering has found difficulty gaining major traction or broad acceptance within the industry because of the industry structure. Large firms in the UK construction industry account for fifty two per cent by value of all construction work and thirty six per cent of employment, but significantly only seven per cent of all contracting businesses. Minimal vertical integration ensures that subcontracting is likely to remain the most popular work method. This will continue to limit communication, minimise innovation, and increase fragmentation. The lack of a single industry voice continues to be a problem. Too many industry bodies with self-serving interests continue to espouse messages which are often contradictory, and focus upon protecting their own professional discipline (Wolstenholme, 2009).

In the USA the construction industry has also encountered many of the same problems that have been encountered elsewhere associated with the traditional tender. Productivity in the sector is especially poor; the construction industry was identified as the only non-farming industry that had witnessed a decline in productivity since 1964. Over the same period all other non-farming activities saw their productivity increase by over 200%. In addition the construction industry is said to produce 30% waste (AIA, 2007, 2010). The American Institute of Architects (AIA) like others agree that the traditional tender creates inefficiencies, supported by the isolation of individual disciplines and responsibilities. They also perceive the misalignment of goals and objectives as being a fundamental reason for the poor performance of the sector. They posit that traditional procurement delineates participant success from project success, going on to suggest that it is very possible that a project can fail, yet individual Sub-Contractors may well have succeeded on the same project. The Construction Users Round Table (CURT) in the USA see that the traditionally procured project produces inefficiencies, errors, omissions, cost overruns and poor

productivity, going on to say that *“the historical reasons for this dysfunctionality are many, including multiplicity of participants with conflicting interests, incompatible cultures among team members and limited access to timely information”*(AIA, 2010). Taking the lead somewhat from the UK construction industry, both CURT and the AIA see collaborative procurement, or as they refer to it Integrated Project Delivery (IPD) as a means of improving performance through the alignment of participants’ objectives (AIA, 2007).

It is apparent from the literature that there is a global realisation that the construction industry should move away from the traditionally procured project. Time will tell if the industry’s objective becomes a reality but at least in some instances such as the USA and UK there is a broad consensus amongst stakeholders that a change is required, and steps are in place, albeit progress is slow.

7.10 CONVENIENT IMMORALITY IN THE CONTEXT OF INNOVATIVE INTERNATIONAL PROCUREMENT

Internationally numerous attempts have been made to implement construction procurement methods as possible alternatives to the traditional competitive tender. Yet, even though there is obviously some degree of acceptance amongst the global construction community that competition equates with less than optimal performance, the traditional tender still pervades.

It remains however, that some of the approaches implemented in the Netherlands, UK and USA over recent years go a way towards addressing some of the issues raised within this study. It is also of some note that all of the alternative approaches discussed in the previous section attempt to overcome the shortcomings of competitive procurement by maintaining closer relationships across the supply chain. Performance Information Procurement Systems (PIPS) for example requires both Sub-Contractors and Main Contractors to jointly review documentation for discrepancies prior to the submission of a fixed lump sum price. This makes both parties accountable for unforeseen design omissions and removes the ability to transfer blame for ambiguous documentation to Consultants post tender award, thus minimising any incentive to seek additional reimbursement for design errors. Whilst an element of competition remains in the supply chain, the evaluation of bids considers multiple criteria with a view towards performance rather than the unbalanced preferential weighting given to price in traditionally procured projects. PIPS is an approach that ensures that the Sub-Contractor contingent of the supply chain has a voice, allows the Client to benefit from their design contributions and as such even though contractually they remain bound to a Main Contractor Sub-Contractors are no longer in an arm's length only relationship with the Client.

Collaborative procurement, like PIPS, seeks to achieve efficiencies from closer and iterative supply chain relationships, akin to Davis et als., (2004, pp. 20-21) concept of the 'Extended Enterprise', and their assertion that organisations can accrue a competitive advantage "[f]rom a firm's ability to quickly utilize the entire network of suppliers, vendors, buyers, and customers.Members view that their destinies are interdependent". This type of

procurement has had some success, but has up until now failed to overcome the dominance of traditional procurement, and is not without its problems.

Any collaboration is likely to have many stakeholders; it is the diverse nature of these same stakeholders that promotes what Huxham & Macdonald (1992) have termed 'Collaborative Advantage', which they posit is "Meeting an objective which no individual organization could have met alone and achieving the objectives of each collaborating organization better than it could alone". As would be expected within a collaboration some stakeholders will be known to each other, partners who for example have reciprocal agreements, or who come together because of successful relations in the past (Li & Rowley, 2002). Nevertheless, often for many this may not be the case (Huxham & Vangen, 2000a). Governing and facilitating a process within the confines of an individual organisation can often be fraught with difficulties. Under collaboration these problems, plus others such as diverse organisational cultures, opposing goals and ambitions, ideology, organisational incentives (Sink, 2001) and a lack of trust, planning and vision (Ramesh, Banwet, & Shankar, 2010), have the potential to multiply exponentially. Furthermore they are compounded by stakeholders that are torn between their obligations to individual organisations and those of the collaboration (Hardy, Lawrence, & Phillips, 2006).

Founding members of a collaborative effort often come together from two alternate starting points. On one hand parties can come together that have previously been competitors or former adversaries. On the other hand parties enter into a collaboration that have formerly cooperated and can mutually visualise a desired objective for the collaboration (Ansell & Gash, 2008; Gray, 1989; Huxham & Vangen, 2000b) . Although both positions still present difficulties, adversarial stakeholders start with a distinct disadvantage, needing to spend time building relationships, trust and respect (Ansell & Gash, 2008; Huxham & Vangen, 2000a). Ansell et al. (2008) defined the issues inherent at the outset of collaboration as: stakeholder resource, power inequalities; stakeholder incentives, and prior adversary or cooperation between stakeholders.

Both PIPS and collaborative procurement offer several benefits over traditional procurement methods, but both also have the ability to present an environment analogous to the conditions required to facilitate the onset of Convenient Immorality. As it is not

possible for either to exist in a vacuum that eliminates problems brought about by a lack of trust or asymmetrical power inevitably a lead contractor or other organisation makes the decision to select members of the supply chain, effectively giving them significant power and influence. As such one ingress point exists, through which a plethora of SMEs must by necessity pass to gain access the market. Surely the net effect of this constraint can only be that they will develop the same or other similar survivalist strategies akin to those that have evolved as a consequence of competitive procurement.

7.11 DISCUSSION & CONCLUSION

From a consumer's perspective there are few industries that have such a poor reputation as that of the construction industry. Although populated by a diversity of trades, both large and small, many are unfortunately unjustifiably considered to be untrustworthy and redundant of any moral virtue. Undoubtedly, as in any industry fractions do remain that seek to serve only their own self-interest with little thought for the consequences of their behaviour. However, the vast majority are extremely skilled artisans who have spent many years acquiring their trade or specialisation, who wish only to make their own contribution to society and earn a living from doing what they know best, in what ordinarily is a highly competitive environment.

To meet this end the vast majority of actors or their organisations need to transgress the complexities of the industry procurement process to obtain access to the market. With most construction companies long since defaulting to the now common model of subcontracting out all but a small fraction of the building work, many large main contracting companies have, it is often said, become more akin to project management organisations than builders per se. They nevertheless continue to be the organisations Clients go to when they require new construction.

The preponderance for Clients to seek out main contracting companies to construct their new buildings is understandable, after all builders build buildings, or at least that is the public's long held perception. Even though many in the construction community argue that the adoption of the Sub-Contractor model, which has now been facilitating construction for many decades suggests otherwise. The reality is such that often up to ninety five per cent of

the value of any construction project is attributable to Sub-Contractors, albeit overall responsibility and contractual obligation normally rests with the Main Contractor.

The very nature of the industry is what Charles Fine would term as one of a '*slower clockspeed*' (Fine, 1998, p. 7), an industry which unlike those such as computing or entertainment takes a relatively long time to adapt to changes and evolve. A point clearly demonstrated by the number of reports, directed towards the construction sector, written over several decades calling for change. Other relatively slow evolving industries such as vehicle manufacturing have, over the years, managed to reevaluate their systems, processes and controls to such a degree that efficiencies and profitability borne from effective supply chain management has been increased accordingly with the time from car design to market drastically reduced. In comparison the construction sector is poorly lagging, restrained by the same problems that have been evident for decades, resulting in poor value for Clients and very often low single digit margins for construction companies and Sub-Contractors alike.

It has long been recognised that for the industry to become more efficient and improve what are conceivably inherent inefficiencies that it needs to align itself more with procurement practices used in other sectors. This evolution however has yet to materialise, with any adoption of the much lauded notion of partnering or collaborative procurement making little inroads into international procurement projects. Even worse, the limited progress that has been made to date appears to be regressing, with many actors reverting to type and the traditional competitive tender. In the context of the New Zealand construction Industry this study found very little evidence amongst the construction community of the adoption of collaborative procurement methods. Indeed very few interview respondents had any cognisance of the meaning of the term, often confusing it with what is commonly referred to as '*negotiating contracts*', or in other words agreeing terms directly with a Client to the exclusion of competitors.

