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Towards an infrastructure procurement framework: An initial conceptualisation

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Abstract

This paper is an initial conceptualisation of a PhD project which would seek to develop a infrastructure procurement framework – a policy document which would detail how, and under what conditions, infrastructure procurement contractual arrangements are successful. As it is an initial conceptualisation, the paper will focus on the research problem, theoretical and methodological issues involved in operationalising the framework. In particular it will outline the phases of such a study, together with the methodology necessary for the project to be a success.

This is a working paper. Please do not cite without reference to the author.

Introduction

The planning and provision of infrastructure is one of the key activities of government. Infrastructure and public works account for a significant percentage of government expenditure, and therefore industry income, in Australia. Government is thereby in a position to strongly influence the market due to its procurement policy for capital works and its role as regulator of the construction industry (Hampson and Brandon 2004). Infrastructure issues, such as roads and transport, power, water, defence, and national security have been identified as policy 'hot spots' for the foreseeable future by many government agencies. Increasingly these policy issues are occupying news headlines, as governments attempt to deliver infrastructure projects in complex environments which present competing pressures for resources and attention. Coupled with these external stressors, has been the implementation of a radical shift in the way government goes about doing business.

In the early 1990's policy focus on improving efficiency and effectiveness in government led to widespread contracting-out and privatization of the planning, construction and maintenance of public works and infrastructure. The role of designer, principal and project manager was once universally undertaken in-house by public works departments. In some jurisdictions, this function has been devolved to other government agencies, some of which have little or no experience in construction (APCC 2002), and are then reliant on pre-qualified consultants to provide expertise in the procurement of built assets. Each jurisdiction in Australia has developed capital works procurement policies that regulate the way in which government agencies procure built assets (see Furneaux, Brown, Allan, McConville, McFallan, London & Burgess 2006 for an overview); including various approaches to the way these agencies engage with the various stakeholders involved in construction projects. Rather than proving to be a panacea to difficulties in delivering infrastructure, contracting-out resulted in new problems and difficulties emerged as government needed to develop systems to manage external contractors engaged to deliver infrastructure on behalf of government. Contractors have also experienced difficulty in engaging with government, with increasing complexity, compliance and reporting required.

Recently the understanding that contracting-out and privatization leads automatically to increased efficiency and effectiveness has been questioned. For example, markets can effect the efficiency of contracting-out with some markets conditions leading to increased prices; public values need to be safeguarded as private firms are contracted to deliver public works; lack of organisational capability within government or the private contractor can lead to cost overruns, and poor specification in contracts can lead to drawn out disputes.

Thus infrastructure is a high profile area of public policy which is experiencing increased public scrutiny at a time when government departments are still exploring optimal ways of contracting-out – particularly with new initiatives such as public private partnerships, build own operate transfer and other forms of alternative contractual arrangements. While much work has been conducted in and around the area of contracting-out, opportunity exists to develop an overarching policy framework which will enable the optimal management and maintenance of infrastructure.

This project seeks to identify the critical success factors which can be incorporated into a policy framework for the planning, construction, management and maintenance of public infrastructure. Developing a coherent policy framework for the optimal management and maintenance of infrastructure, while extending research in this area, also facilitates successful practical outcomes for government and industry.

The project seeks to answer the following specific research question:

- How, and under what conditions, are infrastructure asset management contractual arrangements successful?

This research will seek to examine this question in the following research phases and questions:

Phase 1 – Identification of the critical success factors for successful policy environment for infrastructure asset management. *What are the critical success factors for infrastructure management and maintenance?*

Phase 2 – Develop a draft framework (hereafter the Framework) which will then be tested in a number of case studies in infrastructure asset management: potentially water, power, defence, transport. The case studies would test the framework and lead to further clarification and improvement of the framework. *How can these critical success factors be condensed and coordinated into a cohesive framework?*

Phase 3 – Modify the draft framework following testing the theory against actual case studies, together with ways of measuring and operationalising the framework. *How can this framework be refined following testing of the framework against a number of case studies?*

This framework would need further validation to ensure that it would hold across a variety of scenarios, which would require additional funding beyond the PhD. The work would be at a proof of concept stage.

Major Levels of in the Framework

Macro (environmental) Level Analysis

Much of the macro-level analysis projects would examine the environmental, market, political and regulatory, in which the construction or maintenance project would be delivered. The nature of markets can affect the outcomes of construction projects, particularly whether a market is thick or thin (see Ryan et al 2004 for an example). Political and regulatory environment can also affect construction projects: by providing varying levels of uncertainty for construction firms; by providing varying levels of compliance and taxation; by providing for varying numbers of government agencies to be involved in infrastructure procurement (see Furneaux et al 2006 for an example). Government wide - Intergovernmental arrangements, such as financial dependency by a state government on a commonwealth agency, would be examined at the macro level. At this level of analysis, the overarching relational issues are the focus of analysis.

