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Project Alliances in Australasia – Differences with other Forms of Relationship Based Procurement

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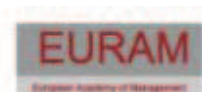
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Project Alliances in Australasia – Differences with other Forms of Relationship Based Procurement

Abstract

Project alliancing for the delivery of Australasian infrastructure and construction projects is a growing form of project procurement. Project alliancing differs from other forms of alliancing in the business sector between entities that form real or quasi joint ventures in an alliance to jointly deliver products such as aircraft, military assets, or information technology products. The purpose of this paper is to highlight how project alliancing as it currently exists in the Australasian context significantly varies from other relationship-based project procurement forms.

The paper extends our knowledge and understanding of this particular alliancing form. The value of this paper lies in its currency in capturing of the lived experience of alliance team members through the rich insights gathered from those intimately involved in them.

The implications of reported results on project management practice is that it highlights key defining cultural ambience differences between these alliances and other types relationship-based project procurement forms that need to be understood by all participants to facilitate project success.

1 Introduction

Relationship-based project procurement has been a growing trend in the Australasian region with many projects embracing partnering approaches, use of public private partnerships (PPPs) as well as project alliances. There has been much confusion among practitioners, clients and the academic community about some fundamental, as well as subtle, differences between the various forms of relational-based project procurement. It would therefore be valuable for these communities to have an authoritative source with which to refer when considering project procurement options. We aim to provide that facility through this paper.

The research question that this paper addresses, relating to the Australasian construction and engineering context, is:

What are the defining differences between alliancing and other forms of collaborative project procurement?

The term alliance, or ally, originally coming from the Latin through French to English, is commonly connected with military operations where cooperation with another is sought for a particular purpose, though it may also relate to other forms of association for a specific purpose including those between companies (e.g. The New Oxford Dictionary, 2001 and New World Dictionary, 1976). As with the use of all terms, when placed in a different context and as a natural consequence of change over time, the meaning it takes on may alter. Because there seems some confusion as to what a project alliance is, and in particular the shape and form it has come to take in the Australasian project management field where alliance agreements are now common for major infrastructure and construction projects, this paper endeavours to clearly define what a project alliance is. Further, where this clearly described form of project team formation may best be used to advantage is then explained and reasoned.

We draw upon results from two recent studies of alliancing in Australasia during late 2010. One study (predominantly focussing on Australian cases) was on the current state of alliancing in Australasia (Mills and Harley, 2010) and the other investigation was our study on the attraction, recruitment, development and retention of alliance managers. One of our aims in that study was to better understand the significant differences between project alliances and other relationship-based forms of project based procurement. We found that project alliances in general are formed in response to a felt need by project owners to deal with fundamental uncertainty relating to the nature of the proposed project and to share risk and uncertainty. This was especially evident in terms of the project scoping and briefing stage and at the project realisation stage for inherently complex projects.

Traditional forms of procurement follow a linear path of problem definition, design brief, tendering, negotiation with successful contractor and then project delivery. The project owner usually has enough knowledge of what is needed to be able to effectively brief a designer, make an effective assessment of bids and then to leave the details of project delivery to the design team and project realisation contractor. In construction

and similar project types where producing a tangible outcome such as a building, or a ship or engineering infrastructure is involved a design-bid-build format (Masterman, 2002) is usual but it could also follow a design and construction (D&C) package approach where the D&C entity responds to performance brief and specifications documentation. However, such approaches assume that the project owner (PO) and/or that owner's representative (POR) does not need to engage closely with the project team realising the project. They do not participate in detailed discussions about the design development or the realisation process in terms of delivery timing of phases/stages or elements of the project nor do they work closely with the PO and/or POR in developing various options to consider once the project contracts have been settled. Traditionally, if the POR wants that level of control then a cost plus form of procurement is often agreed, but traditional project procurement forms tend to result in an asymmetry and linearity of information, expertise and power. At the initial project phase the PO or POR tends to be 'in control' and at the realisation phase the delivery/realisation contractor tends to take the initiative based on instructions and delivers what was agreed to based on a highly transactional approach. Any equal negotiation or joint exploration between POR and delivery contractor tends to be very limited. This can be contrasted to a relationship approach in which the POR often works *with* the non-owner participants (NOPs), such as design teams and the delivery contractor, in a more collaborative manner where advice is sought by the POR of NOPs about options on project design and delivery decisions. There are a number of well known and understood options of relationship-based project procurement and these will be discussed at length in Section 2.2 of this paper. The form that is the focus of this paper is project alliancing.

Wood and Duffield, commenting on alliancing projects, state that "Public and private sector expenditure on infrastructure projects in the Australian road, rail and water sectors has grown significantly from 2003 to 2009, increasing from \$12 billion per annum in the 2003 to 2004 financial year to \$32 billion per annum in the 2008 to 2009 financial year" (2009: p7). This scale of alliancing and its popularity within Australia is corroborated by two recent reports (Blismas and Harley, 2008; Mills and Harley, 2010). Clearly, project alliancing is an important procurement option available to POs amongst the cluster of relationship-based project procurement options and it is important to be clear about why one option may be preferable to another.

We propose seven themes emerging from our data that substantially explain the difference between project alliancing and other forms of relationship-based procurement. A critical principle of difference is that of alliance participants sharing pain or gain whilst holding an holistic view of project success. In this form of relationship-based procurement project success incorporates more than financial bottom line measures and short term impact results for those considered important project stakeholders. This is one of several factors that distinguish project alliances (Pas) from partnering, PPPs, and other forms of relationship based procurement. While the question of what it is like to work within a PA is interesting and was addressed by our research, we also found the more fundamental issue of clearly stating the difference between a PA and its related forms of project procurement was important. Indeed there are minor nuances and differences under the PA umbrella that are worthy of another paper that concentrates on explaining these terms in relation to how they may influence the ambience (mood, feeling and sense of atmosphere) of the organisations (project alliance entities) generated by these procurement arrangements.

The remainder of this paper is structured as follows. Next we outline some of the salient literature to enable us to answer the research question posed earlier in this section. This is followed by an explanation of the research approach adopted in the study partially reported upon in this paper. We then present findings followed by discussion of the findings and their implications for the project management (PM) discipline. The paper concludes with a summary of the paper.

2 Salient Literature

In this section we first discuss the project context that may lead to the types of complexity that prompt use of a project alliance. In Section 1 we stated that traditional transactional procurement forms tend to be adopted where the PO or POR sees little value in engaging with the contracting parties given the task of project delivery. Relationship-based contracting, however, has developed in response to the PO realising that knowledge held by NOPS is vital and needs to be combined with the PO's (or POR's) knowledge of the project's benefit to be realised in order to achieve a more effective project solution. This presents a challenge to the traditional procurement approach because it creates a 'chicken and egg' paradox. PORs need interaction with the NOPS to develop a design brief and project realisation plan that is effective and

capitalises upon innovation and smart ideas that the NOPs can deliver but under the traditional transactional approach they cannot access this knowledge and expertise until they are contracted. Any change in the project brief will then require re-work, compensation for changes in what was contracted for and disruption to project delivery. Even with a cost-plus procurement option, where profit is added to expended costs, the POR often is placed in a vulnerable position—either by an asymmetry of power and information working against effective collaboration or through the incentive to NOPs to maximise cost and thus their profit.

A more open and truly collaborative solution to this paradox is to engage in a relationship-based procurement approach which means engaging the NOPs under a form of cost plus that protects the PO against exploitation.

2.1 Agency Theory and Transaction Cost Economics (TCE)

A PO always pays both a direct and indirect price for getting others to deliver their project. Any make-or-buy decision that results in outsourcing work in any procurement form generally results in fragmentation of interest. Davis, Schoorman and Donaldson (1997) discuss the concept of stewardship in the context of agency theory. Basically, they argue that traditionally agency theory assumes that when an entity (person or organisation) decides to commission some other entity to act on their behalf to procure something that an inherent conflict of interest presents itself. Owners become principals when they decide to contract an agent to do something for them. According to agency theory, once there is a separation in identity from principal and agent two repercussions inevitably follow.

First, there is an imperfect understanding of the requirement because the principal can never fully explain what is required. However explicit the instructions may be there are always implicit assumptions made on the part of the principal making it impossible for the agent to ever be fully clear as to what was requested. In PM terms this takes place during the briefing process and so a highly skilled and effective agent is a person who can best elicit, refine, re-frame instructions and confirm meaning so that there is as small a gap as possible between the explicit and implicit instructions. In complex projects, alliancing is a favoured option, as in this procurement approach an agent's superb skills in empathic appreciation (Leonard and Rayport, 1997; Parker, Atkins and

Axtell, 2008) of the principal are crucially important and available. This is supported by the trust, commitment and authentic behaviour that are present in alliance project agreements and interactions.

Second, agency theory views agents and principals as being in a win-lose struggle where the asymmetry of knowledge, information, power and motivation for an outcome leads to a hidden but real struggle between parties to gain advantage. The principal is hoping to get the agent to perform to the agent's agenda and vice versa. To overcome this tendency, governance structures need to be put in place to protect both parties from exploitation.