Competitive tendering is almost de rigeur when it comes to electing a construction procurement approach in New Zealand. Partly because the public perception is that the competition that supports it not only results in identifying the lowest price, but also the best value for the Client. This position is supported by a government procurement policy that in

its need to demonstrate transparency places undue emphasises on competition and cost. However, the eminence of the competitive tender is mostly attributable to an industry culture that remains content with familiarity, and largely ignorant of alternatives. Or as this study also suggests is guided by Consultants, some of whom, being averse to the risk of reputational damage are unwilling to suggest other, often more appropriate approaches.

What those in positions to influence procurement choices often overlook when electing for the traditional competitive procurement model are the unintended consequences that almost always result from their decision. Whilst upon completion, those perceiving a successful outcome may congratulate themselves for a job well done, they are often oblivious to the impact their choice has had upon the project and other members of the supply chain.

Unlike other industries wherein competition ordinarily results in positive consumer outcomes, this study suggests that the same cannot be said of the construction sector. The competitive tender, played out in an environment of intense competition in which multiple competitors can only secure access to the market via a few larger and more powerful organisations, contributes to the industry's inefficiency and poor profitability. Moreover, it does this by incentivising actors, both the powerful and disempowered to unbridle their moral constraints and thus develop strategies and responses to market forces through necessity, which ordinarily would contradict their own, and industry moral norms and conventions.

The morality or at times lack of, evident in construction industry procurement has evolved in response to competitive forces, but more so because of a lack of oversight and investment in education. Much of the literature pertaining to the construction industry talks of it being 'fragmentised', which is undoubtedly true. It relies upon a multitude of self-interested small organisations coming together to cooperate, under the guidance of a self-interested master, for bespoke, one off opportunities and largely constitutes actors who are simultaneously active in several other similar scenarios with other players. This fragmentation has led to an industry whereby each organisation has tended to develop and learn in isolation and heuristically. Moreover, it is one in which its many members are not overseen by an individual regulatory body. The net result is that while organisations may

adhere to building regulations and standards to comply with the functional aspects of constructing a building, they work within their own predetermined boundaries with regards to many other aspects of the construction process, such as procurement. This is especially true of the Sub-Contractor fraternity and smaller builders, who ordinarily emerge and grow out of the ambitions of individuals, whilst maintaining the skills necessary to undertake their particular trade, tend to grow organically without specific business training. As such the competitive procurement process generally proceeds under the somewhat limited guidance of individually interpreted, un-policed, ad hoc unwritten rules.

This thesis presents the theory of Convenient Immorality which at its heart is driven by factors appertaining to mistrust, opportunism, power and ambiguity. On their own each has the capacity to influence organisational behaviour. However, within the context of competitively procured construction, the milieu is such that all of these factors exist within an amalgamation of inter-woven, inter-related competing actors. The effect on the industry and culture is subtle and insidious. While actors tend to view their own morality as just, and generally perceive their day to day business dealings as being righteous, the majority often remain blind to the fact that their own moral virtues may be pliable. Immorality becomes convenient when it serves their immediate interests and the same people acknowledge that their peers also routinely transgress moral boundaries to seek a competitive advantage during the procurement process.

Moving forward, understanding how to mitigate the negative consequences of Convenient Immorality can only serve to improve the performance of the construction industry. Addressing whether alternative and yet to be considered procurement models are likely to be successful in the future is outside the scope of this study. However, what this study has revealed is that numerous contributory factors dictate the strategic behaviours of actors as they seek to firstly gain the award of a contract, and secondly ensure its on-going financial viability. These behaviours have negative implications for Clients' construction projects as well as the financial well-being of other actors either in, or attempting to gain access into the supply chain. The solution, whatever it maybe, necessitates balancing the consumer-supplier inequities that flow from the cyclical supply and demand characteristics of the construction sector with the needs of Clients to achieve value for money while meeting specified design objectives and functionality.

Aspirations of achieving an effective procurement model by necessity need to consider the numerous issues identified in this thesis. The currently preferred competitive tender process breeds a culture that supports self-interest and poor performance borne out of a willingness to rationalise immoral behaviour. Improving the of degree trust between individuals and organisations can only occur over time, and by maintaining closer working relationships on an on-going basis, something that at the same time invariably limits the likelihood of associates acting opportunistically. Power asymmetry will continue to exist in any procurement model, albeit that its influence can potentially be more measured simply by adopting a model that alleviates the ability of one organisation, with a vested financial interest from controlling both the recruitment of the majority of the supply chain and subsequent outward cash flow. These factors, however, need to be weighed against inevitable unintended consequences such as the risk of closer working relationships themselves predicating poor moral judgement and the impact reduced competition could conceivably have upon consumer value.

7.12 RESEARCH CONTRIBUTIONS & IMPLICATIONS

To once again quote Birks et al., (2011, p. 150), “[t]he practical applicability of grounded theory research is the ultimate measure of its value”, and in this regard this study has made several important and significant contributions that will be beneficial to both the construction practitioner community and the wider research fraternity alike. The forthcoming sections of this chapter outline these contributions and any associated implications.

7.12.1 Research Contributions

There is limited evidence of research pertaining to the construction industry that specifically focuses upon the competitive tender, the studies that do tend to evolve around quantitative methodologies supported by data drawn from surveys, which potentially can serve to restrict responses to predetermined criteria. Furthermore, what many studies overlook is the role that Sub-Contractors play in the procurement process. Thus they are often either ignored completely or represented by a sample disproportionate to their relative size. This

study first and foremost contributes to our understanding by capturing data generated from the perspectives of multiple actors across a broad section of the supply chain. It follows a qualitative constructivist grounded theory approach so as to allow respondents working in the field to articulate what they perceived to be relevant with regards to the construction procurement process.

The study also makes significant contributions that it is anticipated will assist practitioners understand not only their own behaviours but also those of other organisations that they either interact with, or are influenced by. Furthermore, the contributions of this study aid researcher understanding of organisational behaviour within a context of intense organisational competition, low trust, high risk and asymmetrical power.

The study highlights for what is thought to be the first time a relationship that exists between competitive procurement, immorality and performance. Whilst previous studies have attempted to address industry performance, a review of the literature has failed to identify studies that attribute at least some of the reasons for underperformance to the immorality of actors. This one, however, whilst binding immorality with performance attempts to explain why actors are, for want of a better word, coerced into acting this way, then discusses how, and importantly why, their actions materialise in the ways they do, and the consequences they have for vested stakeholders.

The second contribution this study makes is related to competition. An established view prevails that equates greater competition with more consumer value, ordinarily demonstrated by price reductions. This, however, within the context of the construction industry at least is a misnomer. The study discovers that intense, unrestrained competition in fact destroys consumer value. Actors recruiting supply chains in the construction industry routinely employ organisations they would prefer not to, or face being uncompetitive. Alternatively, they may maintain competitiveness by leveraging price reductions from preferred actors. Regardless, in both instances suppliers' margins are reduced to sometimes uneconomical unsustainable levels, effectively forcing them to adopt strategic measures to ensure financial viability, thus eroding consumer value.

This study's third contribution to knowledge is the identification of the discreet and idiosyncratic strategies developed by proponents of construction procurement that support

their competitive endeavours. While previous literature has, like this study, identified the propensity of actors within the industry to reveal confidential pricing to third parties, it is maintained that this study is amongst the first to reveal the significance that 'ambiguity' plays in strategic decision making. Actors often consciously seek to garner a competitive advantage from ambiguous design or pricing documentation or by infusing ambiguity into the tender process by submitting obscured bids for projects. The strategic intent of these approaches being to increase the probability of securing a project by submitting an artificially low disguised bid and thus subsequently improving the future financial return by claiming for works additional to the initial bid.

7.12.2 Research Implications

Addressing the findings of this study will have several implications for the many practitioners having an interest in the construction industry. Traditionally individual sectors of the procurement supply chain have tended to act in roles isolated to a large extent from other actors. For example, the first tier of the supply chain will normally hold relationships at the second and third tier, but have minimal contact with the fourth tier. Similarly, the fourth tier will maintain a relationship with the third tier, but no higher levels. The net result of which is that each sector remains unaware of the interests, objectives, motivations and behaviours of the others. But perhaps more importantly they do not necessarily appreciate the extent of the consequences that their actions have upon the behaviours of others.

The study reveals many of the behaviours that organisations implement in response to competitive tendering. As such for those who find themselves in the position of deciding upon a procurement route these findings present sufficient justification to question what has become a propensity to elect the competitive procurement model. There is no suggestion that this means of procurement cannot be effective, but controls must be developed and introduced to minimise the likelihood of value erosion.

For Main Contractors, or any other organisation evaluating the value of submissions, this study has highlighted the need to be more diligent. Currently Main Contractors find themselves under severe time constraints when comparing bids and this often works in the favour of Sub-Contractors who often submit disguised or non-compliant tenders, especially

with regards to complex and technical bids. The time has come that the industry accepts that often Main Contractors are not sufficiently conversant with the technical aspects of many trades, and as such are not truly qualified to assess their validity. Accepting unqualified bids only serves to subsequently fuel adversary when organisations clash over claims for additional works.

