Project Alliancing: A Relational Contracting Mechanism for Dynamic Projects

Matthew W. Sakal[1]

Abstract

The environment in which construction projects are accomplished today often involves completing complex, uncertain projects within tight budget and time constraints. In this environment 'change' is a defining characteristic and is inevitable. Unfortunately, most traditional contracts do not embrace change, but instead treat it as an anomaly by trying to specify every possible contingency and assign liability in the event change occurs. As projects become more dynamic, this increasingly leads to detrimental adversarial relations as individuals focus on protecting profit and not collaborating to maximize project performance. In response to traditional contracting limitations, Project Alliancing, developed originally by British Petroleum in the North Sea, is a relational contracting mechanism widely employed by Australia's public sector to handle high visibility, complex capital works projects. Project Alliancing is a dramatic departure from traditional contracting methods in that it encourages project participants to work as an integrated team by tying the commercial objectives (i.e. profit) of all the parties to the actual outcome of the project. In this arrangement all decisions are made "best for project" and not "best for individual" since the alliance either wins or loses as a group.

Keywords: Project Alliancing, relational contracting, project management, contract

Introduction

Over the last four decades, construction projects have continually become much more dynamic in nature, largely due to the increasing complexity and uncertainty of these projects. In addition, the industry as a whole has become much more dynamic as illustrated by its continual fragmentation (McGuinn 1989) which contributes specifically to increased complexity—more parts, more interfaces. In the face of this challenging dynamic environment, clients continually attempt to reduce project costs and design/construction time while still demanding high quality final products.

In all construction projects 'change' is a defining characteristic and is almost inevitable. This is especially true as projects become more dynamic. In order to achieve truly outstanding project outcomes, dynamic projects require contracts that are designed specifically to embrace and manage change. Unfortunately, most traditional contracts do not embrace change, but instead treat change as if it is an anomaly. This is illustrated by the fact that traditional contracts attempt to predict and specify all possible eventualities by drafting contracts to prepare for the worst-case scenario. Unfortunately, the goal of trying to achieve "100% planning is never achieved in life" (Campbell 2004). Therefore, when changes do occur, the focus of traditional contracts is on "the bump at the bottom of the cliff" which leads to difficulty (Cockram 2002) and not on the cooperation that is necessary to embrace change and diffuse problems before they get out of control. McInnis (2004) echoes this sentiment when he states, "The success of the contractual relationship depends less upon what has been agreed than upon how the parties will agree to handle events in the future." This is one of the

[1] Capt, USAF, 5201 Leesburg Pike, Falls Church, VA 22209, e: Matthew.Sakal@pentagon.af.mil

fundamental issues that separates relational contracts from traditional, more 'discrete, transactional', types of contracts.

Another problematic issue with using traditional contracts for dynamic projects is that instead of focusing on maximizing project outcomes and creating a good framework for developing a collaborative environment between the parties involved, they are generally legal shields, written in a biased manner to protect the drafter. For the most part this is due to an overall lack of trust of one another. Owners often use contracts in an attempt to shed unbearable risk to contractors through the form of harsh exculpatory contract clauses. This subsequently leads to large contractors passing the same risk onto the shoulders of smaller subcontractors who are the least able to financially bear the risk. Often owners feel that the shedding of risk to the contractor through clear documentation in the contract will reduce the number of claims and disputes. This is not correct. Not only does it not prevent disputes, it actually causes increased antagonistic relations between the owner and contractor that are clearly not in the best interest of the project (Steen 1994). Besides increased conflict, Ruben et al. states that, "harsh contracts discourage responsible bidders" as well as "attract those bidders willing to take any kind of chance, or those who expect from the outset to make up their dollars via claims" (Rubin et al. 1999). In fact, as explained at the 5th Annual meeting of the American Bar Association's Forum on the Construction Industry, "the General Committee of the Forum on the Construction Industry has identified the use – more accurately, the abuse – of the risk allocation process as one of the principal causes of the present morass in the construction industry" (McGuinn 1989).