Meso (Firm) level

This level of analysis would examine the Inter-organisational relationships, including similarities and differences, between firms. Issues such as cooperation, trust, coordination, power, values, knowledge transfer, networked relationships seem pertinent here. There are a large range of studies in this area examining networked governance, social networks, power, values, organisational capability, and knowledge transfer. Intergovernmental arrangements, such as having multiple government departments involved in the delivery of projects, or one agency delivering policy outcomes on behalf of other agencies, would be included at this level. Specific implications of the specific project are examined at this level.

Micro (Individual) level

Other authors approach the issue from a 'micro' perspective. For example, focussing on the specific competencies of the individuals involved in managing specific construction projects (see Dainty, Cheng and Moore (2003), or on specific pieces of software.

It is beyond the scope of this paper to provide an exhaustive theoretical basis for the full range of factors involved in such a study. Instead this paper will focus on the meso level, and advances stakeholder theory as an alternative theoretical framework to agency theory in policy analysis.

Theoretical framework

The way that a particular problem is portrayed is critical to the way that it is analysed and resolved. Lakoff (2004) has argued that the 'framing' of a particular problem – the words used to describe it,

how it is set forth, is critical to the way in which it will be addressed. Baumgartner and Jones (1991) argue similarly that the 'image' of a policy problem can affect the types of people who are attracted to attempting to influence the policy outcomes. For example, if the problem is portrayed as a technical one, then technical experts dominate discussion and decision making processes. If, however, the social, political or ethical dimensions of the policies come to the fore, then a wider range of participants are able to enter the discussion and debate (Baumgartner and Jones 1991)

Much literature concerning the delivery, management and maintenance of infrastructure sees these activities as an economic one, or a technical one. A great deal of literature addresses infrastructure procurement through the lens of principal agent theory which posits government and industry as protagonists with vastly different goals from the procurement process. When procurement is presented in this manner, then the policy focus is on how best to ensure that government achieves its goals, usually through exhaustive attention to detail in contracts. (See discussion below for a more detailed analysis of principal-agent theory). Likewise, much attention is paid to the technical aspects of procurement: how to deliver and maintain the infrastructure to a specified level of performance, within a specified budget and time frame.

Take for example approaches to policy evaluation. In Australia, cost-effectiveness and efficiency are the typical measures, with the focus more on inputs and outputs. This does not measure effectiveness of the particular policy, or assess the actual outcomes of a particular policy. For this to happen, measures apart from financial ones need to be developed and implemented.

Figure1 – Policy Evaluation (Department of Finance 1994:8)

Insert Figure 1 from Department of Finance (1994: 8) here

These approaches frame infrastructure procurement as a technical problem or an economic problem. Such approaches are important elements to the success of a particular infrastructure project, and will form part of the overarching framework envisaged as and outcome the research project. However, economics and engineering do not address these well, issues which arise in the process of delivering infrastructure projects – particularly those of values, organisational capability, power, and networks. Such issues are management issues, and deal primarily around the inter-organisational dynamics which affect the outcomes of infrastructure projects. As noted above, it is beyond the scope of this paper to articulate all elements of a policy framework. As a way forward here, this paper will briefly examine the core elements of agency theory, and will then explore stakeholder theory as an alternative way of framing and examining the problem.

Agency Theory

A theory which is often utilised in examining contractual arrangements is agency theory. Much of the agency theory literature has focussed on the relationship between the owners and managers of firms – particularly the contractual relationship which is used to reduce risk, and to control opportunity seeking behaviour, although it has also been applied to relationships between organisations (Eisenhardt 1989). Traditionally, agency theory, or more properly principal-agent theory (Quiggin 1996), has been a dominant theory in the analysis of government engagement with the construction industry. As government is a purchaser of buildings, construction and design firms are seen as the agents of government, who is seen as the principal or client (Quiggin 1996).

Agency theory postulates that people are self-interested at the personal level, and therefore have conflicts of interest in some cooperative endeavours unless these relationships are mediated by arm's length third party transactions (Jensen 1994), such as undertaken and established in construction projects.

Authors such as Jensen (1994) argue that people and firms will behave opportunistically, unless there are incentives or restraints to prevent them from doing so. The focus of much of the financial, contractual, management and economic research has been on this relationship between principal and agent in services and products purchased by government, attempting to optimise the outcomes from principal-agent arrangements. According to Eisenhardt (1989) agency theory only represents a partial view of the world, and ignores a great deal of complexity in society, and in the business environment. This shortcoming can be demonstrated by considering the role of the public sector in major infrastructure initiatives, utilising Public Private Partnerships (PPP). In PPP government can have the roles such as “assessor of infrastructure needs, project manager, facilitator, performance sector, network planner, concession granter, inspector, contract manager, protector of the environment, and representative of the public interest” (Demirag 2004: 23). Simple notions of principal and agent do not allow for the sheer number and diversity of roles that government can play in individual construction projects. As Demirag (2004: 25) argues:

Changes in public and private spheres require interactions between the state regulators, the market makers and the communities which are going to be directly affected ... (including the professionals and their associations). Each has their own self-interests and agendas, realising that, to make any progress towards these self-interests, conflicts between them need somehow to be managed”.