Perhaps the most significant implication this research presents for the industry to consider is the role Main Contractor's play in the current competitive procurement model. Unquestionably a need exists for many of the services they provide. However, it is apparent from the findings of this research that the role they currently play contributes to many of the current tensions in the procurement process. For organisations that contribute such a small portion of the relative value to any project the question is why they maintain such a disproportionate degree of power over other members of the supply chain. A model that isolated the financial rewards of Main Contractors from those of Sub-Contractors would go some way towards alleviating at least some of these tensions.

The role that unconstrained competition can have upon organisational behaviour, productivity and performance merits consideration by practitioners and researchers. The construction industry exhibits extremely low barriers to entry, which, when combined with the opportunities presented via competitive tendering sees supply chains being propagated by organisations often characterised as being inexperienced and resource poor, albeit many well-funded resourced and experienced actors are plentiful. It is hoped that this study has brought to the wider attention of the industry and academia the folly of placing too great an emphasis on competition. Competition is unquestionably important for protecting consumer value, but without effective controls and restrictions it can be counterproductive.

Currently the New Zealand construction industry recruits Sub-Contractors to the supply chain predominantly on price, because of relationships or a combination of both. None of which necessarily bares any relationship with predicted outcomes. With reference to the finding of this study, it would be more effective if the industry introduced and adopted some form of best practise guide that better informed some of these crucial recruitment decisions.

7.13 RESEARCH LIMITATIONS

Several limitations can be ascribed to this study, all of which in some way or another will have directly or indirectly influenced the subsequent findings. The first being the selected sample. As with most studies, especially those of qualitative nature financial and logistical constraints influenced the available sample. While respondents were drawn from across New Zealand, the vast majority were from Christchurch. However, this did not limit access to representatives of the largest organisations but could conceivably lead to more parochial and narrowly focussed perspectives from which interpretations have been drawn.

Convenient Immorality is a substantive theory borne specifically from the context within which the data was generated. In this regard its power to predict outcomes in other geographic or organisational contexts is limited. Furthermore, the study was bound to a particular aspect of the construction industry in New Zealand, to the exclusion of several other possible and potentially relevant contexts. Civil construction for example, represents a large contingent of the construction community the majority of who do not ordinarily operate within the arena of commercial, residential and industrial building, which was the focus of this study, but who nevertheless, could have proved to be a valuable source of data.

This study was also limited by the dominance of one procurement method, the competitive tender. Although sampling included organisations throughout the country, there was little evidence or experience of alternative procurement routes from interview respondents. Thus for the most part it was only possible to discuss their experience of procurement processes within the context of one approach.

It was unfortunate that during the process of data generation Christchurch suffered several large and damaging earthquakes, which for a period halted the interview process. Upon recommencing data generation the services of the construction sector were, and have continued to be in extremely high demand for both remedial works and reconstruction. As a result conventional tendering approaches have often been disregarded in exchange for direct negotiations between parties. As at this juncture this study had already commenced, interviews maintained a focus upon traditional procurement methods rather than what became at the time very much an ad hoc idiosyncratic approach. However, it is not known if,

or by how much, this short term change from traditional procurement conventions influenced interviewee responses to questions.

Perhaps the greatest limitation to this research is that posed by the previous professional experience of the researcher. In chapter two I sought to describe my pre-understanding and how I intended to mitigate any detrimental impact it may have had upon this study. I have endeavoured to limit any bias, but nevertheless also recognise that it will have played a part in the process of analysing and interpreting data, regardless of how well-meaning my intentions may have been.

7.14 FUTURE RESEARCH

Several limitations to this study were highlighted in the preceding discourse, some of which have the potential to become the genesis for further studies, necessarily constraining the chosen sample to New Zealand, and largely Christchurch in particular limits the usefulness of the theory developed from this study in other geographical contexts. Furthermore, as the traditional competitive tender is so ubiquitous in New Zealand it presented somewhat of a problem when attempting to probe respondents experiences of alternative procurement methods. Thus an opportunity exists for future research to investigate if Convenient Immorality is a phenomenon particular to competitive tendering, or if indeed it is also evident in, and applicable to other procurement methods.

This study concurs with others that posit that low barriers to entry increase competitive intensity, but the study's findings suggest that rather than benefit consumer value this competition serves to erode it, in the construction sector at least. An investigation to identify if this is peculiar to the construction sector and the associated characteristics of its procurement environment, or if it is also prevalent in other industries and organisational contexts, provides scope for future research.

Convenient Immorality is the consequence of organisational strategies developed in response to the environmental and behavioural conditions prevalent in the New Zealand construction Industry. This study identifies and explains their presence and associated influence, and the role they continue to play in altering the conditioned morality of actors within the substantive context. It has not sought to address what the implications would be

for the construction industry, if some or all of the factors explaining Convenient Immorality could be mitigated. Suffice to say that the development of a procurement approach that accounted for or controlled some of these characteristics could potentially lead to improving the current poor performance of the industry.

Some of the many problems that currently exist in the competitive procurement model ascribe to the lack of formal guidance and rigour surrounding individual organisational approaches. Internationally the Construction Industry Board in the UK introduced the Code of Practice for the Selection of Sub-Contractors (Board, 1997, p. 5), “[a]imed at improving the quality, effectiveness and efficiency of the construction industry”. The effectiveness or adoption of the guidelines laid out herein internationally is unknown. In New Zealand little or no recognition appears to exist amongst industry proponents of this or any other similar document. It is suggested that an avenue of future research could assess the effectiveness of such a document that introduces not only guidance to the recruitment of supply chain members, but also acceptable procurement processes, practices and ethical responsibilities to constitutions of the wider construction industry fraternity.

Convenient Immorality is not a formal theory, “[d]eveloped for a formal or conceptual area of sociological inquiry” (Glaser, 1978, p. 144). It is not generalisable to other contexts but the invitation is open for others to take the findings and relate them to wider environments. On this the final word is given to Glaser (1978, p. 142) with regards to the substantive theoretical development of this grounded theory study: *“This process generates theory that fits the real world, works in predications and explanations, is relevant to the people concerned and is readily modifiable”*.

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APPENDICES

Appendix One Thematic Relationships

Figure A1.1 Proactive Opportunism, behaviours & consequences, categories, sub categories & Properties