While most of the construction industry seems resigned to the fact that there's no better way to conduct business and, therefore, continue to experience the negative ramifications of using traditional forms of contract, there are progressive groups searching for ways to improve. These parties have begun creating and implementing new innovative relational contracts to address the inherent problems of using traditional standard forms of contract on dynamic construction projects. A prime example of a relational contract that is proving to be very successful at meeting these new demands is Project Alliancing. Project Alliancing, developed originally by British Petroleum in the early 1990's, is a relational contracting methodology widely employed by Australia's public sector to handle high visibility, complex capital works projects. This innovative contracting mechanism is a dramatic departure from traditional contracting methods in that it encourages project participants (client, designer, contractors) to work as an integrated team by tying the commercial objectives (i.e. profit) of all the parties to the actual outcome of the project. In this arrangement all decisions are made "best for project" and not "best for individual" since the alliance either wins or loses as a group. What follows is a description of Project Alliancing's origination and its main characteristics.

The Birth of Project Alliancing

In the early 1990's British Petroleum (BP) faced a daunting situation. Known oil reserves in the North Sea had become uneconomical to exploit due to their smaller size and, at the same time, competition began appearing from other attractive drilling locations around the world (Knott, 1996). It became apparent to BP that the only way to profitably tap into these reserves was to somehow reduce the high project development costs. Not surprisingly, BP's first attempt involved the traditional approach of trying to engineer a cheaper project through the use of the latest technology. While important, this strategy provided only minimal reductions in development costs—failing to delivery the necessary cost savings to make the project economically feasible. BP began to realize that something more drastic needed to be

done. As a result, BP decided to explore a departure from its standard business strategies (i.e. competitive bidding and traditional risk allocation contracts) that generally resulted in mistrust and conflict between the contracting parties. To prove that it was serious, BP chose a notoriously problematic oil reserve named Andrew field as its showcase trial project. As John Martin, BP Project Manager, states, "An even more radical formula was called for, a complete departure from the usual style of oil industry contracting, one which required a step change in behavior. The adversarial relationships between oil companies, contractors and suppliers had to be confined to the history books – we believed that only by working in close alignment with our contractors could we hope to make Andrew a success. To this end, behavior was identified as the essential partner for technology; the twin building blocks which if brought together could be capable of producing extraordinary results" (Knott, 1996).

The realization that a radical change in behavior was necessary was a critical breakthrough in BP's search for a more effective contracting method. To this end, BP realized that its new contracting strategy would need to create an environment that somehow necessitated commitment to teamwork, relationship development, and trust. In order to accomplish these lofty aspirations, BP's project team knew that it had to figure out a way to align each project participant's commercial interests to the actual project outcome. The traditional practice of contractors making suboptimal project decisions in order to optimize or protect their profit had to change. To accomplish this transformation for the Andrew Field project, BP developed a new "painshare – gainshare" compensation program. This contracting methodology, ultimately named Project Alliancing, involved complete open-book accounting, *sharing* all "uninsurable" risk between all project members, and setting an initial target cost generated by the whole project team. This target cost would then be compared to the final cost and the under or over-runs would be shared by all project participants. In other words, the team would win or lose financially as a group depending on the overall project performance. Another critical aspect of BP's new contracting strategy involved team member selection. The seven main contractors that formed the alliance with BP were not selected competitively based on cost, but instead on virtue since project performance was now the undisputed main priority around which everything else centered.

The incredible results of the Andrew field project clearly illustrate the resounding success of BP's new relational contracting tool-- Project Alliancing. Before instituting these new innovative contracting methods and after many attempts to reengineer the project using the latest technology, estimates for the Andrew field project originally stood at £450 million-- well above the necessary development cost to achieve profitability. In order to send a clear message and show prospective contractors BP's sincere desire to change the way it did business, BP initially set an astonishing target estimate of £270 million as part of the Project Alliance bid documents. After a rigorous contractor selection process and six months of intense collaboration with the partners, the project team agreed to a target cost of £373 million; almost £80 million lower then the previous low estimate! Then, due to unprecedented dedication to teamwork and growing trust, within 3 months after the project commenced the alliance had already revised this estimate down to £320 million and the team felt the project could be finished three months earlier then originally scheduled. Ultimately, the final cost ended up at, amazingly, just under £290 million and the project began producing oil 6 months before originally scheduled! John Martin, BP Project Manager, explained, "To achieve this degree of cost reduction and produce oil six months ahead of schedule was never in my wildest dreams at the time" (Knott, 1996).