The underlying procurement principle is that there is a transaction cost for gaining access to valuable knowledge, insights and expertise held by NOPs. At one end of the contractual spectrum a PO can pay for the cost of tendering, all re-work, and negotiations relating to contract changes in a highly contestable traditional form of procurement. At the other end of this spectrum the PO can pay up-front for expertise and co-development of the project and reduce the cost of tendering and any overall negotiations over changes to original agreed plans. This issue revolves around agency transaction costs.

The well known concept of transaction cost economics (TCE) comes to us from the economics literature (Williamson, 1975; Williamson, 1985;1993). Any transaction incurs a cost: tendering involves costs for both the owner as they search for suitable tenderers and tenderers as they bear the cost of tendering; monitoring and contracts administration involves cost; changing project specifications and scope can result in waste and re-work cost. Any governance cost of using a relationship-based approach, in which the focus on the NOP's expertise and knowledge is paramount over lowest cost project tender, must be compared to the value represented by the quality of decision making as well as the likelihood of a reduction in costs incurred for re-work and contract management, including dispute costs over contract changes.

We need, therefore, to include discussion of collaborative forms of relationship-based project procurement in terms of the access given to POs and PORs to exceptional expertise and responsiveness so that the project context rationale for using a

relationship-based project procurement approach is clear. Only then can we discuss some of the underlying concepts that explain when, where and how project alliancing may be a superior option to other forms of relationship-based procurement. This will require additional discussion of the antecedents to collaboration such as trust and commitment.

2.2 The Project Context

Infrastructure and engineering projects were suggested by Turner and Cochrane (1993) to typically have well understood goals and methods of delivery. However their attempts at project classification on that basis appear to be rather coarse-grained when contrasted with the added dimension of project type offered by others (Shenhar and Dvir, 2004; Shenhar, Milosevic, Dvir and Thamhain, 2007) who consider novelty, complexity, technology and pace as important project context considerations. Howell Windahl and Seidel (2010) have classified PM frameworks and approaches based upon two dimensions of uncertainty (the probability of unexpected events) and consequences (the impact or cost of the unexpected). Projects have also been more recently perceived in terms of complex bundles of projects and associated services where innovation and learning features strongly (Hobday, 1998; Brady and Davies, 2004; Davies and Hobday, 2005). These examples indicate relevance of issues of project complexity, degree of being inherently complicated or their being delivered in a turbulent or chaotic environment.

This leads us to view projects in terms of what is known and unknown i.e. risk and uncertainty. The Johari window, originally developed by Luft and Ingham (1955) is a tool to map awareness. Its dimensions are 'known to self' and 'known to others'. *Public* knowledge is that which is known to self and others. *Private* knowledge is known to self but unknown by others. *Blind* is known to others but not to self and *unknown* is knowledge that neither 'self' nor 'others' are aware of. This idea can be transformed within a PM context into self (project team cumulative knowledge) with known "knowns" and this model can be used to also classify uncertainty and can further be combined with the *Cynefyn* framework described by Snowden and Boone (2007). Figure 1 below presents a transformation of these ideas with a project procurement context

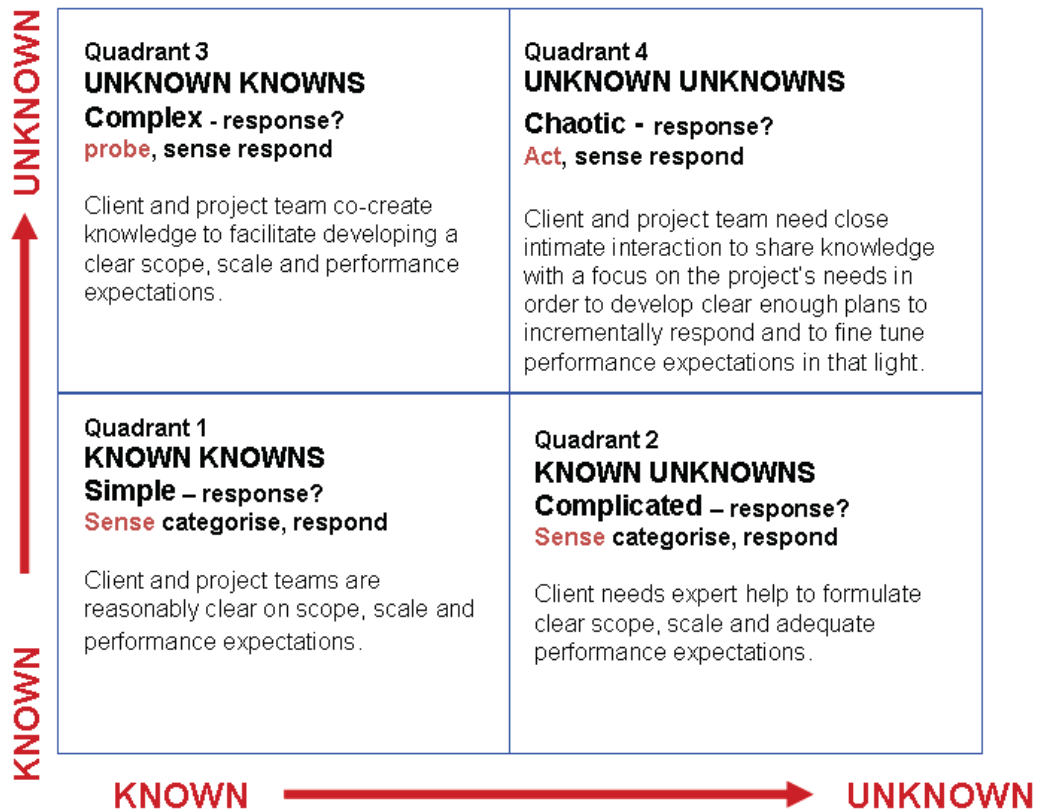


Figure 1 – A Johari Oriented Cynefin Typology of Awareness

The *Cynefin* framework is helpful for leaders attempting to understand the nature of exposure to risk and uncertainty that their operating environment poses. Snowden and Boone (2007) see situations as being mainly ordered or unordered with a small zone of disorder—essentially an island of chaos. They recommend strategies to deal with apparent or perceived disorder by shifting perceptions through use of knowledge and perceptions that can be shared and re-framed so that the disorder slips back into either an ordered or unordered state. If the project objectives and methods are known and understood it is relatively simple to take effective action, using well established protocols and, as indicated in Quadrant 1, a traditional procurement approach may well suffice. Quadrant 2 describes complicated projects which may be effectively dealt with using traditional project procurement approaches as long as the client/project owner seeks and uses expert help to formulate scope, scale and performance expectations. Relationship based procurement strategies begin to appear more attractive when the PO is blind to potential problems in complex projects. In this situation a lot of mutual adjustment is required between the PO and project teams in facilitating clear scope,

scale and performance expectations. This situation is suggested by Quadrant 3. Quadrant 4 illustrates a chaotic state where the environment is highly turbulent or circumstances and required knowledge are changing more quickly than can be formulated into medium term plans such that the response can only be reactive and therefore all team members, including the POR, must be focussed on action that moves the project completion forward.

Figure 1 introduces general issues of complexity and complicatedness in terms of the need for the PO and NOP team to share knowledge, insights on the implications of prescribed (planned) actions, and performance expectations. It hints at the importance of mutual understanding of what is required, what needs to be done and how to resource and mobilise resources to achieve the intended project outcome, as well as the need to define performance expectations. From the PO's perspective, performance may mean benefit realisation through the project outcome and this could encompass a number of stakeholders, such as end-users, as well as 'the environment'. From a NOP's perspective, performance may include financial rewards as well as intangible returns such as kudos, learning, relationship building and a range of other benefits. Figure 1 provides a framework for understanding the need and project circumstance that could govern the degree of relational consideration that the project procurement form must encourage to be effective in facilitating clear enough scope, scale and performance expectations to enable the PO and the NOP project team to be able to deliver a successful project. Explicit articulation of performance in terms of delivering expected benefits is critical to achieve project success.

2.3 Collaborative Forms of Project Delivery

Collaborative forms of project procurement for a joint enterprise can vary significantly in their aims and objectives and the way they are established. Table 1 illustrates some essential features. The selective collaborative form and their main objectives and motivations are presented along with illustrative examples. There are many examples to choose from so those included are chosen to illustrate the collaborative form and we acknowledge that readers may hold in mind other examples that they are more familiar with and can relate to more readily.

Table 1 does not include detailed discussion of general business alliances (Doz and Hamel, 1998; Porter, 1998) or framework agreements (Khalfan and McDermot, 2006) and several other forms of collaborative supply chain agreements. Participants in general business alliances share some of the motivations of participants in project alliances but they do not share the same commitment to best-for-project because they have their own strategic intent drivers for their alliance creation and maintenance. Framework agreements are mechanisms where a set of players within a supply chain, perhaps those delivering capital works or maintenance, are pre-qualified and a service agreement with their clients for project delivery is arranged. These agreements are useful in local government, for example in providing smaller scale projects than the large infrastructure projects that are usually associated with project alliances. Service alliances also are becoming more common as a way to deliver programs of work in partnership with clients (such as utility providers, steel making companies and large hydrocarbon processing entities) where they work with clients, sometimes undertaking all maintenance and capital works or working alongside clients and their maintenance and capital works workforce.