Eisner, Worsham, and Ringquist (1996) argue that agency theory cannot be applied to complex modern bureaucracies as there are multiple agents and multiple principals engaged in the infrastructure maintenance and management process, all at the same time.

As noted above, the way that a problem is framed will strongly affect how it is addressed. Agency theory makes a priori assumptions that people will act opportunistically, with resultant policy focus on highly detailed and specified contracts, and high levels of reporting. Alternative theoretical perspectives exist – particularly stakeholder theory.

Stakeholder theory

A theoretical framework that appears useful in examining these multiple actors in procurement processes is stakeholder theory. This paper outlines this theoretical approach and examines its applicability to a policy framework for successful infrastructure contracting. Stakeholder theory is an alternative to agency theory, and one which is specifically argued as being capable of elucidating the multiple actors in government capital works projects (Newcombe 2003). Newcombe (2003) has argued strongly that research should focus on the multiple stakeholders involved in construction projects, as opposed to other approaches which tend to focus on just a singular client, agent or principal. While many authors approach the concept of stakeholders in construction from the perspective of the construction firm, this paper will utilise stakeholder theory to examine infrastructure procurement policy.

While having its' origins in strategic management, stakeholder theory has been applied to a number of fields of enquiry including corporate social responsibility (Clarkson 1995; Hillman and Keim 2001), education (McDaniel and Miskel 2002), environmental management (Jonker and Foster 2002; Starik and Rands 1995), ethics (Agle, Mitchell and Sonnenfeld 1999), health (Lim, Ahn and Lee 2005), information technology (de Bussy, Watson, Pitt and Ewing 2000; Pouloudi 1999), management (Donaldson and Preston 1995; Greenwood 2001; Ramirez 1998), marketing (de Bussy, Ewing and Pitt 2003), public policy (Brugha and Zsuzsa 2000; Martin 2003), research management (Bunn, Savage and Holloway 2002; Elias, Cavana and Jackson 2002), water utilities (Ogden and Watson 1999), and more recently construction project management (Bourne and Walker 2005; Crawford 2000; Elias, Jackson and Cavana 2004; Newcombe 2003).

Interest in stakeholders has grown considerably since Freeman's (1984) seminal work *Strategic Management: A Stakeholder Approach* was published. Over 100 articles were published on

'stakeholder theory' by 1995 (Donaldson and Preston 1995, p. 65), with many more published since. Increasingly the notion of stakeholder has gained purchase in academic texts, media and government publications (Friedman and Miles 2002). Stakeholder theory is beginning to appear in construction literature (for examples see Phua & Rowlinson 2003, and Newcombe 2003), however it has not yet been strongly explored in public management literature, with only sporadic attempts to utilise this theory, mainly in the 1990s (see Gomes 2004). Donaldson & Preston (1995) note the utility of stakeholder theory to businesses, as firms need to see government as a stakeholder that can impact the outcomes of their business, and develop strategies to influence and engage with government.

As interest in stakeholder concepts has increased, so too has the number of views on the subject (Friedman and Miles 2002). Some attempts at harmonisation of disparate views has been made (eg. Stoney and Winstanley 2001), with Jones' (1995) summary the most widely accepted. Jones (1995) argues that stakeholder theory can be divided into three main approaches: descriptive approaches, which depict "what happens", instrumental approaches which outline "what happens if", and normative approaches which suggest "what should happen". Unfortunately, fruitful discussion of various notions of stakeholder theory have at times been eclipsed by fervent, and sometimes personal, exchanges from proponents of the various views (see for example the exchange between Freeman 1999; Frooman 1999; Gioia 1999a; Gioia 1999b; Jones and Wicks 1999a; Jones and Wicks 1999b; Trevino and Weaver 1999a; Trevino and Weaver 1999b).

In response, Freeman and McVea (2001) called for future stakeholder research to eschew theoretical debate, and instead use stakeholder theory's insights to examine real world problems:

"the time is right to switch attention to a more pragmatic approach that connects a stakeholder approach to management practice" (Freeman and McVea 2001, p. 204) .

Stakeholder theory has a number of important elements including: descriptive accuracy, instrumental power, and normative validity (Donaldson & Preston 1995). Stakeholder theory is descriptive as it describes the competing interests relevant in an organisation; it is instrumental, in that it provides a framework for examining the performance of organisations; and it is normative, in that all stakeholders have intrinsic value (Donaldson & Preston 1995). Descriptive analysis has the most purchase for detailing the analysis of stakeholders in the procurement of infrastructure planning, construction, management and maintenance services.