Project Alliancing: The Specifics

Since the completion of the Andrews field project in the North Sea, BP has continued to use the Project Alliancing relational contracting mechanism as a means to compete with and differentiate itself from its competitors (Peters 2001). Project Alliancing has also now been refined and used in several different countries, but the country that has most eagerly embraced this new contracting strategy is Australia. The first two projects to use Project Alliancing in Australia were 'The Wandoo Project', an oil field project started in April 1994, and 'The East Spar Project', a gas field project that began in July 1994. Ultimately, based on the resounding success and good press of these two projects, other Australian clients and contractors in the heavy civil works sector took notice and began learning about and utilizing this new collaborative model. Today, numerous large, complex Australian private and public civil works projects have been constructed using Project Alliancing's relational contracting techniques (Peters 2001). Besides heavy engineering projects, Project Alliancing has also been successfully employed in the commercial building sector, with the first being the construction of the National Museum of Australia completed in March of 2001[2].

So what is it specifically that has made Project Alliancing such a popular relational contracting tool for managing dynamic projects in Australia? According to the Australia Government Department of Defense, "Use of a Project Alliancing contracting methodology can assist to overcome some of the difficulties faced by Defence in its traditional methodologies for certain high risk acquisition projects, including inappropriate risk allocation, cost overruns, schedule delays and adversarial relationships with industry. Project Alliancing has the potential, in some circumstances, to assist in improving relationships with industry, and to produce better returns for both Defence and industry" (Australia 2005). More specifically, through a unique compensation model that aligns project participants toward achieving outstanding project outcomes, Project Alliancing encourages collaboration and innovation between project participants in a way that is unrivaled by traditional, more discrete forms of contract. In more traditional standard forms of contract, compensation is commonly tied to an individual party's performance and not the project outcome, which typically leads to decision-making that is "best for self" and not "best for project". Also, as projects become more dynamic, the Project Alliancing team's ability to react to multiple future outcomes is far superior to traditional contracting mechanisms that are more appropriate for slow, stodgy, fixed scope projects. This is reinforced by the Australia National Audit Office (2001), in its 'Contract Management: Better Practice Guide' when it states, "Alliance relationships are best suited for providing services that are *difficult to define* or are *likely to change substantially over time*, critical to an organization's performance or *requiring innovative solutions* from the provider and *creative management* by the purchaser."

It's important to note that Project Alliancing is more than just a contract; it's a new approach to conducting business and constructing projects that's a dramatic departure from traditional contracting practices-- where trust is in short supply and antagonism runs rampant. Driven by its compensation model, Project Alliancing demands collaboration, cooperation, and "best for project" decision-making. Other essential core alliance principles are a no-blame culture, equitable sharing of risk and reward, and open and honest communication between the parties (Ross 2003). Project Alliance's also require tremendous buy-in at the outset from the top management levels

[2] The National Museum of Australia project was a complete success. It opened on time, under budget, and with high quality scores due to a highly innovative, collaborative project team. For more information on the museum project, refer to Hauck et al (2004).

of each project participant in the cultural shift away from traditional risk-allocation and distrust, towards the principles of this new relational contracting mechanism. When project participants are carefully chosen for dynamic construction projects and all parties are completely committed to the alliance principles, Project Alliances can lead to extremely powerful innovative and collaborative relationships that result in outstanding project outcomes.

The following is a detailed explanation of Project Alliancing covering the specific topics listed below:

- Essential Features of Project Alliancing
- Risk Sharing vs Risk Transfer
- Compensation Structure
- Development of Alliance
- Value for Money?