The subject of alliancing in general business terms has been well researched and written about. Classical books such as Doz and Hamel (1998) and articles by Porter (1998) provide a wealth of knowledge about how alliances are developed, their advantages and disadvantages and their nature as a way to conduct business. However, as numerous authors have pointed out (Abrahams and Cullen, 1998; Clayton Utz, 1998; Halman and Braks, 1999; Hutchinson and Gallagher, 2003; Walker and Hampson, 2003a), project alliances have distinct features as compared to the business alliances referred to by Doz and Hamel (1998). There has also been some recent research work specifically on project alliances in the context of Australian infrastructure projects (Jeffries, Gameson and Chen, 2001; Cheung, Rowlinson, Jefferies and Lau, 2005; Davis, 2006; Walker and Rowlinson, 2008; Love, Mistry and Davis, 2010) and also for general building construction projects (Walker and Hampson, 2003b).

Table 1 - Collaborative forms of project procurement

*Note: Q = Quadrant.

Collaborative form	Objectives	Illustrative examples
Joint venture (JV)	Several organisations form a co-operative, possibly as a separate company to deliver projects.	Joannes (2004) studied JVs in a Hong Kong construction context.
Figure 1 Q1*, possibly Q2?		Arroyo (2009) studied a number of JVs formed in a Latin American logistics business transformation context.
Motivations	Cost risk shifting, supply niche expertise, access credibility through a partner's brand image, gain local tacit knowledge, gain advanced knowledge transfer	<ul style="list-style-type: none"> • Even large organisations need to spread risk to their balance sheet commitments; • Smaller firms grow a reputation through association with a major player; • Smaller niche skill operators supply rare skill resources; • Local firms supply access to local tacit knowledge and access to social capital; • JV partners seek to learn from each other.
Partnering	The lead contractor and a series of sub-contractors and/or suppliers formally agree to achieve mutual project objectives through pre-defined behaviours.	Eriksson (2010) provides a highly current literature review and finds from Swedish case studies.
Figure 1 Q1, Q2, Q3		
Motivations	To reduce potential conflict through a formal partnering charter.	<ul style="list-style-type: none"> • Establishing protocols for dispute resolution and enhancing perspective understanding; • Use of collaborative tools and operable technologies; • Enhancing trust and commitment; • Delivering innovation and improved decision making through early and more fully integrated involvement at the front-end of projects; • Improving communication and deliverable quality through excellent

		coordination.
Public Private Partnership (PPP), Private Finance Initiatives (PFIs), Figure 1 Q1, Q2, Q3	The broad objective for PPP and PFI is government to work with private industry to develop projects for government through a special purpose vehicle (SPV) that takes responsibility for the provision of a <i>service</i> through design, delivery and operation of a facility.	Smyth and Edkins (2007) provide a useful history of PPP/PFIs and insights into their application from a relationship based procurement perspective. Another useful set of examples is provided in the Akintoye <i>et al.</i> (2003) book. PPP/PFIs tend to be cost and risk shifting exercises where governments provide a service performance brief and key performance criteria and the private sector clients assume all risks in the long term for the assets.
Build Own Operate Transfer (BOOT) family. Figure 1 Q1, Q2, Q3	The BOOT family form of this kind of procurement process can be applied to any client entity. BOOT usually has a fixed concession period to charge a fee for service until the facility is handed over to the government or client either for no charge or for a nominal sum.	BOOT schemes were commonplace in the development of Hong Kong's road transport infrastructure (Smith, 1999; Tam, 1999) in particular but this has been a world wide trend. They are similar in the way that the provider assumes long term risk but some of these have been very lucrative where demand exceeds expectations or costs turn out less than expected.
Motivations	The initial PFI idea was to move the recorded liabilities away from appearing as government debt to be a third part service provision. This grew in scope, scale and sophistication to be a common way for the private sector to provide all kinds of erstwhile government provided social services such as hospitals, health services, prisons etc moving beyond transport infrastructure. Variants of this have been the BOOT family of arrangements as well as PPPs.	<ul style="list-style-type: none"> • Converting and upgrading aging public infrastructure such as road, bridges, rail lines and associated facilities from public owned assets to privately financed vehicles to deliver fee-for-use services; • Expected efficiencies to be gained from private enterprise delivery rather than government bureaucracy who have a limited set of skills and expertise to produce these facilities in-house; • Expected innovation and improved whole-of-life project outcomes; • Both PPP/PFI and BOOT type schemes require extraordinary clustering of expertise because the 'project' involves not only providing a facility but also its maintenance over the concession period as well as associated service provision.

Project alliance agreement (PAA)	Project alliance parties work as an integrated, collaborative team to make unanimous decisions on all key project delivery issues. The aim is create a ‘sink or swim’ together situation that is reinforced by group gainshare and painshare arrangements.	Department of Treasury and Finance Victoria (2010) provide a guidance document and definition slightly adapted as follows—A state agency (the Owner) works collaboratively with private sector parties (NOPs) to work together acting with integrity and making best-for-project decisions.
Figure 1 possibly Q2, Q3, definitely Q4	PAA may be developed through a single team developing the proposal or two teams with competing proposals of which one will be accepted.	Love, Davis and colleagues have also reported on Alliance case studies in Australasia (Love <i>et al.</i> , 2010; Love, Davis, Chevis and Edwards, in press).
Inappropriate for Q1		
Motivations	<p>The focus is on risk sharing so that all bear risk and reward as a group and not as individual firms. This is expected to deliver superior best-for-project results.</p> <p>The competitive PAA process is meant to either inject price competition into the process or to allow two different project solutions to be explored.</p>	<ul style="list-style-type: none"> • Select the best team for the project; • Integrate the client (owner) with NOPs to provide finer tuned communication channels; • Develop clear commercial and transparent arrangements for an agreed and stable target outturn cost (TOC) and fee structure for NOPs; • Work within a no-blame, authentic risk-sharing, innovative and committed culture.

When we study the motivations for developing the range of collaborative procurement of projects illustrated in Table 1 it becomes clear that each of the four types illustrated requires extensive flexibility of knowledge exchange and interactive collaboration between the PO and NOP.

The JV examples provided indicate that an important role of a JV is for knowledge transfer. The Joannes (2004) study had significant focus on how local Hong Kong sub-contractors and JV contractor partners shared local knowledge that was particularly learning oriented so that a vital skill needed of partners was that of knowledge transfer and collaboration (Walker and Johannes, 2003). This was also evident in the cases cited in the Arroyo (2009) study and, in particular, one case study that was discussed in some depth about how parties came together to collaborate with needs for resource sharing

and access to local tacit knowledge of the variable river system conditions in South America (Arroyo and Walker, 2008). The above examples indicate how knowledge sharing and collaboration by NOPs was strong at the project delivery stage. The PO and POR gain little relational advantage unless they believe that the JV provides a superior set of combined skills to that which would be the case for an individual contractor.

The partnering examples in Table 1 highlight the need for collaborative skills. Additionally, trust building and higher levels of communication and dialogue are required to facilitate innovation. This is also true for project alliancing but Table 1 hints at the additional relationship skills and attributes required of the contractor because of the greater intensity of working more closely with the client at the front-end of projects through early involvement in the brief development and refinement and exploration of various options and alternatives that may be applied. Quadrants 1, 2 and 3 of Figure 1 could be suited to partnering. While it is useful for complex and complicated project contexts, Quadrant 4 would require measures to be taken that may prove to be against the partnered firm's *individual* interest and so total commitment may well be not feasible. Best-for-project would need to align with the partnered firms' interests due to obligations of each firm's investors overriding that of the project.

PPP/PFIs and BOOT type projects also require excellence in communication and collaboration across the wide range of project partners that form the syndicate to deliver the project and ongoing service over the concession life of the asset. Quadrants 1, 2 and 3 can be accommodated by this procurement choice. This approach affords many opportunities for collaboration and constructive engagement, especially on the life cycle view of such projects. However, as with the JV and partnering approaches, that final best-for-project priority is subsumed by recognition that PPPs/BOOT family projects have their agendas set by the PO for the benefit of the PO and so it is unlikely that a best-for-project priority over all else can be sustained.

This paper is focussed on project alliances and there is an additional set of characteristics that require even more finely honed skills than those needed for JVs or for PPP/PFI or BOOT projects. As noted in Table 1, a defining difference with project alliances is the need for project participants, the PORs and NOPs, to work collaboratively in the brief development and TOC development stage on a best-for-

project top priority and so this requires even higher levels of attributes of trust and commitment.

2.4 The Antecedents to Collaboration, Trust and Commitment

Collaboration requires high levels of trust and commitment, especially in temporary organisations and those where members may be dispersed geographically (Jarvenpaa and Leidner, 1999). Collaboration is particularly stressed by the Department of Finance and Treasury, Victoria, as a vital requirement for alliances (2006; 2010). Therefore, the meaning of trust and commitment must be defined and explained so that the required project alliance ambience can be better understood.