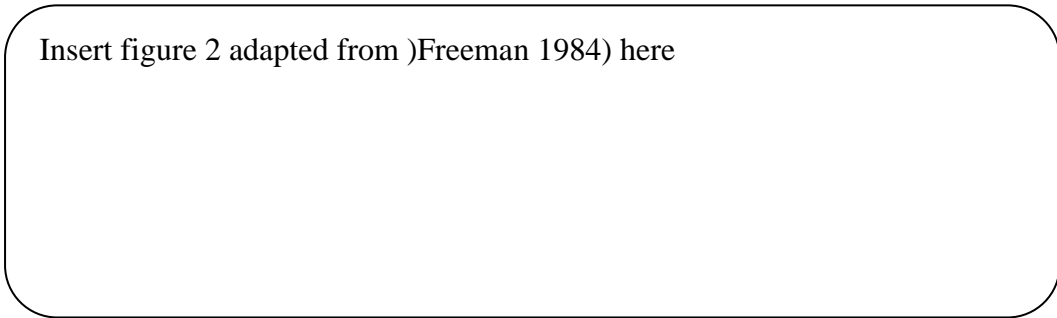
While the role of government in regulating stakeholder behaviour has been discussed in the literature (see for example Jones 1995), the application of stakeholder theory to the policy making activities of government itself is not as strong. While used occasionally in the United States, (Harrington 1996, Heath & Norman 2004) there is little evidence of stakeholder theory being applied to an analysis of government policy in Australia, and uptake of stakeholder theory into the corporate governance literature in Australia has also been weak.

Applying stakeholder theory to construction projects and policies

Construction management, as a field of research, has tended to focus on planning and managing the complex array of activities required to deliver a construction project, such as a road or building (Morris 1994). Being able to manage construction stakeholders expectations and concerns is a crucial skill for managers of construction projects (Vinten 2000), as failure to address these has resulted in countless project failures (Bourne and Walker 2005), primarily because construction stakeholders tend to have the resources and capability to stop construction projects (Lim et al. 2005). Successful completion of construction projects is therefore dependant on meeting the expectation of stakeholders (Cleland 1995). Stakeholders, include clients, project managers, designers, subcontractors, suppliers, funding bodies, users, owners, employees and local communities (Newcombe 2003, pp. 842, 847). As a consequence a robust construction management literature has developed on how to identify and manage stakeholder interests and

relationships. An adaptation of Freeman's (1984) original conceptualization of stakeholders to public works procurement is provided below.

Figure 2 – Depiction of construction stakeholders (adapted from Freeman 1984)

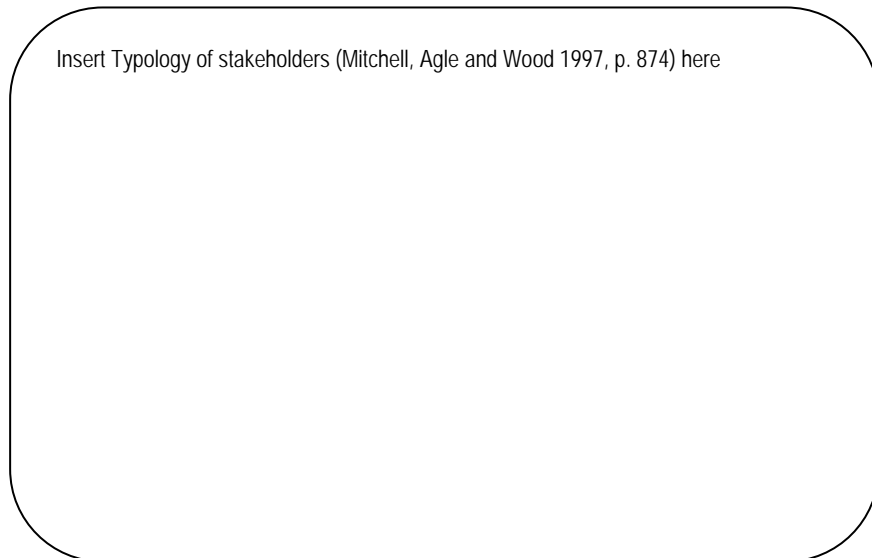


Mitchell, Agle & Wood (1997) argue that a number of factors can affect the importance a certain stakeholder has in a particular project:

- Legitimacy - the moral or legal claim a stakeholder has to influence a particular project;
- Power - their capacity to influence the outcome of a given project; and
- Urgency - the degree to which their claims are urgent or compelling (Mitchell, Agle and Wood 1997)

These factors where developed into a typology of different types of stakeholders.

Figure 3 – Typology of stakeholders (Mitchell, Agle and Wood 1997, p. 874)



Evidently there are different ways of stakeholder influence and different ways of assessing the likely stakeholder salience needs to be developed. A wide variety of approaches have been advanced which approach managing stakeholder relationships as a linear process. The following process has been compiled from a representative sample in the literature (Bunn et al. 2002; Cleland 1999; 1995, p. 151; Preble 2005, p. 415).