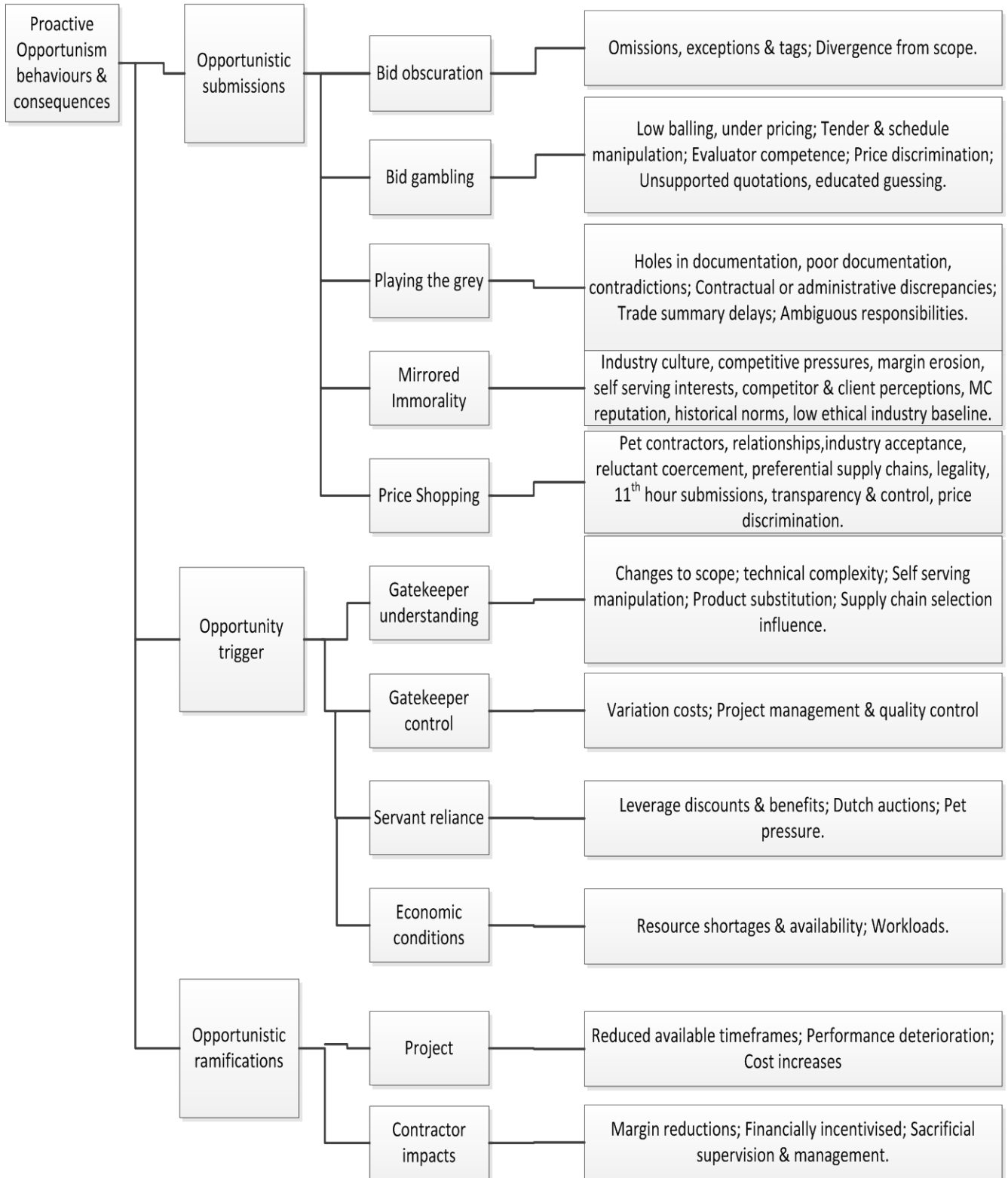


Figure A1.2

Supply chain risk, categories, sub categories & Properties

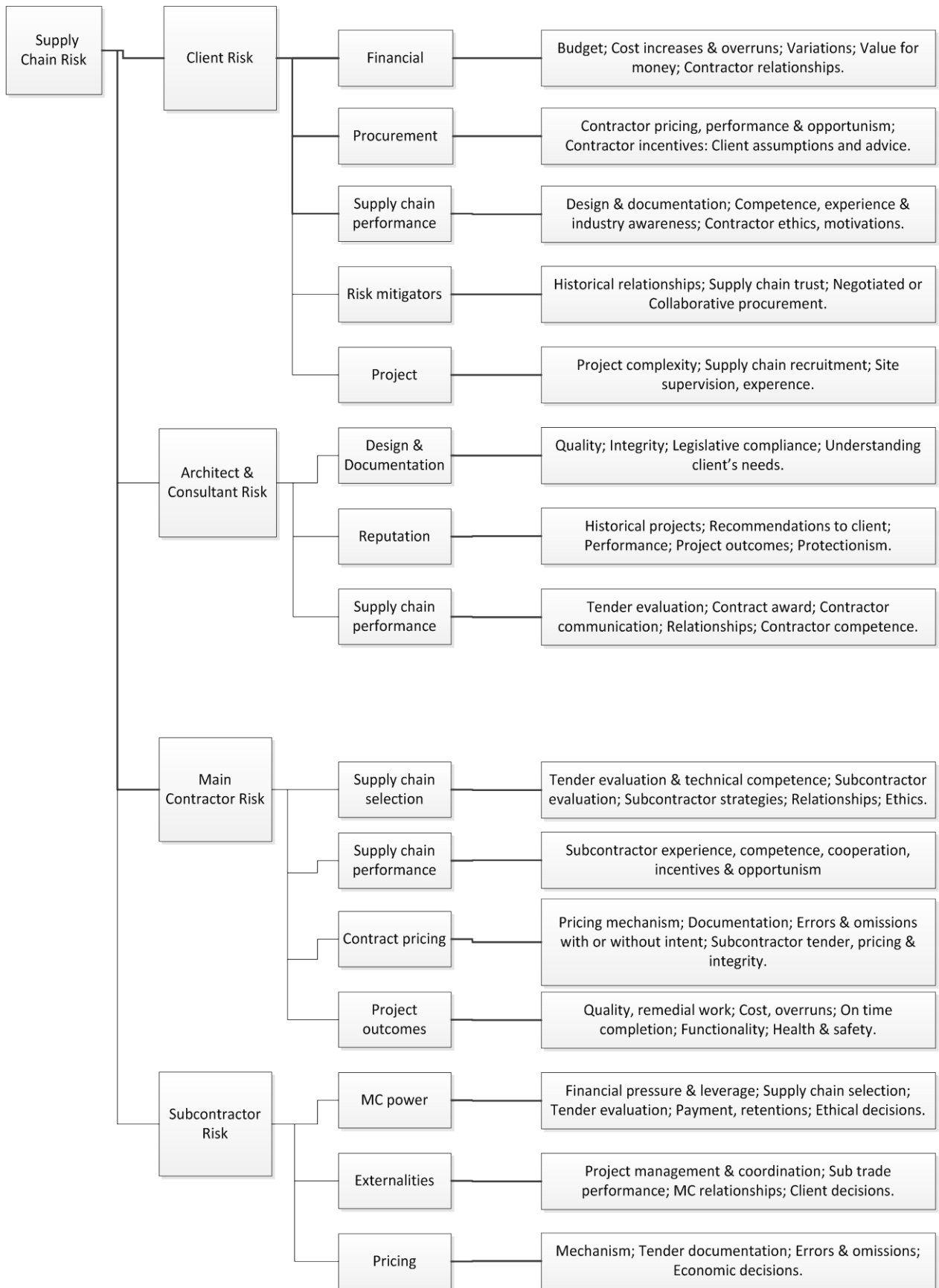


Figure A1.3

Stakeholder Power, categories, sub categories & Properties

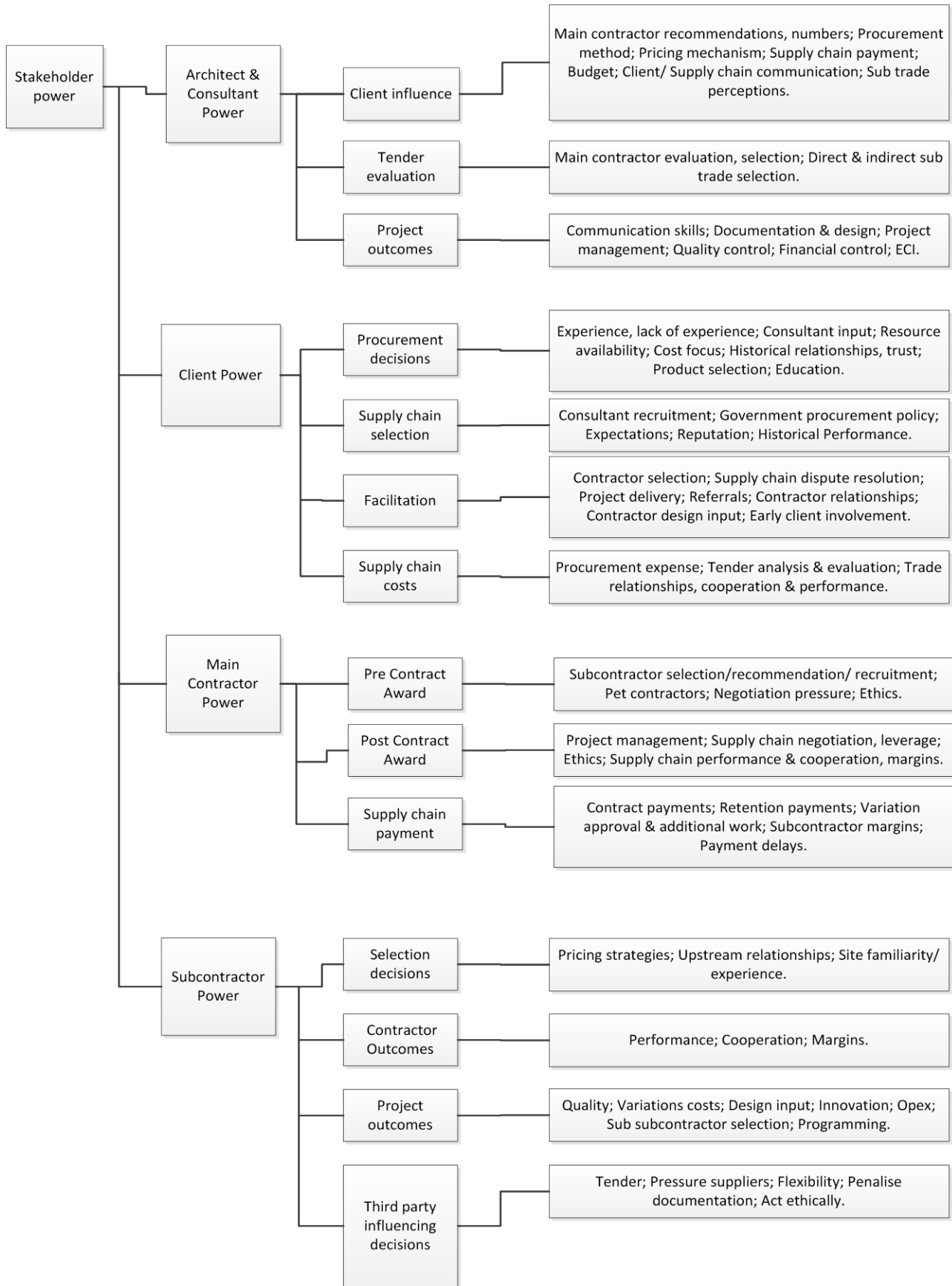


Figure A1.4

Competitive Intensity, categories, sub categories & Properties

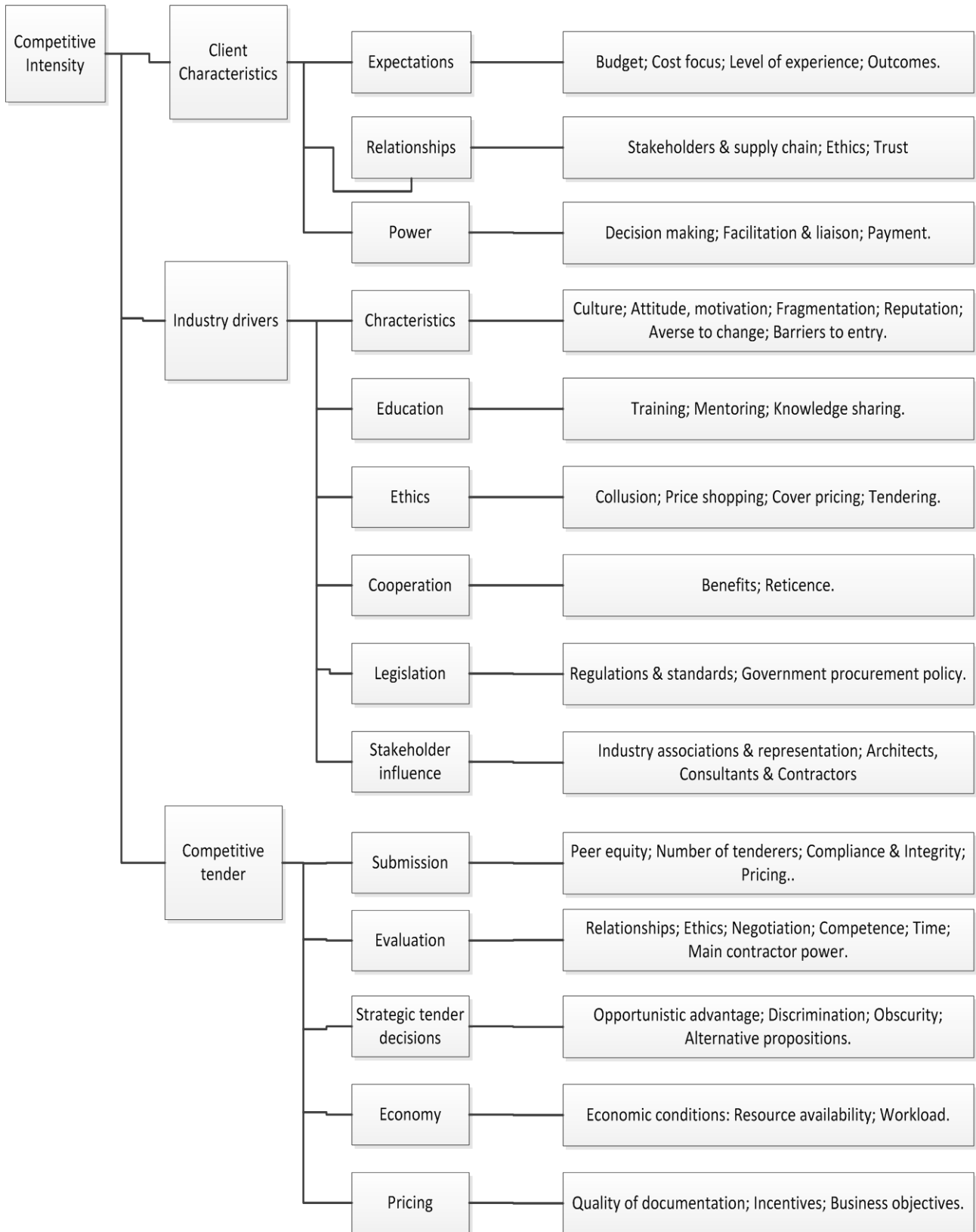
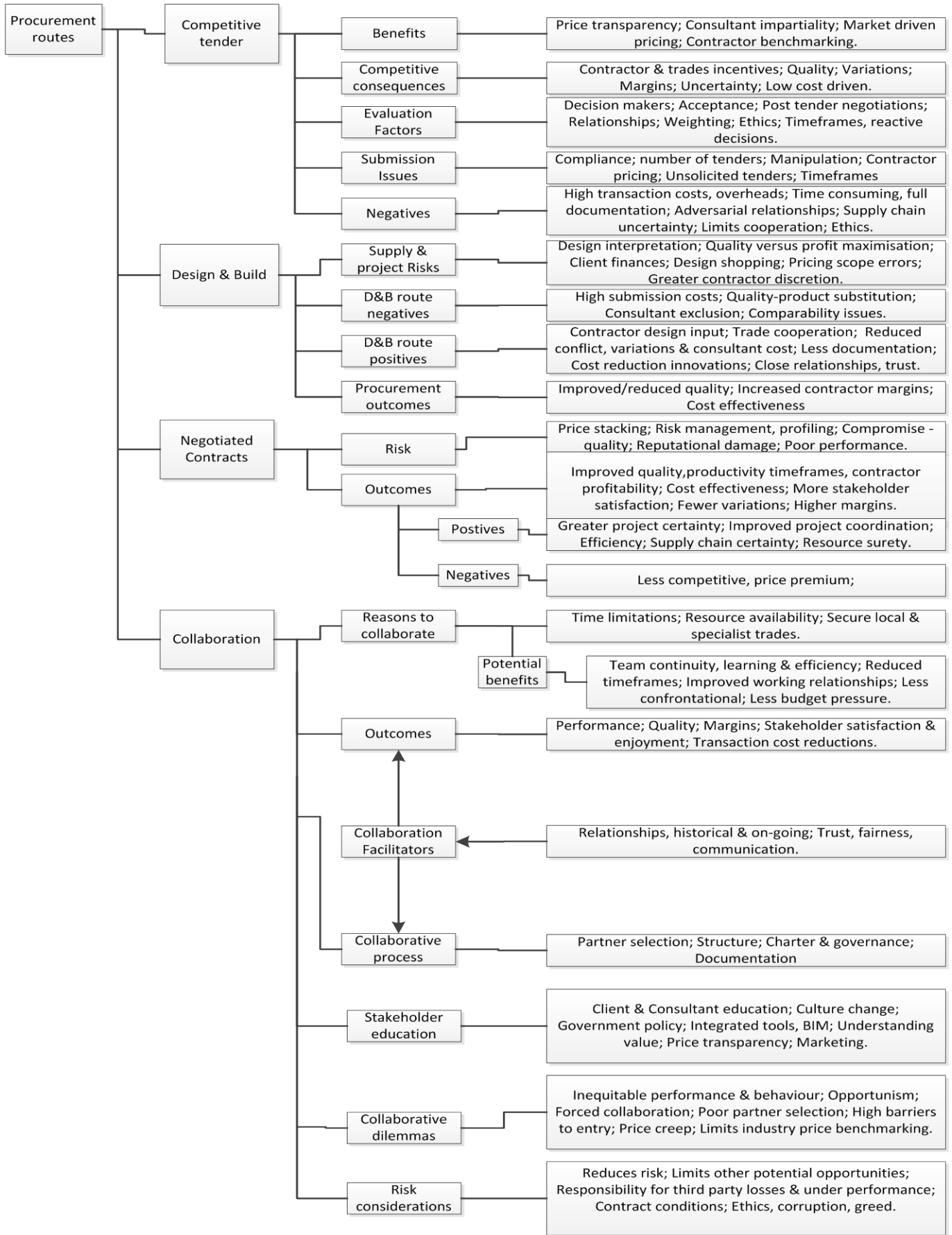


Figure A1.5

Procurement Route categories, sub categories & Properties



Appendix Two Interview Questionnaire Evolution

Interview Questions Main Contractors – Sub Trades, 15-1-11

1. Could you please tell me about the processes through which you secure work?
2. Approximately how much of your work is secured through an open bid tender process?
3. Are there situations whereby you may have preferred tender status, could you tell be about these situations?
4. Do you ever negotiate contracts directly with a Client, Main Contractor? In what type of situation does this arise?
5. What type of problems do you come up against with an open tender situation?
6. How does an open tender affect your company's performance, i.e. time, cost and quality?
7. Does your company let contracts, if so, what form do procurement methods do you normally take, and why?
8. Does a project procured via an open tender impact upon the performance of other trades etc. on a project, if so how?
9. Does this type of tender process benefit or hinder relationships between parties to a construction project?
10. Do you ever undertake projects procured primarily under a collaborative agreement of some sort, for example working in partnerships, either formal or informal with one or more other organisations?
11. Are the outcomes, i.e. time, cost, and quality any different when using this method? If so, how and why.
12. In your opinion what factors within the construction industry are necessary to facilitate greater collaboration between parties?
13. Within the context of the construction sector, what improvements do you think could be made to the procurement process that would be beneficial?
14. Would you be willing to give me contact details of other members of the construction industry i.e., sub trades, Architects, Consultants, Clients that may also be suitable candidates for this study?