Trust has been modelled as having three principle elements: ability, benevolence and integrity (Mayer, Davis and Schoorman, 1995). *Ability* refers to the capacity to do what is promised and this capacity is needed at the individual level so that people have the skills and motivation to do what they say they will do. It is also needed at the institutional level so that organisations interacting within the project do not present barriers that interfere with people doing what they are able to do. Bureaucracy, poor resourcing or a range of other organisational climate aspects can affect an individual's ability to do what they are capable of. *Benevolence* relates to individuals having feelings of support and desire to help rather than hinder ...?. *Integrity* relates to 'walking the talk'; being credible and being honest so that if a commitment is made then the person will move heaven and earth to do what they promised. These elements define trust levels.

Commitment can operate at three levels: continuance, normative and affective. Meyer (Meyer and Allen, 1991; Meyer, Becker and Vandenberghe, 2004) argues that we can be committed at a *continuance* level; that is, do something to continue receiving benefits or advantages. Commitment may also be given at a *normative* level where a sense of duty, obligation or habit drives action or at an *affective* level where the person truly wants to do something, not only for the reward or out of a sense of duty, but out of a genuine desire to do so. In alliancing and partnering workshops and other devices are used to build affective commitment through helping people align their goals with those of the organisation seeking their commitment, so that all people are strongly motivated to achieve the same outcomes.

This section helps us answer our question from a theoretical perspective. The main difference between an alliance and other relationship forms in the cited literature outlined in Table 1 relates to alignment being centred on a best-for-project, as opposed to corporate or individual member organisation, motivation. Participants (or organisations) within JVs and partnering arrangements primarily look after their own interest. If all participants' interests happen to be aligned then it is convenient but alignment of objectives is not specifically designed to be *mutually aligned* in that way. In PPPs and BOOT type schemes there is an engineered what? in longer term interest for a whole-of-life efficiency of the project artefact, but the procurement form remains competitive and commercial. Typically, perhaps three or four but almost always more than two, consortia bid for the concession and the client (public or private) remains independent of the consortia in terms of active participation and is not part of the development of the project solution. Thus it is radically different from a project alliance where the client often *central* to developing a project solution and continually engages in project decision making throughout the project delivery. Project alliancing is a particularly intense form of collaboration.

2.5 Intense Collaboration - Project Alliancing

Several types of project alliance have evolved from the original alliancing concept. In a review of the alliancing literature during the close of the last decade, Walker and Hampson (2003a) cite the Wandoo Offshore Oil Platform (KPMG, 1998; ACA, 1999) and the Andrew Drilling Platform in the North Sea UK as examples of early origins of the alliancing concept. These related to Oil and Gas projects where several main contractors in a restricted supply chain could coalesce and form a cohesive design and implementation decision making group to work *with* the client/project owner in a new way that capitalised on each team's tacit knowledge and expertise to a best-for-project design and development solution that minimised waste, re-work and inefficiencies. This concept was seized upon by governments (as did the hydrocarbon and mineral processing industries). These POs could be characterised as sophisticated repeat customers who could benefit from sharing knowledge and risk to improve project design and delivery of their projects. Unlike commercial alliances described by Doz and Hamel (1998) where alliance motivations may include learning to later compete, project alliances are more likely to be motivated by diverse specialists learning from each other

how to best design and assemble project solutions or from companion competitors that share project risk as alliance partners to better manage scope and complexity. This is a significant difference to many business alliances. The Johannes (2004) study indicated that JVs in Hong Kong, for example, may have delivered an element of competitors being brought together where one party may be dependent on the other but the alliances discussed in early studies (KPMG, 1998; ACA, 1999) suggest co-learning, collaboration and co-value generation through special combinations of specialised skills and experience. The type of alliance that we are concerned with tends to move intentions of market share gain aside in order to stress value contribution to a project outcome.

In Figure 1 we illustrated complex and chaotic project environments/contexts in which it becomes clear that the POR is somewhat reliant on the goodwill and knowledge and expertise of NOPS to help translate a business case into a project brief that can be developed into a project design to deliver the anticipated project benefit. A critical degree of collaboration is required so that all parties understand the context, implications of actions and reactions as well as how the collaboration might be most effectively conducted so that all parties involved are satisfied with the outcome. This means that PORs need to understand the motives, drivers and inhibitors of NOPS and vice versa. There needs to be a co-learning process and co-generation of new knowledge that helps re-frame concepts and mental models from being 'me-centric' to being 'we-centric'. Each party usually possesses a part of the knowledge and expertise puzzle and the job of a PA is to provide a means for those pieces of the puzzle to be tested and correctly assembled.

A jigsaw puzzle may be an inadequate metaphor. The situation being faced by alliance parties is often turbulent and ground rules may change or better understanding of the context may result in re-framing the project purpose and objectives over time. A somewhat easily visualised infrastructure project (Quadrant 1, Figure 1) may frequently morph within the time dimension as dependencies change. An example of this can be drawn from a conversation we had with an experienced alliance manager at the Alliance Association of Australasia (AAA) 2010 National Convention in Sydney. He related how a highway project alliance that he had recently worked on facilitated changed operations design detailing and sequencing to focus on road sections and bridge ramps to improve project road-users' safety during project delivery. Changes made to sequencing

activities significantly reduced, indeed eliminated, the frequency of traffic collisions truck and car drivers caused by errors in judgement made when confronted with roadwork interruptions and temporary feeder lane diversions. The POR was able to change the priority of project delivery elements without fear of being presented with a claim for scheduled work plan disruption or for contractor reassigned resources. The contractors within the alliance were able to feed valuable on-the-ground real-time information into decision making about how to sequence diversions and temporary access routes and appreciated this key result area (KRA) priority as being part of 'project success' and value for money (VfM) from a broader than time/cost/quality perspective. Through effective communication and collaboration, a best-for-project safety criterion could take precedence over scheduling and section delivery performance criteria for the required time that this change was warranted. In this example, the project performance objective was clear and jointly accepted and required changes to the project plan which were made seamlessly. How could this be achieved? How was the procurement choice structured to enable this?

A project alliance, as indicated in Table 1, allowed the POR and NOPs to work together closely together as a single project entity (i.e., to collaborate fully) in defining scope, scale, methods and plans, priorities and performance measures. In traditional transactional procurement forms, a rigid legal and administrative framework links both parties into set obligations and accountabilities. These are inevitably imperfect and are subject to bargaining variations, disputation and energy being expended concerning the process of pursuing the goal of reconciling this paradox. This inherently incurs energy wastage, with efforts being directed towards viewing changes in priority and the basis for claims and reconciling disputes rather than to achieving a shared project deliverable vision. The purpose of an alliance is to develop shared vision and goals and to put in place a governance system that maximises fairness to all parties so that exploitation concerns are removed, or at least substantially reduced. It also allows some flexibility and leeway rather than objectives remaining rigid even when it becomes obvious that some flexibility can realise a better result. This often continual fine tuning of expectations to respond to environmental turbulence explains the need for those involved in alliances to be highly trustworthy, be perceived to have strong integrity, and to be reliable. This means in practice that strong or exceptional technical skills are needed of NOPs as a baseline. Essential supplementary behaviours include

demonstrating trust, a commitment to a vision which is shared with the project owner, and integrity that is often manifested as a best-for-project culture. This concept can be described as a stewardship model of leadership (Davis *et al.*, 1997). When the PA team achieve a close level of collaboration to the extent illustrated in the road project example cited above, it effectively allows the meshing of POR and NOPs into a single coherent entity.

The Walker and Hampson (2003a) study of the National Museum of Australia (NMA) showed a significant shift in alliancing from more singular purpose outcomes, such as an oil platform or even a road infrastructure project, to a more participant-intensive situation of a building construction project and they claimed that the NMA was the first such building-project alliance in the world. The novelty of this approach is not so much evident from the fact that it was a building project (as opposed to an engineering infrastructure project) but that alliancing was chosen because of an extraordinarily tight delivery deadline and it being a highly stakeholder-complex project to deliver. This suggests a defining difference between alliances and PPP or partnering projects or even JVs. The difference as illustrated in Figure 1 is that complexity and chaos requires project delivery participants and the project owner to work out how to most effectively recognise, acknowledge, share and manage risk rather than merely rely on transferring risk. The necessity to deliver highly complex projects with many unknown risks and uncertainties demands radical procurement solutions. This serious and radical problem demands a unique solution that project alliancing can offer. As noted in the introduction to this paper, PAs are not a recent experiment but have been evolving for decades and they are not restricted to government or hydrocarbon industry clients.

A defining feature of project alliances is the way that NOPs are selected. The Department of Finance and Treasury Victoria (2006; 2010) indicates two methods that have changed little from that described by Walker and Hampson (2003a) in the NMA study. The defining theoretical difference between project alliances and other relationship forms of procurement is that NOPs are selected on the basis of the value they offer in terms of expertise rather than bidding on lowest price. The process described by the literature cited above states that a request for proposal (RFP) is advertised and consortia of project teams form, proposing their best team available. As part of their response, they clearly document their expertise, experience and showcase

their capabilities to work *collaboratively* in the alliance providing evidence in the form requested in the RFP. The POR undertakes a rigorous selection process that involves desktop comparison of the RFP responses against the selection criteria and this process generally reduces the pool considered to two or three proponents. These two or three consortia are then interviewed in a process that may take several days of intensive presentation and examination of capabilities. During this time, justification and verification of evidence supplied and workshop simulations and discussion of the project concept is undertaken so that the POR can gain a strong, fair and transparent appreciation of the ‘chemistry’ of working teams. It is very difficult during this phase for NOP teams to disguise any rhetoric versus reality gaps in their proposal. An in-principle agreement is made and the PA agreement is formulated once a successful team is declared. This will include price elements such as the fees to be paid to cover the full cost of managing the alliance, salaries, on-costs all the items that in construction are usually referred to as ‘preliminaries’. It will also include an agreed fee to represent the ‘normal profit’ which is then in effect quarantined as part of a pain and gain sharing incentivisation process in which agreed proportions of deduction against the profit pool or addition to that profit pool is calculated. Failure to meet agreed performance results in all PA parties sharing any penalties and if innovations and smooth management results in cost savings then sharing of these forms an incentive to pull together to achieve objectives.