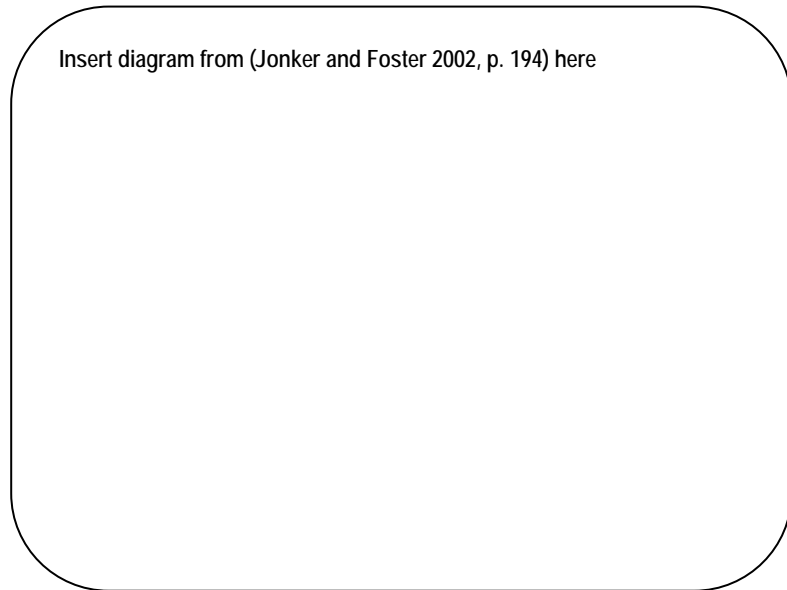
1. Identify stakeholder groups
2. Identify stakeholder legitimacy, interests, urgency, resources and power
3. Examine the dynamic relationship between stakeholders
4. Evaluate their likely impact on a project
5. Identify ways of managing stakeholder expectations and influencing stakeholders
6. Prioritise stakeholder demands
7. Develop organizational responses to manage stakeholders

8. Monitor and control stakeholder engagement strategy

Newcombe (2003, p. 844), agrees, arguing that effective stakeholder management begins “with the identification of key stakeholders... establishing the strategic importance of stakeholder groups then helps organisations determine what the nature of their stakeholder management strategies should be”. Various authors have attempted to operationalise this imperative through deployment of various static grids and matrices which assess the salience of various stakeholders on project outcomes based on their power, legitimacy and urgency.

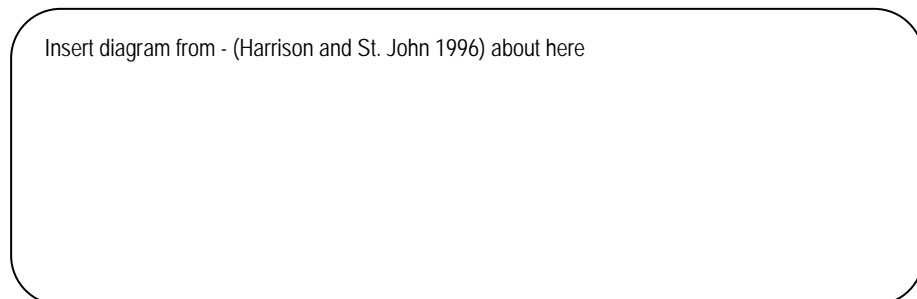
Jonker and Foster (2002, p. 194) provide a version of this by discussing rationality, criticality, and power as a way forward by operationalise the categorisation of Mitchell, Agle and Wood (1997).

Figure 4 – (Jonker and Foster 2002, p. 194)



Other authors argue that a tri-dimensional grid is difficult to operationalise and suggest that urgency and legitimacy can be collapsed into a single dimension of 'interest'. Instead, Harrison and St John (1996) provide a very useful summation of approaches and strategies for managing the various stakeholders involved in procuring capital works