Interview Questions Architects – Consultants, 15-1-11

1. Could you please tell me about the processes through which you secure work?
2. Do you ever negotiate contracts directly with a Client? In what type of situation does this arise?
3. Does the situation arise whereby you are employed by a Main Contractor, or someone other than a Client? If so how do you procure/get invited or negotiate this type of contract.
4. If it is your responsibility to secure builders, sub trades and Consultants etc, by what process do you normally use?
5. Do you see any negatives or positives from using a lowest bid or open tender procurement method?
6. Does an open bid tender have any benefits to the Main Contractors or sub trades.
7. What type of problems do you come up against with an open tender situation?
8. How does an open tender affect your company's performance, i.e. time, cost and quality?
9. Does a project procured via an open tender impact upon the performance of other trades etc. on a project, if so how?
10. Does this type of tender process benefit or hinder relationships between parties to a construction project?
11. Do you ever undertake projects procured primarily under a collaborative agreement of some sort, for example working in partnerships, either formal or informal with one or more other organisations?
12. Are there any benefits to be had from garnering the suggestions and thoughts of sub trades at the design stage of a project?
13. Are the outcomes, i.e. time, cost, and quality any different when using this method? If so, how and why.
14. In your opinion what factors within the construction industry are necessary to facilitate greater collaboration between parties?
15. Within the context of the construction sector, what improvements do you think could be made to the procurement process that would be beneficial?
16. Would you be willing to give me contact details of other members of the construction industry i.e., sub trades, Architects, Consultants, Clients that may also be suitable candidates for this study?

Interview Questions Main Contractors – Sub Trades, 6-2-11

1. Could you please tell me about the various procurement methods through which you undertake and complete projects? Approximately what is the range of dollar values for projects that you undertake?
2. Approximately how much of your work is secured through an open bid tender process?
3. Are there situations whereby you may have preferred tender status, could you tell be about these situations?
4. Do you ever negotiate contracts directly with a Client? In what type of situation does this arise?
5. What type of problems do you come up against with an open tender situation?
6. What impact does an open bid tender procurement method have upon maintaining the adversarial nature of the construction industry?
7. Do you at anytime undertake work through either a formal or informal collaboration, with other members of the supply chain, such as Clients, Architects, and Sub Contractors? If so would you please tell me about these situations?
8. Do integrated (D&B) and management orientated procurement methods facilitate greater collaboration between stakeholders?
9. Do outcomes do from collaborative procurement methods differ from the traditional lowest price wins open tender system?
10. How does an open tender affect your company's performance, i.e. time, cost and quality?
11. When your company is in the position to sub contract out work, what procurement routes do you take, and why?
12. What proportion of your workforce on a project would ordinarily be Sub-Contractors?
13. From your company's perspective how would you classify a particular project as being successful or not?
14. In your opinion what would you consider a successful outcome to look like for say Sub-Contractors, Architects, Consultants and Clients?
15. Does a project procured via an open tender impact upon the performance of other trades etc on a project, if so how?
16. What proportion of your annual turnover is spent tendering for projects that you are ultimately unsuccessful in obtaining?
17. Do you think there is any benefit in the construction industry more widely adopting collaborative procurement methods, and if so what factors within the construction industry are necessary to facilitate this?
18. Within the context of the construction sector, what improvements or changes do you think could be made to current procurement methods that would be beneficial, to the industry as a whole?
19. Would you be willing to give me contact details of other members of the construction industry i.e., sub trades, Architects, Consultants, Clients that may also be suitable candidates for this study?

Interview Questions Sub Trades, 2-5-11

1. Could you please tell me about the type of work you undertake, and how you source it?
2. What would be the approximate value of projects you do? How many employees do you have?
3. Approximately how much of your work is secured through an open bid tender process? What would your success rate be? And do you always have formal contracts in place?
4. Do you use any particular strategies to increase your likelihood of winning an open tender project? Or do you know of any strategies used by others?
5. Do you submit the same price to all Contractors?
6. Are there situations whereby you may have preferred tender status, or are a nominated sub contractor could you tell be about these situations?
7. Do you ever negotiate contracts directly with a Client? In what type of situation does this arise?
8. What type of problems do you come up against with an open tender situation?
9. Do you think the industry is ethical or not, why?
10. What impact does an open bid tender procurement method have upon maintaining the adversarial nature of the construction industry?
11. What are your thoughts about retentions?
12. Do you at anytime undertake work through either a formal or informal collaboration, with other members of the supply chain, such as Clients, Architects, Main Contractors or other Sub-Contractors If so would you please tell me about these situations? If not do you think there would be any benefit to doing so?
13. Do integrated (D&B) and management orientated procurement methods facilitate greater collaboration between stakeholders?
14. Do outcomes do from collaborative procurement methods differ from the traditional lowest price wins open tender system?
15. Do you feel that your company's performance is influenced at all when you win a project as a result of being the lowest bidder in an open tender situation? If so how?
16. When your company is in the position to sub contract out work, what procurement routes do you take, and why?
17. From your company's perspective how would you classify a particular project as being successful or not upon completion?
18. In your opinion what would you consider a successful outcome to look like for a Main Contractor?
19. Does a project procured via an open tender impact upon the performance of other trades etc on a project, if so how?
20. What proportion of your annual turnover is spent tendering for projects that you are ultimately unsuccessful in obtaining?
21. Do you think there is any benefit in the construction industry more widely adopting collaborative procurement methods, and if so what factors within the construction industry are necessary to facilitate this? And if not, then why?

22. Within the context of the construction sector, what improvements or changes do you think could be made to current procurement methods that would be beneficial, to the industry as a whole?
23. Would you be willing to give me contact details of other members of the construction industry i.e., sub trades, Architects, Consultants, Clients that may also be suitable candidates for this study?

Interview Questions Sub Trades, 29-5-11

1. Could you please tell me about the type of work you undertake, and how you source the work that you do?
2. What would be the approximate value of projects you do? How many employees do you have?
3. Approximately how much of your work is secured through an open bid tender process? **What would your success rate be?** And do you always have formal contracts in place?
4. Do you use any particular strategies to increase your likelihood of winning an open tender project? Or do you know of any strategies used by others within the industry?
5. Do you submit the same price to all Contractors? **Why or why not?**
6. Are there situations whereby you may have preferred tender status, or are a nominated Sub-Contractor, could you tell be about how these situations arise?
7. Do you ever negotiate contracts directly with a Client? In what type of situation does this arise?
8. What type of problems, if any, do you come up against with an open tender situation?
9. Do you think the industry as a whole is ethical or not, why?
10. It has often been said that the Construction industry is adversarial. What impact, if any, do you think that an open bid tender procurement method has upon maintaining this?
11. What are your thoughts about retentions?
12. Do you at anytime undertake work through either a formal or informal collaboration, with other members of the supply chain, such as Clients, Architects, Main Contractors or other Sub Contractors If so would you please tell me about these situations? **If not do you think there would be any benefit to doing so?**
13. Do outcomes do from design & build or negotiated contracts differ from the traditional lowest price wins open tender system? **Do you think they foster greater collaboration?**
14. Do you feel that your company's performance is influenced at all when you win a project as a result of being the lowest bidder in an open tender situation? If so how?
15. In your opinion does a project procured via an open tender impact upon the performance of other trades etc on a project, if so how?
16. When your company is in the position to sub contract out work, what procurement routes do you take, and why?
17. From your company's perspective how would you classify a particular project as being successful or not upon completion?
18. In your opinion what would you consider a successful outcome to look like for a Main Contractor?
19. How much would you spend each year tendering for projects that you are ultimately unsuccessful in obtaining? **Could you give me an indication of your annual turnover?**
20. Do you think there is any benefit in the construction industry more widely adopting collaborative procurement methods, and if so what factors within the construction industry are necessary to facilitate this? And if not, then why?
21. Within the context of the construction sector, what improvements or changes do you think could be made to current procurement methods that would be beneficial, to the industry as a whole?
22. Would you be willing to give me contact details of other members of the construction industry i.e., sub trades, Architects, Consultants, Clients that may also be suitable candidates for this study?

Interview Questions Industry Lobby Group, 20-6-11

1. What benefits, if any does a traditional open tender present to the construction industry?
2. How does the traditional open tender negatively influence construction?
3. What are the real costs associated with the traditional tender? Where do these costs come from?
4. What are the benefits if any, of collaborative procurement?
5. Is there a downside to collaborative procurement?
6. What are the key factors necessary to implement a successful collaborative project? What obstacles and objections need to be overcome
7. How do transaction costs of a collaborative project compare to those of a traditionally procured project?
8. In your opinion why does the industry continue to favour the traditional open tender?
9. Are there any changes that could be made to the traditional open tender system that would be beneficial to the industry?
10. It has often been said that the Construction industry is adversarial. What impact, if any, do you think that an open bid tender procurement method has upon maintaining this?
11. What are your thoughts about retentions?
12. Do outcomes do from design & build or negotiated contracts differ from the traditional lowest price wins open tender system? **Do you think they foster greater collaboration?**
13. In your opinion does a project procured via an open tender impact upon the performance of trades etc on a project, if so how?