Several important divergences from other types of relationship-based procurement forms are evident. First, the ‘profit’ is established from the ‘normal profit level’ of each NOP within the consortium. The NMA project, for example, provided for NOPS to allow probity consultants total free access to inspect their accounting records to ascertain the average margin achieved over the previous six years. This figure was then used as the ‘normal profit’ to be placed aside in the profit pool (Walker and Hampson, 2003c). This means that different NOPS in the syndicate would each expect to gain their ‘normal’ profit level for undertaking the project successfully and the actual profit margin variance between NOPS within an alliance is totally accepted.

Second, the project cost is benchmarked against *comparable reference projects* similar to the way that Flyvberg and others (Flyvbjerg, Holm and Buhl, 2002; Flyvbjerg, Rothengatter and Bruzelius, 2003) suggest should be undertaken on mega projects in

determining a realistic project cost budget. The project cost is estimated and calculated *after* the successful team is selected and this is based on both design refinement, project planning and risk treatment agreement between NOPs and the POR. The outcome of this exercise is a target outturn cost which represents the best estimate given the state of design and risk management and planning that can be ascertained. The TOC is compared against reference projects by independent advisors to establish that the TOC is fair, achievable, and represents the best value for money for the project. This is a radical departure from other procurement forms. It assumes that if the best possible consortium of teams respects each other's potential expertise and intellectual contribution within a shared decision making collegial atmosphere, then the most effective and best value solution will emerge.

Third, values of transparency; open and robust governance, and a 'swim-or-sink together' attitude reinforce and underpin the concept and belief in the rationale for this approach. Innovations in design, approach and process are encouraged and many are manifested through the TOC process so that the PA agreement can be finalised after the TOC agreement phase, usually several months after the successful team have been appointed. This approach also assumes additional innovation being realised through project delivery to enable meeting not only agreed project PAA performance target KRAs and key performance indicators (KPIs) but that they will be exceeded. Exceptional outcomes results in incentives that can be share through the agreed gainsharing formula. Conversely, if the KPIs and KRAs are not met then a penalty will be levied against the profit pool within a painsharing arrangement. The gainsharing and painsharing formula is agreed upon in the PAA and is a critical part of the incentivisation of the PA concept. It must be also noted that the performance measures usually encompass non-cost value which reflect value that other, perhaps voiceless stakeholders, may perceive as part of value for money. Typically, project alliances are public sector projects so community and environmental KRAs are common. This triple bottom line (3BL) concept of value for money recognises the validity of commercial, social and environmental components of 'success'.

The concept of value, including VfM, in a PA is far more explicit, (and we argue more sophisticated) and can be flexibly re-framed by mutual agreement, than that for other forms of relationship-based procurement that share some characteristics of collaboration

such as JVs, partnering or even PPPs. It locks in early involvement of NOPs with PORs through the PA workshops and PAA structure. This develops an acute shared understanding of each party's aspirations, performance capabilities, world view and both strengths and limitations. This results in better shared understanding about the risk and uncertainty appetites of teams, interfaces and boundaries and roles and responsibilities. This level of mutual understanding opens up great possibilities for innovation and process improvement.

A variant to the predominant single TOC process is the dual TOC process. This process is similar to the single TOC except that two competing alliance consortia compete on TOC options and the POR then selects one and pays a substantial contribution towards the cost of participation for the losing. The POR, according to Department of Finance and Treasury Victoria (2010), gains better VfM using a dual TOC approach. At the 2010 AAA National Convention in Sydney a representative from Department of Finance and Treasury Victoria stated that governments were obliged to prove VfM through price competition. A dual TOC approach may also be triggered by investigation of quite different approaches to a brief by two consortia with the POR making a choice based on the perceived best solution proposed.

The dual TOC approach has resulted in disquiet among many PA consortia. First, it is very expensive (in terms of time, energy and money) to commit to the TOC process if project involvement is not going to proceed even when some of the costs are reimbursed. Second, there are issues about equity in terms of quality of access to PORs and any favourable treatment of one alliance consortium over another hence a trust issue is involved. This undermining of trust may affect any later relationship. Third, in a dual TOC the POR may (and often does) take great ideas and innovation suggestions (intellectual property - IP) from the unsuccessful alliance consortium to be adapted by the successful alliance consortium creating a fear that this imbalance of the power of the POR will result in unfair loss of IP. The POR may well feel that because they pay a contribution towards the costs incurred by the unsuccessful alliance consortium they are entitled to use this type of IP. The level of trust and commitment may be degraded in this competitive alliance model.

Two other related forms of project alliance are recently gaining popularity; these are early contractor involvement (ECI) and project planning alliances (PPAs).

Alliance Association of Australasia (2010: p6) define ECI as a “process where the designer and constructor work together in a contractual relationship with the client, first to scope and price a projects (Stage 1) and then to design and construct a project (Stage 2).” It is a fully open book approach involving independent estimating, probity and financial auditing to reduce or eliminate risks associated with a contractor setting the agenda to be the only possible delivery agent. This process may involve a single or dual ECI competitive form of interaction. Payments to the contractor are made on agreed time based rates and the result of stage 1 is a full analysis of risks and proposals of who would bear the risk and how risk will be managed as a risk-adjusted price (RAP) or risk-adjusted maximum price (RAMP). This has some evolutionary history with the concept of buildability or constructability consulting that was used in the 1990s (Francis and Sidwell, 1996; Sidwell and Mehertns, 1996; Griffiths and Sidwell, 1997) and came out of studies into partnering (CII, 1996). The main difference between ECI and constructability advice is that as well as undertaking review of design from a pragmatic buildability perspective or value engineering studies (Male, Kelly, Gronqvist and Graham, 2007), the study is even more front-end focussed in suggesting design schemes and evaluating risk and uncertainty at the very beginning of project schematic design phases in translating the project brief to a design concept. ECI also involves developing KRAs and KPIs which is outside the scope of buildability or constructability consulting. According to Alliance Association of Australasia (2010: p9) ECI is best use as a mezzanine step between full alliancing where there are large number unknown unknowns (Figure 1 Quadrant 4) and traditional contracting (Quadrant 1). ECI is able to be used where there are a number of known unknowns (see Figure 1 Quadrant 2) or other risk generating constraints, and they may be significant, but the situation is clearer than that which triggers the need for a PA solution.

The second form of PA that has recently emerged, similar in many ways to ECI, is a project planning alliance (PPA). This is a progressive alliance form in which a rare set of skills are brought in with the POR very early on in a project at the early planning stages. An example of this presented at the 2010 Alliancing Association of Australasia National Convention in Sydney. This approach was particularly valuable in developing

project proposals for infrastructure which may be particularly vulnerable to local stakeholder action groups, where there are particular highly sensitive environmental issues that can derail the project development process, where there may be highly complex land title issues to resolve and other complex uncertainties surrounding route choice of roadways, pipeline or power lines for example. In such situations, having a specialised alliance of planning-related consultants in addition to a contractor combined with a sophisticated and knowledgeable client can allow more project solution options to be considered as well as a greater quality of the depth of analysis of risk and uncertainty and for innovative technical solutions to be considered. This may also be appropriate for large scale refurbishment projects or relocation of assets such as hospitals, prisons and other facilities where people are to be decanted and relocated and where this process requires complex interface and knock-on implications to be analysed in great depth. The whole process of deciding on ‘what to decide upon’ can be a major project involving a large number of skilled participants who need to be part of a problem solving exercise that requires an alliance of skills and experience.

We have spent a great deal of time and devoted much space to explaining forms of project alliance in this section so that readers can appreciate the subtle difference between them and other relational forms such as partnering, JVs and even PPPs where the client/POR involvement is more as a background party rather than for alliances where the client/POR is an active and vigorous participant in a collaborative joint problem solving exercise.

2.6 Theoretical Defining Differences Relating to Project Alliancing

We are now in a position to offer propositions about differences between PAs and other relational-based procurement forms discussed. Table 1 and Figure 1 provide a theoretical basis to answer our research question. We can hypothesise that the defining differences between an alliance and other forms of relationship procurement are:

1. The PO and POR are central components of the alliance team. They must actively work with the NOPs to develop a project solution. This occurs whether the PA has one or more competing consortia;
2. PAs are most suitable for projects characterised by an unusual level of complexity (Quadrant 4 in Figure 1) so that unimpeded knowledge transfer and

shared decision making is necessary from interpretation of the project brief through to the project realisation plan;

3. The POR demands as part of the essence of the alliance that there be an open, honest, collegiate and accountable approach to decision making—again we see the centrality of the POR and a best-for-project focus by pursuing common and coordinated goals; and
4. The alliance forms a collective in which all parties participate in sharing risks and rewards so that one participant can not take advantage of or over others.