Figure 5 – Strategic Importance of Stakeholders

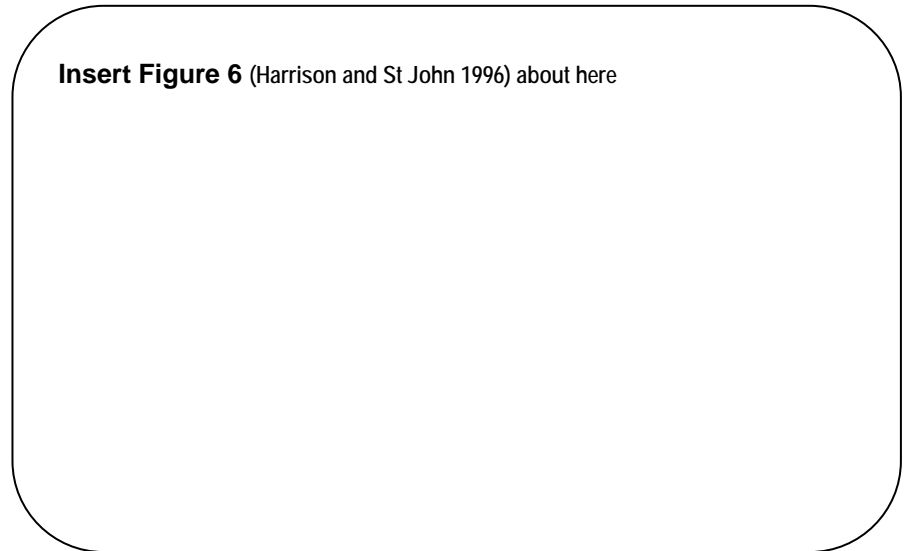


Managing stakeholders in construction projects and policies

There are two main approaches to managing relationships with stakeholders (Freeman and McVea 2001) – buffering and bridging. Buffering involves establishing barriers between an organization and its stakeholders, in an attempt to limit the effect and influence of stakeholders (Harrison and St. John 1996). In contrast bridging seeks to forge a partnership with a stakeholder by establishing common ground and action (Elias et al. 2004). Hillman and Keim (2001) argue that

the latter approach to stakeholder management can build competitive advantage and provide additional resources to the firm. These responses have been ably summarised by (Harrison and St. John 1996) building on the notions of interest and power:

Figure 6 – Stakeholder interest and power matrix



This approach may be somewhat utilitarian in its approach and more ethically, rather than pragmatically, grounded theories of stakeholder management need to be developed (Newcombe 2003). This project would seek to extend extant notions of stakeholder engagement and infuse such heuristics with understandings from the public values literature.

As noted above, stakeholder interests and expectations can be in conflict with each other (Frooman 1999), and various ways are suggested for managing these competing relationships and interests (Jonker and Foster 2002, p. 194). However, in construction projects, the interests of stakeholders can vary over the life of a project, as can alliances between stakeholders (Friedman and Miles 2002). The rationale for these changes include organizational learning, changing values, and specific experiences (Elias et al. 2004). External reasons have also been cited as causing changes in the objectives of stakeholders, such as a modification of community preferences which in turn influences political, environmental and community stakeholders, government policy, and the position of other stakeholders (Frooman and Murrell 2005).

The processes by which stakeholder relations are managed and the balancing of diverse demands of stakeholder groups is a ripe area for further inquiry. Understanding how stakeholder demands may differ and how managers prioritize each would be a valuable area of future research (Agle et al. 1999). An ongoing state of flux in stakeholder interests and alliances in construction projects means that static models are inadequate for enabling project managers to manage stakeholder relationships. The most appropriate way for firms to manage these changing stakeholder relationships in changing environments remains to be developed (Hillman and Keim 2001, p. 136).

Intended Research Approach and Methods

This research is an exploratory study, examining the critical success factors for infrastructure management and maintenance. In order to achieve this, an extended case study methodology will be utilising, which enables the identification of flaws in, and then extending, theoretical frameworks. Having determined the policy framework through extensive literature reviews, the project will then to utilise content analysis, interviews and possibly focus group based research in order to test, and

improve the theoretical framework, in order to identify optimal infrastructure asset management policy.

- Phase 1 – identification of the success factors which would comprise a policy framework (development of a theoretical model)
- Phase 2 – Testing of success factors against specific projects which are considered to be excellent by government (testing of the model)
- Phase 3 – Using the results of Phase 2 to further validate and possibly refine the model

Methodology

Approach

The general approach to the research is qualitative. Additionally, the research is exploratory, as the questions are seeking to provide information to use in analysing a situation (Zikmund 2003:55). For exploratory research, case studies are considered appropriate methodology.

Case study methodology

Case studies provide for in-depth analysis of a particular issue or technology as it impacts an organisation or industry, and can provide strong recommendations for improvements in theory, technology or policy. Case studies in the area of policy have been called for as a way of advancing public policy practice (Osborne & Brown 2005). A case study is “a method for learning about a complex instance, based on a comprehensive understanding of that instance obtained by extensive descriptions and analysis of that instance taken as a whole and in its context” (U.S. General Accounting Office 1990, cited in Mertens 2005:237). Research undertaken in this study followed the process advocated by Stake (2003:155) in that when establishing case studies researchers need to:

1. Seek patterns of data to develop the issues;
2. Triangulate key observations and bases for interpretation;
3. Select alternative interpretations to pursue;
4. Develop assertions or generalisations about the case.

The ‘case’ in this instance is the series of infrastructure procurement projects

Yin (2003, p.40) argues that case studies are useful in exploring a variety of alternative explanations of a phenomenon, such as government regulations. Multiple methods of analysis are typical in case study research and allow for triangulation of data which is important in qualitative research to enhance validity (Eisenhardt 1989: 537). By undertaking multiple case studies, it is possible to compare findings across numerous cases, if there is a consistent framework developed at the outset. Additionally, the multiple case study design facilitates the demonstration of replication, and enables generalisation back to theory or policy (Yin 2003).