Interview Questions Project Managers, 20-6-11

1. Could you tell me about the type of work you do, and how you source that work? And what is the approximate value of the Projects you undertake? **Success rate**
2. What benefits, if any does a traditional open tender present to the construction industry.
3. Do you know of any strategies used by Main Contractors or sub trades to increase their likelihood of winning an open tender?
4. How does the traditional open tender negatively influence construction?
5. What are the real costs associated with the traditional tender? Where do these costs come from?
6. What are the benefits if any, of collaborative procurement?
7. Is there a downside to collaborative procurement?
8. What are the key factors necessary to implement a successful collaborative project? What obstacles and objections need to be overcome
9. How do transaction costs of a collaborative project compare to those of a traditionally procured project?
10. In your opinion why does the industry continue to favour the traditional open tender?
11. Are there any changes that could be made to the traditional open tender system that would be beneficial to the industry?
12. It has often been said that the Construction industry is adversarial. What impact, if any, do you think that an open bid tender procurement method has upon maintaining this?
13. What are your thoughts about retentions?
14. Do outcomes from design & build or negotiated contracts differ from the traditional lowest price wins open tender system? **Do you think they foster greater collaboration?**
15. In your opinion does a project procured via an open tender impact upon the performance of Main Contractors and sub trades etc on a project, if so how?
16. It has been said to me by some during my research that within the context of the open tender, relative to the value of their work Main Contractors maintain a disproportionate amount of power and have too much influence. Would you agree that this is true, and if so, how could this position be changed?
17. Do you think the industry is ethical, why or why not?
18. From your perspective, how do you view a project as being successful or not upon completion?

Interview Questions Sub Trades, 28-6-11

1. Could you please tell me about the type of work you undertake, and how you source the work that you do?
2. What would be the approximate value of projects you do? How many employees do you have?
3. Approximately how much of your work is secured through an open bid tender process? **What would your success rate be?**
4. Do you use any particular strategies to increase your likelihood of winning an open tender project? Or do you know of any strategies used by others within the industry?
5. Do you submit the same price to all Contractors? **Why or why not?**
6. Do you ever negotiate contracts directly with a Client? In what type of situation does this arise?
7. What type of problems, if any, do you come up against with an open tender situation?
8. Do you think the industry as a whole is ethical or not, why?
9. It has often been said that the Construction industry is adversarial. What impact, if any, do you think that an open bid tender procurement method has upon maintaining this?
10. What are your thoughts about retentions?
11. Do you at anytime undertake work through either a formal or informal collaboration, with other members of the supply chain, such as Clients, Architects, Main Contractors or other Sub Contractors. If so would you please tell me about these situations? **If not do you think there would be any benefit to doing so?**
12. What, if any are the benefits of collaborative procurement?
13. Do outcomes from collaborative projects differ from the traditional lowest price wins open tender system?
14. What are the key factors necessary to implement a successful collaborative project? What obstacles and objections need to be overcome?
15. Do you feel there is a downside to collaborative procurement?
16. Do you feel that your company's performance is influenced at all when you win a project as a result of being the lowest bidder in an open tender situation? If so how?
17. In your opinion does a project procured via an open tender impact upon the performance of other trades etc on a project, if so how?
18. What benefits if any does a traditional open tender present to the construction industry?
19. Do you think there would be any benefit in your tenders being evaluated by a third party such as a consultant, rather than the Main Contractor?
20. Within the context of the construction sector, what improvements or changes do you think could be made to current procurement methods that would be beneficial, to the industry as a whole?
21. Would you be willing to give me contact details of other members of the construction industry i.e., sub trades, Architects, Consultants, Clients that may also be suitable candidates for this study?

Interview Questions Consultants, 14-7-11

1. Could you tell me about the type of work you do, and how you source that work? And what is the approximate value of the Projects you undertake? **Fees**
2. Do you have any idea of how much you spend per year working on projects that you ultimately receive no financial return?
3. What benefits, if any does a traditional open tender present to the construction industry.
4. Are you ever involved in the evaluation of tenders?
5. Do you know of any strategies used by Main Contractors or sub trades to increase their likelihood of winning an open tender?
6. In your opinion does the traditional open tender have any negative influence on the construction sector?
7. Do you have any experience of working within collaborative procurement projects, or design and builds? Do you think outcomes from this type of procurement are any different to those from traditional open tenders?
8. Is there a downside to collaborative procurement?
9. What are the key factors necessary to implement a successful collaborative project? What obstacles and objections need to be overcome
10. How do transaction costs of a collaborative project compare to those of a traditionally procured project?
11. In your opinion why does the industry continue to favour the traditional open tender?
12. Are there any changes that could be made to the traditional open tender system that would be beneficial to the industry?
13. It has often been said that the Construction industry is adversarial. What impact, if any, do you think that an open bid tender procurement method has upon maintaining this?
14. What are your thoughts about retentions?
15. In your opinion does a project procured via an open tender impact upon the performance of Main Contractors and sub trades etc on a project, if so how?
16. It has been said to me by some during my research that within the context of the open tender, relative to the value of their work Main Contractors maintain a disproportionate amount of power and have too much influence. Would you agree that this is true, and if so, how could this position be changed?
17. Do you think the industry is ethical, why or why not?
18. What procurement route would you generally recommend a Client should follow, and why?
19. From your perspective, how do you view a project as being successful or not upon completion?

Follow up Interview Questions, 22-2-12

1. What factors would you hear about or know of within the competitive tender process that you would consider being immoral or unethical? Probe; cover pricing, shopping, fixing, post tender negotiation, price discrimination, tags etc.
2. Within the context of either a negotiated or collaborative procurement route would there be noticeable differences in ethical behaviour? If so what would they be and why?
3. Do the unethical actions of other interested parties within construction procurement impact upon yours or other businesses, or the project? Please explain.
4. What, if any, do you think are the underlying causes that encourage unethical behaviour?
5. If you were aware of unethical practices within the industry that did or did not impact upon you directly, would you take any action? Why or why not?
6. Are you aware of, and do you follow any ethical codes of practice? Probe, are they important?
7. In your opinion do some sectors of the industry behave more or less ethically than others? Please explain.
8. Would your own ethical behaviour be influenced by the other parties you were working with, or perhaps tendering to? If so how and why?
9. How can the ethical standards of the industry be improved, and what do you think the consequences of such improvements would be for the industry? Probe, collaboration.

Interview Questions Clients, 1-3-12

1. Could you please tell me about the processes through which you procure construction?
2. Approximately what proportion of construction is secured via an open or competitive tender?
3. Do you use preferred Contractors? What type of Contractors would they be and why?
4. What type of problems, if any do you come across with a competitive tender situation?
5. How do you evaluate and select Main Contractors and Sub-Contractors?
6. As a Client do you consider that negotiated or collaborative procurement routes offer any tangible benefits, and are the outcomes any different to those of traditionally competitively bid projects ?
7. What are your views on the ethics of the construction industry? Are you aware of, or do you hear of unethical business practices? What are they?
8. It has often been said that the Construction industry is adversarial. What impact, if any, do you think that an open bid tender procurement method has upon maintaining this?
9. What are your thoughts about retentions? Are they necessary?
10. In your opinion does a project procured via a competitive tender impact upon the performance of sub trades etc on a project, if so how?
11. Are you aware of any strategies Sub-Contractors may use to improve the likelihood of winning competitively tendered projects?
12. What would you consider as being a successful project upon completion?
13. In your opinion what would you consider a successful outcome to look like for a Main Contractor and Sub contractor?
14. Do you think there is any benefit in the construction industry more widely adopting collaborative procurement methods, and if so what factors within the construction industry are necessary to facilitate this? And if not, then why?
15. Within the context of the construction sector, what improvements or changes do you think could be made to current procurement methods that would be beneficial, to the industry as a whole?

Appendix Three Ethical Approval & Interview Documentation

Human Ethics Approval

Ref: HEC 2010/161

22 November 2010

Mark Hinton

Department of Management

UNIVERSITY OF CANTERBURY

Dear Mark

The Human Ethics Committee advises that your research proposal “Achieving collaborative advantage in the construction industry supply chain” has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 22 November 2010.

Best wishes for your project.

Yours sincerely

Dr Michael Grimshaw

Chair, Human Ethics Committee

Introductory Letter

Dear Mr

Achieving Collaborative Advantage in the Construction Industry Supply Chain

We are writing to request your participation in a PhD research study on how to achieve collaborative advantage in the construction industry supply chain. Research over the last twenty years has suggested the construction industry move away from the traditional methods of procurement used to facilitate the redevelopment of existing, or construction of new buildings, that is, the open or selective bid tender. Recommending instead the adoption of procurement practices that encourage collaboration or partnering, whilst highlighting the link between collaborative relationships and improved performance, profitability and quality. However for the most part the industry has tended to ignore these suggestions and continues, in the majority of cases to secure and build projects along the conventional procurement route, which is often said to be one that encourages a culture of adversarial relationships and mistrust.