Additionally the Victorian government's paper provides additional obvious differences (Department of Treasury and Finance Victoria, 2010: p20) :

5. Participants agree not to litigate in respect of the performance of the works, with limited exceptions (including a breach of the relevant behavioural 'commitments');
6. Participants agree to a fee based on past profit performance that is transparently audited plus the management cost of delivering the project rather than through a competitive fee bidding process; and
7. Participants commit to an 'open book' arrangement and have broad mutual access and audit rights to each other's documentation.

This establishes a testable starting point for understanding an alliance ambience that will now be explored further illustrated by quotes and analysis from the study we undertook.

3 The Research Study Context

The Alliance Association of Australasia commissioned the authors to undertake a study to profile professional excellence in alliance management. This is part of a series of research projects undertaken within Australasia on alliancing that has been undertaken by a number of research groups over several years. In this study 10 AMs and 2 unit managers who alliance managers report to were interviewed with one of the AMs also being a unit manager. We requested a list of approximately 15-20 potential interview candidates who had been alliance managers on one or more projects as well as having been experienced project managers in other environments. The group was made up of

approximately 33% each relatively inexperienced AMs, experienced AMs and those with experience of multiple alliances. Each interview was recorded and transcribed. Interviews took just over one hour on average involving 13 hours of recording and over 200 pages of transcript which was analysed. Table 2 illustrates the profile of interviewees.

Table 2 – Profile of Interviewees

Alliance project managers and leaders interviewed (including 1 program manager)	10
Experience in alliancing	1.5 – 5 years
Unit managers interviewed	3
Number of employing organisations	5
Organisations’ level of involvement in alliancing	Varied, up to 75% of income generated through alliances. Alliancing had become the dominant procurement method for all participant organisations.
Nature of alliances	1 Building construction project alliance (PA), 9 infrastructure development and maintenance services PAs.

We used a grounded theory approach to analyse the data following a process where we individually ‘coded’ data to make sense of the responses to questions asked, using the transcripts and sound files as our reference along with our knowledge of the literature from the literature review. Both researchers coded the data separately, then discussed and agreed upon the codes arrived at using the approach prescribed by Glaser and Strauss (1967). We used NVivo, which is a sophisticated software tool for managing qualitative research data. We were able to access the sound files, transcriptions, other relevant data such as project reports, web based information and less formal correspondence such as sundry emails. NVivo can be used as a form of document copier and tagging facility. The researcher reads transcripts and listens to the interview records and codes for meaning of emerging category themes and sub-category sub-themes. These are then built into more encompassing category entities in a continuous sensemaking exercise. The process is akin to factor analysis in quantitative data analysis. The number of interviews chosen is based on achieving data saturation so that each new interview reveals fewer ‘new’ categories/themes so that further interviewing achieves significantly diminishing returns for effort involved. Two researchers undertook separate thematic analysis and compared notes to agree and explore disagreed interpretations. This is a well established approach (Glaser and Strauss, 1967)

and requires an open minded researcher with sense being made of the data through triangulation by referring to other data sources, such as documents, web sites or by presenting findings to respondents or others who could have been respondents for feedback and comment. This approach is highly opinion-based, meaning there is always a danger of bias through group think or in taking short cuts in analysing the large numbers of transcript pages such as occurred in this study. This required that care be taken to rigorously test emerging assumptions, findings and to seek confirmation or challenge from the literature. While this is a time consuming and absorbing approach it has the advantage of deeply immersing researchers into the subject matter content. Sound files reveal tone and expression and being the interviewer, as was the case with this research, allows researchers to read body language and take contextual notes that would be absent from merely studying transcript texts.

The background of researchers is also a factor in the research process. In this case one researcher was an experienced professional with direct PM experience in similar projects and had studied both alliance and more traditional construction projects over a period of several decades. The second researcher is considered a highly expert professional in human resource management including sound knowledge of organisational behaviour and general management and has been involved with this professional area for several decades. In this way we were able to better understand the nuances and jargon that respondents provided and we were able to seek clarification of ambiguous or unexpected comments and to closely engage with respondents at their comfort level. We guarded against bias and our own assumptions dominating threads of discussion and so we encouraged free rein on the discussion within a broad interview semi-structured protocol that could allow us to prompt where necessary. We prompted questions about what it felt like to be in the alliance so that we could gain insights from bursts of enthusiastic voice levels, evasion or reticence or other forms of emotions.

4 Discussion of Data and Results

After carefully coding the data three main categories emerged. Table 3 provides these and their sub-categories. These help explain the ambience of the alliance and are explained with supporting quotations cited by interviewed respondents.

Table 3 - High Level Synthesis of the Empirical Data into Categories

Category	Sub-category
1. Espoused culture demonstrated through rules, expectations of alliance (PAA)	1.1 PA culture (demonstrated through behaviour and attitude) 1.2 PA governance 1.3 PA game-breaking innovation 1.4 PA trust capacity 1.5 PA triple bottom line (3BL) aspirations
2 Culture in use	2.1 Drivers of culture 2.2 Enablers of culture

Data falling into the high level category ‘Espoused culture demonstrated through rules, expectations of alliance (PAA)’ were able to be further segregated into sub-categories. These five sub-categories are: the PA culture; the PA Governance; PA Game breaking innovation; PA trust capacity; and PA triple bottom line (3BL) aspirations. In the second high level category, ‘Culture in use’, data were segregated into two sub-categories: Drivers of culture and Enablers of culture.

Other categories and sub categories have been identified. The report that this paper is drawn from is far too detailed to fully discuss within the limitations of a conference or journal paper. Fuller detail can be found in the report presented to the AAA [REDACTED]. We now examine each of the sub-categories in Table 3 with a brief discussion for each that helps us better understand differences between PAs and other relationship-based procurement approaches discussed earlier, and provide a few representative participant interviewees’ quotes to demonstrate how this first category and its sub-categories were arrived at. Space limitations restrict the number of quotations presented here, however, we have taken care to provide quotations which convey the ambience to the extent we can effectively do within this paper. We also present a series of selected quotes from the 200+ pages of transcripts to illustrate points made specifically about the PAs. These are linked to the Table 3 relevant sub-category.

Table 3 – PA Sub-category Quotes

Selected Illustrative Quotes (Note IV-nn = Interview number)
The PA Espoused Culture, Sub-Categories 1.1 to 1.5 (Note SC = Sub-category)
<i>Quote IIV-01 SC1.1 “... The basic assumption for alliancing is that you’re all on the same team and if you can keep everybody on an even keel, then you’ll end up with an excellent project. ... agreements [PAs] are reached before you even start doing any work... that’s the important part We had ... a Project Alliance Agreement. We were all signatories to it. ... So a lot of the problems that are normally associated with uncertainties within the contract had been thrashed out.”</i>

Quote 2 IV-10 SC1; SC 1.4

"... alliances are when it's really unknown ... But where you've got no idea, like when we'd go to XXX and we didn't even know how we were going to get state and government approval, and we spent six months longer than what everyone expected to get that, and yet we still made our contract. So you sit there and go "That's an alliance," absolutely and alliance."

Quote 3 IV-07 SC4; SC1.1

"The major differences are the contractual framework and the workshopping ... the actual framework is aligned and then you workshop your people and your team to be aligned and have the single goal or the aligned goal."

Quote 4 IV-06 SC 1.2, 1.4, 1.1

"... we had four programs going out for selection ... that involved the request for proposal going out to industry, them coming back in, doing it in short listing ... each consortium had about a 3.5 hour interview session with their team. Prior to that we had guidance sessions, so if people were thinking of putting in an application, they could turn up and just ask us general questions about the RFP. Then they were interviewed. From there we did a short listing process from the interviews, and then in most cases two were short listed, for one of the alliances ... Then each of those short-listees went through a two-day selection workshop, ... turning up and doing various activities over two days, including dinner overnight. ... following that selection workshop process, and that was largely about working together, understanding the alliances, those kinds of things. ... following on from that, each of the short-listees went through in two days, commercial negotiations, which was negotiating the margins, what was direct costs, what wasn't inclusive direct costs. out of all that, we did the number crunch to get the winner. ... The commercial negotiation was less about a fixed project, and more about the principles of what we'd be including, direct costs and those kinds of things."

Quote 5 IV-01 SC 1.2, 1.1

"We've got a project control group that has within it a design endorsement which brings together people from the XXX, YYY, ZZZ [Note these 3 being the client and their government sponsor organisations] being the, our organisation and the design organisation and they add various milestones to that review, elements for design.

... the idea of the co-location and bringing that all together, and that certainly does make all the difference. We're co-located with the people initiating the projects too, who are just a floor apart, and that's been a huge part of improving that, generating the outcomes that everybody agrees on, we're not dependent on a couple of meetings each month to talk about that, but people are just popping up and down and sorting out issues all the time.