Yin (2003b) argues that case studies should include multiple sources of evidence. This enables triangulation of data sources. By utilising both qualitative and quantitative elements to the research process, a ‘conversation’ is envisaged “one method enables the other to be more effective, and, together both methods provide a fuller understanding of the research problem” (Hesse-Biber & Leavy 2006: 317).

Specific methods used to gather data about the case study in this paper are:

- Policy analysis & evaluation – to identify the critical elements of infrastructure procurement
- Additionally, semi-structured interviews may be utilised to develop a fuller understanding of the factors when the policy documents do not make the situation clear.

- Focus groups will be utilised in order to elicit the specific factors which contribute to infrastructure procurement success.

Semi-Structured Interviews

Semi-structured telephone interviews were conducted with senior public servants responsible for various policy areas. Semi-structured interviewing was selected as it provides for cross-case comparability (Bryman and Bell, 2001: 346), and is important when conducting exploratory and explanatory studies – particularly in order to find out what is actually happening in practice (Saunders, Lewis and Thornhill 2000: 245). The sample was based on purposive sampling (Zikmund 2003: 383) as respondents with particular expertise concerning public policy in their jurisdiction were considered the most critical informants for this research. Interviewees were asked questions to clarify details of current policy details in their jurisdiction, and the main reasons for this approach.

Individual informants have been de-identified and any commercial in-confidence information has not been divulged. All interviews were conducted in confidentiality, and the names of interviewees have been withheld. When citing interviewees, the generic term ‘interview data’ is used as a means of preserving anonymity. The names of government departments, government reports, and most government policies have not been obscured as most of this information is already freely available, either on the Internet or in public libraries.

Interviewees were provided with opportunities to review and correct telephone interview summaries, by which means members of the sample checked the data for accuracy, thereby strengthening the internal validity of the research (Mertens 2005).

Policy Analysis

There is no one approach to policy analysis. Policy analysis has been defined as “an applied social science discipline which uses multiple methods of inquiry to produce and transform policy-relevant information that may be utilised in political settings to solve policy problems” (Dunn 1981:35). Policy analysis is by nature, a multi-disciplinary, problem focussed field; and is concerned with context, process, options and outcomes (Parsons 1995). The context of the policy process is addressed in the first stage of the project, by completing a map of the macro policy environment, in which the construction industry operates.

The project however, uses the term policy analysis in two ways: analysis of policy and analysis for policy. This can best be summed up in the following diagram:

(From Parsons 1995: 55)

Analysis of policy		Analysis for policy		
Analysis of policy determination	Analysis of policy content	Policy monitoring and evaluation	Information for policy	Policy advocacy

Analysis of policies involves examination of the content of policies themselves. Content analysis is a technique for gathering and analysing the content of text (Neuman 2000: 292), and is an approach that is ubiquitous in policy studies (Marinetti 1999: 68). The greatest strength of content analysis is that it is unobtrusive and nonreactive, and is viewed as an objective way of obtaining data (Marshall & Rossman 1999: 117).

Inductive reasoning follows a pattern of firstly observing certain phenomena or interactions, analysing patterns and themes, formulating relationships and then developing theory or policy (Cavana, Delahaye & Sekaran 2001). Triangulation can be used between the various data sources

in order to clarify meaning, verifying the repeatability of the observation or interpretation (Stake 2003). An iterative approach is followed where data is analysed until no alternative explanation can be found (Bryman and Bell 2001: 426).

Inductive approaches commence with the known and move to the unknown, and thus do not follow similar approaches to research as outlined in deductive analysis research. This process can be outlined below

Insert Figure7 from (- Bryman and Bell 2001: 426) here

Focus Groups

Focus groups are relatively brief, easy to execute, quickly analysed, and inexpensive to conduct (Zikmund 2003: 117). Focus groups are important in qualitative research as these allow for variance in the interpretation of issues by participants, and to understand the ways these differences are resolved and consensus is built (Mertens 2005). In a group interview the researcher acts as facilitator and manager of the discussion (Saunders, Lewis and Thornhill 2000: 268).