Research to date on construction industry collaboration has been limited to the head of the supply chain, and the relationships between the Client, Architect, and Main Contractor, largely ignoring Sub Contractors, that on some projects are reported to make up to ninety percent of the workforce. In essence the purpose of this study is to understand the relationships and networks that are created as a result of both traditional procurement methods and alternative methods such as design & build, negotiated, novated and management contracts, across the supply chain, from Clients down to Sub Contractors. The objective of our research is to understand how different procurement methods either enhance or hinder collaboration between members of the supply chain. It is expected that this study will identify procurement methods and supply chains that encourage collaboration between organisations, the reasons behind the lack of acceptance or slow implementation of alternative methods, and in addition will identify any correlation between collaborative procurement and improved or decreased performance. A successful outcome will demonstrate the benefits of collaborative procurement to the industry and underline any current industry rational for avoiding such methods. Whilst suggesting systems, controls and practices that could be adopted to negate the current mistrust inherent within the industry and move towards an environment that improves performance, efficiency, quality and profitability.

If you are willing to participate in this study, we will arrange a convenient time and place to conduct an in-depth interview lasting around 60 minutes. The interview will consist of a general discussion around your experiences and opinions in regards to construction procurement, and the notion of collaboration within the construction industry. In some instances there may also be a need to conduct a follow up interview, at a later stage if you are agreeable.

With your consent, we would like to record this interview with the undertaking that it would not be available to anyone other than ourselves and the transcribers. A copy of the typed transcript will be provided to you to check for accuracy and to add any additional comments. If you prefer, the interview can be undertaken without the need for audio recording, with the only record of our conversation consisting of unidentifiable field notes. Names of people and businesses participating in the study will not be revealed and the project has obtained Human Ethics approval from the

University. At the conclusion of the study a summary of the main findings and results will be available if you would like a copy.

We will call your office in the next few days and, if you are willing to participate, we can then arrange an interview time. If you do not wish to take part in this study and would prefer no further contact then please forward an email to Mark.Hinton@pg.canterbury.ac.nz, with your name and decline in the subject line.

Yours sincerely

Professor R T Hamilton

Project Supervisor

Mark Hinton

PhD Candidate

Interview Consent Form

University of Canterbury

Consent Form for Participating in a PhD Research Study

Title: Achieving Collaborative Advantage in the Construction Industry Supply Chain

Researcher: Mark A. Hinton

Supervisor: Professor Robert T. Hamilton

Purpose

The purpose of this research is to improve our understanding of the relationships that may or may not exist between construction industry procurement methods, for example open bid, negotiated contracts and design & build projects, and any associated influence upon supply chain collaboration and performance. The object of this interview is to gain additional insights that explain the limited adoption of collaborative procurement methods within the industry in general. In addition it is anticipated that this study will identify aspects of the supply chain within alternative procurement routes that are successful as a result of collaboration and the factors that support this.

Voluntary Participation

Participation in this study is voluntary at all times. You may choose to not participate or to withdraw your participation at any time. Deciding not to participate in the study will not result in any penalty. If you decide to leave the study before its completion the information you have already provided will be destroyed. Confidentiality is assured; at no time in the study will your or your organisations identity be revealed, and all data will be destroyed upon completion of the study.

Questions

Any questions regarding the study please contact

Mark Hinton

or

Professor Bob Hamilton

Phone: (03) 341 1015

Phone: (03) 364 2467

Email: mark.hinton@pg.canterbury.ac.nz

Email: bob.hamilton@canterbury.ac.nz

Authorisation

I have read the information in this consent form and the accompanying letter. All my questions about the study and my part in it have been answered. I freely consent to take part in this interview. If I sign this form, I do not lose any of the legal rights that I would otherwise have as a subject in a research study.

Printed Name of Interviewee:

Signature of Interviewee:

Date:

I confirm that I have adequately explained the study and that the subject has voluntarily agreed to participate.

Printed Name of Researcher:

Signature of Researcher:

Date:

Appendix Four Interview Schedule

Date	Code	Stakeholder type	Position of respondent	Interview length	Transcribed Y/N	Transcription Word Count
20/01/2011	BDWMKC	Main Contractor	Quantity Surveyor	66 mins	Y	6788
20/01/2011	SCEAHAE	Subcontractor Electrical	Company Director	32 mins	Y	4693
21/01/2011	BANDHB	Client, Health Authority	Capital Projects Manager	30 mins	Y	4414
21/01/2011	BDRWWC	Main Contractor	Quantity Surveyor	27 mins	Y	4080
21/01/2011	ACHGKHK	Architects	Company Director	61 mins	Y	8807
21/01/2011	BDDMPH	House Builder	Company Director	54 mins	Y	10169
7/02/2011	BDQHHC	Main Contractor	Regional Manger	46 mins	Y	4593
7/02/2011	BDPBMZ	Main Contractor	Regional Manger	50 mins	Y	7918
8/02/2011	BDAMHRS	Main Contractor	Company Director	26 mins	Y	3730
8/02/2011	BDPLNL	Main Contractor	Regional Manager	44 mins	Y	6672
9/02/2011	BDRSSC	Main Contractor	Company Director	68 mins	Y	10931
9/02/2011	BDAJMCLS	Main Contractor	Company Director	87 mins	Y	15244
10/02/2011	BDPVECC	Main Contractor	Company Director	55 mins	Y	7836
10/02/2011	BDMWCC	Main Contractor	Company Director	78 mins	Y	12118
11/02/2011	BDPWAWC	Main Contractor	Company Director	44 mins	Y	6038
11/02/2011	BDAJFC	Main Contractor	Regional Manager	33 mins	Y	4695
18/02/2011	BDALLC	Main Contractor	Company Director	46 mins	Y	7381
3/05/2011	SCFMPFFP	Subcontractor Fire Protection	Company Director	49 mins	Y	7963
3/05/2011	SCEMDAE	Subcontractor Electrical	Company Director	101 mins	Y	18523
5/05/2011	SCETRAJ	Subcontractor Electrical	Company Director	56 mins	Y	9784
5/05/2011	SCECAAE	Subcontractor Electrical	Regional Manager	31 mins	Y	4372
9/05/2011	SCPBWWP	Subcontractor Plumbing	Company Director	35 mins	Y	2992
10/05/2011	SCLFRM	Subcontractor Elevators	Regional Manger	62 mins	Y	9261
11/05/2011	SCFBKCF	Subcontractor Fire Protection	Company Director	39 mins	Y	6660
11/05/2011	SCERPCE	Subcontractor Electrical	Company Director	25 mins	Y	3889

Date	Code	Stakeholder type	Position of respondent	Interview length	Transcribed Y/N	Transcription Word Count
17/05/2011	SCERWWHE	Subcontractor Electrical Subcontractor Painting & Decorating	Company Director	94 mins	Y	15843
27/05/2011	SCPPDPCNZ		Company Director	50 mins	Y	9101
31/05/2011	SCFSRACFS	Subcontractor Mechanical HVAC Subcontractor Wall Lining & Plastering	Regional Manager, President of Trade Association	81 mins	Y	13481
2/06/2011	SCDWVTTG		Company Director & President of Industry Association	53 mins	Y	8893
3/06/2011	SCHVMC	Subcontractor Mechanical HVAC	Company Director	32 mins	Y	4988
3/06/2011	SCEBIPB	Subcontractor Electrical Subcontractor Painting & Decorating	Company Director	43 mins	Y	7721
8/06/2011	SCPGWWD		Company Director	44 mins	Y	8035
23/06/2011	BODPCCE	Industry Association	Director	129 mins	Y	21623
23/06/2011	CONEPGLJP	Electrical Consultant	Company Director	42 mins	Y	6808
1/07/2011	SCEPPAE	Subcontractor Electrical	Company Director	74 mins	Y	13752
4/07/2011	CONDJPF	Mechanical Consultant	Company Director	45 mins	Y	7234
5/07/2011	ACHAWWB	Architects	Company Director	53 mins	Y	8960
13/07/2011	ACHPMWM	Architects	Company Director	59 mins	Y	8241
14/07/2011	QSJMRW	Quantity Surveyor	Company Director	44 mins	Y	7169
15/07/2011	ACHDOHM	Architects	Company Director	28 mins	Y	4334
15/07/2011	PMGCBCP	Project Mangers	Company Director	50 mins	Y	8033
25/11/2011	BDWMKC	Main Contractor	Quantity Surveyor	90 mins	N	N/A
23/02/2012	SCFMPFFP	Subcontractor Fire Protection	Company Director	33 mins	Y	5518
24/02/2012	BDAMHRS	Main Contractor Subcontractor Painting & Decorating	Company Director	27 mins	Y	4382
27/02/2012	SCPPDPCNZ		Company Director	25 mins	Y	4392

Date	Code	Stakeholder type	Position of respondent	Interview length	Transcribed Y/N	Transcription Word Count
28/02/2012	SCFABWM	Subcontractor Fire Protection	Regional Manager + Quantity Surveyor	54 mins	Y	8951
29/02/2012	SCFSRACFS	Subcontractor Mechanical HVAC	Regional Manager, President of Trade Association	26 mins	Y	4125
1/03/2012	SCEMDAE	Subcontractor Electrical	Company Director	31 mins	Y	11229
2/03/2012	CLDLUOC	Client, Public Education	Capital Projects Manager	65 mins	Y	11661
9/03/2012	CLCSCC	Client, Private Education	Capital Projects Manager	53 mins	Y	9215