... The power of the team is the best for project outcome, whatever model of contract. You've got ... more opportunity to do that in alliance contracts because you've got a more diverse team with a diverse culture and a broader agenda

... On an Alliance, what we're doing ... is pricing the risk in a much more effective way, so that's the costs the government the main risk is much, much lower under an Alliance model. If we were delivering information under a PPP model, and risks like latent conditions, the consequence of dealing in an existing heritage building, getting heritage permits, getting planning permits, they are all things that you couldn't manage in a bid phase and therefore, you'd have to allocate time contingency at the end cost contingency too

Quote 6 IV-04 SC 1.2, 1.4, 1.5

"... alliancing is preferable to me because it puts me in a better position to ... resolve all of the risks around the project delivery rather than just some ... It also allows me and the client to understand these other drivers and agendas and pushes those agendas aside to some extent, to give better control over outcome

... I don't subscribe to the theory that alliancing is better because it's a relationship style contract, because you can make any contract delivery method a relationship style contract [through] the risk allocation.

... You get through the hard times and get to the good times, ... if it was a design construct and you were in an adversarial environment, you'd come to a hard time and then the hard times just get harder and you'd end up in court. ... in an alliance, you said at the very start, "We won't end up in court, and what's more, we've got a deciding body that sits there and will decide on everything that goes on here if there's disagreement, called the Alliance Leadership Team."

... And ... about how [to] measure the success of an alliance ... for me – and this is something you don't normally measure in other contract delivery methods, you look back and you say how good were the trusting relationships on that contract? ... That is the basis of it all. If you don't have trust in relationships, you don't have an alliance.”

Quote 7 IV-06 SC1.2

“Certainly, in an alliance, having all the components of that price transparency, and having that challenge around different components of the prices, and having the risks really obvious, is a very different space. ... The alliance brings that level of transparency to it.”

Quote 8 IV-07 SC 1.3, 1.1

“In terms of the team ... we were up to about 250 innovations so far I think on this project and we've been really pleased with the way we've been able to innovate during the bid stage and we've continued that innovation through ... [and] after the TOC process. Obviously the more you innovate, the less opportunity later on to innovate because you're sort of getting into the building phase. So some of the size of those innovations may have changed but the whole process continues on and the net effect of them is very promising.

[on aligned project values] ... And that is precisely the values and behaviour, the natural values and behaviours that we're trying to drive through to the team. So that's the really pleasant thing to be aligned on that as well, not just the commercial side.

The PA Culture In-use Sub-categories 2.1 to 2.2

Quote 9 IV-01SC 2.1

“Even though [the POR] has always had a real passion for Alliancing ... and he's a champion of it, he likes it as a delivery method. This is the first time he's been able to get a project under that model and that is his organisation probably still struggles to have the model work effectively because there is still a need for them to exercise a lot of control over the project finances and they want to exercise a lot of control over government stakeholders and they also want to find some relevance on the job as well, as a delivery agency, traditionally they would find themselves in a role of bringing together all the component parts of the team and managing that team. So for them culturally it's a big shift as well.

Quote 10 IV-06 SC 2.1

“The alliance model definitely requires more negotiation and more big-picture thinking. ... if there's an issue with design when you're coming through the process, then that's working together and negotiating things is a different environment, to if you have an external design that's coming in, then you get part way through construction and then you're arguing about variances and those kinds of things. So it's probably that no blame, no disputes kind of atmosphere is quite different. I guess with alliances, it's less hard-nosed, but it's that kind of firm but fair kind of environment.”

Quote 11 IV-10 4 SC 2.1

“... [Government Treasury and Finance staff] don't trust alliances and think that they're soft, and make too much money for the contractor, and it's not competitive and therefore it is the wrong vehicle. So now they've turned them into what they call competitive TOC...”

Quote 12 IV-01 SC 2.2

“some ... loved [the team environment], once they got to ... sitting with the client and ... with the designers, that was when it actually clicked for our site manager, he came out of the first selection workshop and said, now I get it, now I understand it, what this is about. When we were only the builder in a room with our own co-facilitator, everybody was the same and everybody had the same background for the most part. But once we got into a room with people from very diverse backgrounds and different needs, they could see the benefit of working in that way and it was fantastic for them to reach that point and he is probably one of the most valuable team members now. He took a very direct style and he's very forthright and he'll take everything black and white for him and people respect of a site manager, but now he's got sort of respect for other people on the team as well.

Quote 13 IV-05 SC 2.2

“... I find working in a collaborative arrangement a lot more satisfying and we're very fortunate ... that XXX's very progressive in their thinking. Thinking from a YYY background, they certainly want to work together to be able to derive the best value. Doing that means that everyone's pulling in the same direction, there's I suppose, freedom to express yourself so what we call “non-discussable” – being able

to have those open and honest conversations which fleshes out any issues out there and is able to ultimately take us to what we believe is the next level.

Quote 14 IV-08 SC 2.2

"... the sort of people in an alliance that you look for are those that enjoy diversity, so the phases that you go through in an alliance are very rapid, and clearly the up side is whether it be through your senior management team, or the members of the wider project team, they get exposed to a huge end-to-end existence that you probably may not get in a corporate environment because you live in that department, and you're not on site, or your not exposed to the next step. So you'll get a slice in a corporate environment, whereas it's a bit like a micro lab, isn't it? ... it's a micro environment where, particularly for designers, and estimators, and people that perhaps didn't get exposed to construction, or they didn't get exposed to commissioning, or whatever, it's very easy for them to put their hand up, show initiative, stay on and get exposed to things, look out the window, touch and feel things which they'd never ever had that chance to do in a corporate environment. So in that way their skills are more broadened, they've got a much better perspective on how things happen.

Quote 15 IV-01 SC 2.2

[on recruiting team members as potential AMs] "... our experience preparing for this project was really interesting as we chose foremen and site managers ... that we thought would be really effective ... guys that were you know, grey hair done a lot of that sort of work. We knew that they didn't have Alliance experience; we knew some of them would struggle with it. We had a pool of 10 of them at the start of the workshop process, by the time we got to the end of the workshop process, probably only half of them were ever going to get there and some of them took the whole length of the nine months workshop and bid process before it finally clicked and they realised, yes, I get it now, and I reckon I can live with that. ... there's two lessons there; ... it can take people a long time before they actually get what the differences are and people would start off sometimes being negative about it and feel uncomfortable ... because it's just a different way of doing things. ... we dedicate a lot of time to the bid, and it meant that we were actually able to test that team and determine who was up for it and who wasn't. If you tried to compress the bid timeframe it might be harder to do that
... So you'll often win a project on the basis of good technical competency and the thing I like about Alliancing is that the client actually sees the way you are as a person and determines whether or not they think they'd be happy to work with you before they sign you up... that's a really strong attribute and delivery method. The way the workshop is facilitated and set up and that was done really well on this project, was giving you the technical problems to solve, you have to demonstrate that you got the technical capacity to do it, but you have to do it in a way that we're going to include them and show that you have the capacity to bring everybody to the table to solve the problem.

Quote 16 IV-02 SC2.2

"There's less conflict. An ability to add a lot of extra value to the project without being stymied by preconceived limits, expectations and that sort of thing. I'm currently on another alliance right now but as a project manager not as an alliance manager, but I'm within the XXX alliance which is a major program of works and they've asked me to be project manager on a particular large portion of the project. I'm enjoying it. I'm working within a team who is focussed on best of project outcomes. I know that's a hackneyed term but it is basically the whole crux of the matter. The whole idea of an alliance is to come out with something that is best for the project. I'm quite happy to be associated and quite frankly do not really look forward to going back to a D&C type situation because it takes too much energy.
... We had a uniform. We had PAA shirts; PAA hats. I allowed people to use individual company stationery. Perhaps I wasn't tough enough on that. I think if you can encourage people to accept the uniform and be part of the team by being able to recognise them as being part of the team, then that's a better outcome.
... In this particular case we adopted the client's email system and it worked quite successfully. They supplied all the IT and computers. It meant we were totally common within the project.
[on living with alliance AND base company cultures].. I found that the people that were more or less screened as being suitable to work on an alliance, the screening process was fairly significant and had a big bearing on the suitability of the people that came into the alliance as part of the alliance team. Initially on the clients side, we had a great relationship with the people that were working with us from the clients point of view but there were changes within the organisation over a period of time and the new people that came in had not gone through the process of the being aligned, for want of a better term and there was significant setbacks in the early stages of those relationships before we got back on track again. So it was a problem more from the client's side than it was from the contractor side."

Table 3 provides a high level synthesis of the study results. Three broad categories emerged, all of which can then be broken in to sub-categories. We have examined in detail in this paper the first two broad categories only - the Espoused PA Culture and Culture in use. As shown in Table 3, these broad categories are broken into five and two sub-categories, respectively. Quotes relating to broad category 1 reveal behaviours required of PA team participants and demonstrate how the espoused culture is developed and supported through rules and expectations of the alliance as defined in the PAA. The eight selected quotes illustrate the ambience of a PA compared to other procurement forms. Discussion of the PA culture in use category is expanded with a further eight quotes that illustrate the ambience of this aspect of alliancing. The third category, concerning how the PA changes base organisation strategy, relationship performance and ideas about business performance is not discussed in this paper as it does not specifically relate to differences between alliance projects and other forms of contract. The broad picture provided by these quotes begins to provide us with a better understanding of the point of departure from other relationship forms of project procurement presented in Table 1. We now draw these threads together in Table 4.