There are a number of reasons for implementing focus groups in case studies. These include:

- *Synergy*: the combined effort of a group will produce a wider range of information, insights and ideas than with the culmination of separately secured responses of individuals.
- *Serendipity*: It is more often the case in a group than in an individual interview that some idea will drop out of the blue. The group also affords the opportunity to develop the idea to its full significance.
- *Snowballing*: A bandwagon effect often operates in a group interview situation. A comment by one individual often triggers a chain of responses from the other participants
- *Stimulation*: Usually after a brief introductory period, the respondents want to express their ideas and expose their feelings as the general level of excitement about the topic increases.
- *Security*: In the well-structured group, the individual can usually find some comfort in the fact that his or her feelings are similar to those of others in the group, and that each participant can expose an idea without being obliged to defend it or to follow through and elaborate on it. One is more likely to be candid because the focus is on the group rather than on the individual; the participant soon realises that the things said are not necessarily being identified with him or her.
- *Spontaneity*: Since no individual is required to answer any given question in a group interview, the individual's responses can be more spontaneous and less conventional. A spontaneous answer may provide more accurate picture of the person's position on some issue. In a group interview people speak only when they have definite feelings about a subject, not because a question requires a response.

- *Specialisation*: The group interview allows the use of a more highly trained interviewer (moderator) because there are certain economies of scale when a number of individuals are interviewed simultaneously.
- *Scrutiny*: The group interview permits close scrutiny in many ways. The session can be observed by a number of people, and the sessions can be tape recorded or video recorded. This allows for the checking of consistency and validity of interpretations.
- *Structure*: the group interview affords more control than the individual interview with regards to the topics covered and the depth to which they are treated. The moderator has the opportunity to reopen topics that received too shallow a discussion when initially presented.
- *Speed*: The group interview permits securing a given number of interviews more quickly than does interviewing individual respondents.

(Hess, 1968, cited in Zikmund 2003)

The sample size of focus groups would be four to six groups per case study, with 7 to 10 people per group. These numbers are considered acceptable for answering research questions in focus groups, although the numbers can be adjusted for specific research questions (Mertens 2005). Approximately four to five questions can be asked effectively in a given focus group, as opportunity for each member to participate is encouraged and discussion amongst group members will limit the amount of topics that can be covered in a single session (Cavana, Delahaye and Sekaran 2001). The largest challenge for effective focus groups is that the facilitator needs to be skilled at managing the conversations while gaining quality data (Marshall and Rossman 1999), while at the same time fostering an atmosphere conducive to answering the research questions (Cavana, Delahaye and Sekaran 2001). Once a facilitator can anticipate what the next focus group is going to say, then there is a probability that theoretical saturation has been reached (Bryman and Bell 2001: 372).

Triangulation

Triangulation can be used between the various data sources in order to clarify meaning, verifying the repeatability of the observation or interpretation (Stake 2003). Triangulation of results would typically involve: secondary data, interviews, and regulations. Triangulation can enable a holistic understanding of the problem being investigated, and facilitate a new or deeper understanding to emerge, which would not be apparent if reliant on one method alone (Jick 1979). Triangulation of data minimises the risk of potential bias that may arise if only one methodology was used on its own (Scandura and Williams 2000, p. 1249). Patton (1987, cited in Yin 2003b) argues that there are four types of triangulation: data triangulation, investigator triangulation, theory triangulation, and methodological triangulation. This project will undertake triangulation of data and method. Additionally, Yin (2003) argues that data can be triangulated between cases, thereby further enhancing generalisability. This process is summarised below:

Figure 8 – Case study methodology for influencing theory

Insert diagram from (Yin 2003b, p.50) here

Validity, reliability and generalisability

Validity, reliability, and generalisability are hallmarks of good research, however, these aspects can be difficult to implement in qualitative studies. Mertens (2005) argues that in qualitative research *credibility*, parallels internal validity in quantitative studies, and can be enhanced by:

- Prolonged or substantial engagement with the object being studied
- Peer debriefing in order to gain perspectives from dispassionate others
- Negative case analysis are actively sought
- Progressive subjectivity
- Member checks – where findings, or better still, interpretation of findings, are sent back to participants in order to check and validate the findings
- Triangulation of data sources – in this case, focus groups, interviews and policy documents and academic literature.

Yin (2003b) outlines how validity and reliability can be enhanced in case study designs:

- *Construct validity* – multiple sources of evidence, have key informants review drafts
- *Internal validity* – pattern matching and explanation building, address rival explanations
- *External validity* – use replication logic in multiple case studies
- *Reliability* – use case study protocol, case study database
- *Transferability* parallels external validity in quantitative studies, and relies upon multiple cases in the one study.

The logic of multiple case studies is that the findings can be demonstrated over multiple cases – therefore replication, not sampling is the key logic (Yin 2003a: 110).

Utilisation of methodologies to the phases of the research

A summary of how these methodologies could be utilised in the research project is outlined below:

	Literature Review	Interviews	Focus groups	Policy analysis	Comments
Phase 1 – Identification of factors	Identify factors in literature	Initial interviews to review major factors identified in the literature	Undertake focus group research to identify & rate success factors	Identification of factors	Triangulation between the literature and focus groups
Phase 2 – Development of theoretical framework		Validation of the framework with expert interviews			Reduce the number of factors identified
Phase 3 – Validation of framework		Interviews on specific case studies	Focus groups to elicit functioning against the factors		Testing and modification of the theory

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