Table 4 – Defining PA Differences Proposition Discussion

Note: P = Proposition

Propositions	Discussion of conclusions	Suggested implications
<p>P1 - The client POR is a central part of the alliance team with the NOPs to develop a project solution.</p> <p><i>Quotes 9, 11, 12, 16</i></p>	<p>This appears a defining point of departure. Alliances of this type can only work with sophisticated POs and PORs who effectively communicate and fully engage with NOPs to reduce information and power asymmetries.</p>	<p>POs must carefully select their PORs and must invest in organisational learning initiatives to be able to exchange knowledge on their perspectives. Cultural intelligence is also vital in the ability of PORs to clarify their understanding of value.</p>
<p>P2 - PAs are most suitable for projects characterised by an unusual level of complexity so that unimpeded knowledge transfer and shared decision making is necessary from interpretation of the project brief through to the project realisation plan.</p> <p><i>Quotes 1, 2, 5, 6, 8, 12, 13, 14, 15</i></p>	<p>Uncertainty and ambiguity management and clarification of the meaning of value are better dealt with through the loose coupling of a PA rather than tightly coupled risk shifting strategies in other procurement forms. The more ‘messy’ or ‘wicked’ the problems faced, the greater is the need for flexibility, improvisation and creative problem solving offered by PAs.</p>	<p>High technical competence is a given in NOPs as well as the need for highly advanced versatility and pragmatic approaches to PM. Layered above this is the need for very high levels of ability to communicate, constructively listen and creatively engage and be able to be highly innovative. This places knowledge management and organisational learning as core competencies for both PORs and NOPs.</p>
<p>P3 - The POR demands, as part</p>	<p>Trust and affective commitment</p>	<p>Whilst skills and attributes are</p>

<p>of the essence of the alliance, that there be an open, honest, collegiate and accountable approach to decision making—again we see the centrality of the POR and a best-for-project focus by pursuing common and coordinated goals.</p> <p><i>Quotes 1, 3, 5, 6, 7, 8, 10, 12, 13, 15</i></p>	<p>in PAs are core elements of authentic leadership and followership. PA culture must reflect NOP openness, collegiality, ethical behaviour and honest expression of values to facilitate best-for-project decision making.</p>	<p>critically important, these must be matched by consistent behaviours. Much of these features can not be ‘learned’ through courses, ‘book learning’ and other more conveniently taught approaches. These behaviours need to be developed by NOPs and PORs through practice, role modelling, mentoring, and workshop simulations.</p>
<p>P4 - The alliance forms a collective in which all parties participate in sharing risks and rewards so that one participant can not take advantage of or over others.</p> <p><i>Quotes 1, 5, 7, 8, 10</i></p>	<p>The ‘we all sink or swim together’ philosophy is a defining departure point from other relationship-based procurement forms. The ration of gainshare and painshare needs to be clearly accepted by all project participants in the PA.</p>	<p>The TCE balance here is that much money and energy saved through lower tendering and ongoing project administration costs is redeployed to building a culture of shared responsibility.</p>
<p>P5 - Participants agree not to litigate in respect of the performance of the works, with limited exceptions (including a breach of the relevant behavioural ‘commitments’).</p> <p><i>Quotes 1, 6, 10,11,13, 16</i></p>	<p>PAs are unique in their explicit agreement to not engage in a blame game. The P4 proposition requires a paradigm shift in the nature of responsibility and obligation of all parties. Litigation is only permissible for criminal conduct or gross negligence.</p>	<p>This releases energy away from defensive measures when problems arise to proactively dealing with challenges. Risks can be effectively managed by those best able to when and as needed. Knowledge and vital information can be more effectively shared.</p>
<p>P6 - Participants agree to a fee based on past profit performance that is transparently audited plus the management cost of delivering the project rather than through a competitive fee bidding process.</p> <p><i>Quotes 4, 5, 6, 11</i></p>	<p>The concept of respect for each party to make a realistic and suitable return for their skills and expertise is acknowledged. The means to do this allows an open and transparent process to overcome many of the agency theory fears of exploitation by any party.</p>	<p>Removing the fear of exploitation and enshrining a guiding principle for fair return for NOPs allows them to focus on best-for-project decisions. The TCE for distribution of excess benefit is far more effectively managed when projects exceed expectations and to compensate POs if performance expectations are not realised.</p>
<p>P7 - Participants commit to an ‘open book’ arrangement and have broad mutual access and audit rights to each other’s documentation</p> <p><i>Quotes 4,7</i></p>	<p>This provision is unheard of in most relationship-based approaches except for cost-plus procurement.</p>	<p>This provision lowers transaction costs of contracts administration compared to other approaches as well as increases trust through transparency.</p>

It becomes evident that an additional skill set is required that extends what is expected of an alliance manager (AM) above that of being a project manager—given the high level of focus on collaboration, transparency, accountability, open culture of knowledge sharing and joint risk/reward absorption with an emphasis on trust, initiative,

breakthrough innovation to achieve outstanding project outcomes and a set of outcomes that are well beyond the iron triangle of performance. It is worth noting here that several AMs did mention that over recent years their business has tended to move towards 75-85% of their overall business taking place within PAAs. This business reality reinforces the need to better understand this project procurement form.

The essential message conveyed about the espoused culture is that a PA Culture is very different from a business as usual project delivery approach and has substantial differences from other relational procurement delivery approaches. The focus on mutual obligations based on all parties sharing risk and reward to an agreed formula, the way that the alliances are established as well as the selection process and structure have a defining and critical focus on mutual motivation for project success. The way that all partners sink or swim together is a defining point of departure from other forms of project delivery as well as the project owners (through their representative) sharing risk and being truly engaged with NOPs. The process for selection and establishing the culture is highly pro-active. Quotes presented here and those in our data base clearly provide a wealth of insights into why this procurement form requires high levels of commitment and project owner engagement. This procurement form, therefore, is not suitable for inexperienced or naïve project clients initiators. It is also not suitable for inexperienced or naïve NOPs. Our data also strongly suggests that sophisticated well-designed and well-considered governance structures had been put in place in the study's PAs. Innovation that breaks out of the 'norm' for business-as-usual and other forms of relationship-based procurement approaches appears to be designed into this system. Trust between partners to enable the level of mutual dependence is pivotal as is clear from the data and analysis. Finally, and this may relate to the tendency for public sector projects to adopt this approach, a 3BL performance is high on the list of performance expectations. There may be a sharpening 3BL focus for alliances in the hydrocarbon project sector for offshore oil extraction projects after recent disasters in the Gulf of Mexico, West Australian coast, west coast of Africa and elsewhere. The likelihood of a carbon tax in the future for environmentally friendly performance may enhance the need for this sub-category focus.

An important sub-text emerging from the data is the aim in PAs to reduce wasted energy through relying on reactive rather than proactive measures, wasted knowledge

and information withheld to solve problems that benefit all. The underlying principle of this relates transaction cost theory as put forward in explaining the cost of decision making (Coase, 1937; Williamson, 1975; Williamson, 1985; Williamson, 1991). Classic front-end focus in PM theory argues that energy expended at the early stages of projects to explore options and contextual issues, plan systematically, communicate clearly, and explore likely cause-and-effect links requires less energy than handling disputes in the event of a poor outcome. The attraction of collaboration may be understood in Darwinian and TCE terms. Investing in developing a commitment to team objectives, and a willingness to resolve within the PA any issues that arise during the project, results in fewer resources being expended on retrospective battles. When a long term view is maintained, and the potential energy-sapping threat of global competition is considered, the main game appears to be business sustainability and not ephemeral gains on individual projects or even struggles within projects for small victories.

5 Conclusions

The principal aim and scope limitation of this paper was to provide an authoritative answer to the question “What are the defining differences between alliancing and other forms of collaborative project procurement?”

We drew upon agency theory and TCE theory to help finesse differences between PAs and other relationship-based project procurement approaches. We also discussed the nature of trust and commitment as core values and how these are applied in PAs to define differences between PAs and other procurement forms.

We presented Figure 1 as a means to understand how uncertainty forms a defining element of PAs and linked that to Table 1 to explore collaborative forms of project procurement. We discussed PAs at length in Section 2.5 including newly emerging mezzanine forms such as ECI and project planning alliances. Our theoretical and literature review efforts allowed us to propose seven propositions about how PAs differ from other relationship-based project procurement forms.

In Section 3 and 4 we presented empirical evidence and support for our 7 propositions and chose 16 quotes from over 200 pages of transcripts gathered from interviews with 12 AMs and UMs. These quotes were then used to illustrate how the 7 propositions

could be explained and supported as well as highlighting suggested implications arising out of the study.

Our broad study was designed to find out much more about PAs than is presented here. It is important for readers to first understand how a PA differs from other procurement forms. We also investigate the feeling or ambience of PAs as well as the specific skills, attributes and behaviours required of AMs in other papers and in our report [REDACTED]. Further analysis continues on our data from this study.

We trust that this contributes to the reader's understanding of this emerging and unusual project delivery approach that has become a valuable option within the Australasian region and is now gaining greater acceptance elsewhere in the world.

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