Essential Features of Project Alliancing

While certain elements within Project Alliances differ from project to project, to maximize the probability for success all Project Alliance projects should have the following characteristics (Ross, 2003):

1) All uninsurable risk in the project is shared between alliance project participants, as opposed to specifically allocating risk which is common practice in traditional standard forms of contract (see Risk Sharing vs Risk Transfer below).

2) The Alliance participants are paid using a 3-limb, open-book compensation model where Limb 1 fees are guaranteed and Limb 2 fees are the maximum amount that the participant can lose for target cost overruns (see Compensation Structure below):

- *Limb 1*: direct project costs and project overhead
- *Limb 2*: corporate overhead and profit
- *Limb 3*: predetermined gainshare/painshare arrangement depending on how the final cost compares to the target cost

3) Project is governed by a "Project Alliance Board (PAB)" where decisions need to be unanimous

4) Project management team that handles daily issues is made up of participants from all parties; team makes decisions for the best interest of the project with no outside influence from actual employers

5) All alliance disputes and conflict will be handled internally with litigation being reserved only for very rare circumstances

Risk Sharing vs Risk Transfer

As explained earlier, with traditional standard forms of contract, owners often use contracts as legal shields in an attempt to shed risk to contractors through the form of harsh exculpatory contract clauses. This subsequently leads to larger contractors passing the same risk onto the shoulders of smaller subcontractors who are the least able to financially bear the risk. This attempt by project participants to protect themselves by shedding risk ultimately backfires and leads to adversarial relationships and costly litigious battles. As Rubin et al. (1999) writes, "the scenario for construction claims is invariably written right into the contract documents. Long before men and machines reach the jobsite, conditions for claims and disputes have often been signed by both parties". In fact, as projects become more dynamic and changes become more

frequent, no matter how fairly the drafter attempts to allocate risk with its associated liability, it is impossible to draft a contract to predict all possible outcomes (Campbell 2004). Therefore, this again leads to adversarial relationships as the project participants struggle to deal with the repercussions of "change" that are not supported by the contract.

Project Alliancing, on the other hand, handles risk completely differently than traditional contracts that attempt to allocate (or shed) risk between project participants. Due to the 'painshare-gainshare' compensation model structure, in Project Alliancing all uninsurable risk is shared between the contracting parties with the assumption that collective responsibility leads to improved overall project outcomes. The result of sharing risk (as opposed to allocating risk) is that the project team will either win or lose as a group, therefore, creating an environment where teamwork and collaboration are a necessity for success. There is no incentive in this scenario for a single party to focus on maximizing individually, since the individual succeeds only if the overall team and project succeeds. This leads to all project decisions being made "best for project" instead of "best for self".

Compensation Structure

If the core alliance principles (i.e. no-blame culture, open and honest communication, encouragement of innovative thinking, etc.) are the heart of Project Alliancing, then the backbone providing the structure is the compensation model. As previewed under *Essential Features of Project Alliancing*, Project Alliancing's 'gainshare/painshare' compensation model consists of a 3-limb, open-book compensation model. The 3 components of the compensation model are broken up as follows (see Figure 1). Limb 1 fees are all direct project costs, including rework, and project overhead incurred by the Alliance team members. These fees are viewable by all the contracting parties using 100% open-book accounting and must not include any hidden elements of corporate overhead or profit. Limb 2 fees refer to corporate overhead and profit. They are generally a fixed lump sum that is set as a percentage of the target cost. Limb 3 fees involve predetermined gainshare/painshare arrangements depending on how the final cost compares to the target cost.

The most critical component of Project Alliancing's painshare/gainshare model is the development of the target cost. Once the selection process of all the essential non-owner participants (NOP's) is completed (as will be discussed further in *Development of Alliance*), the new alliance begins an incredibly intense, dynamic period of collaboration and innovation in an attempt to develop a target cost for the project (Ross 2003). Once developed, this target cost is used as a benchmark with which to compare the actual cost (Limb 1 fees) at the end of the project. If the actual cost of the project comes in under the target cost, then the alliance as a whole wins and splits the savings (Limb 3 fees). If the actual cost of the project ends up greater than the predetermined target cost, then the entire alliance team loses and shares in the losses.

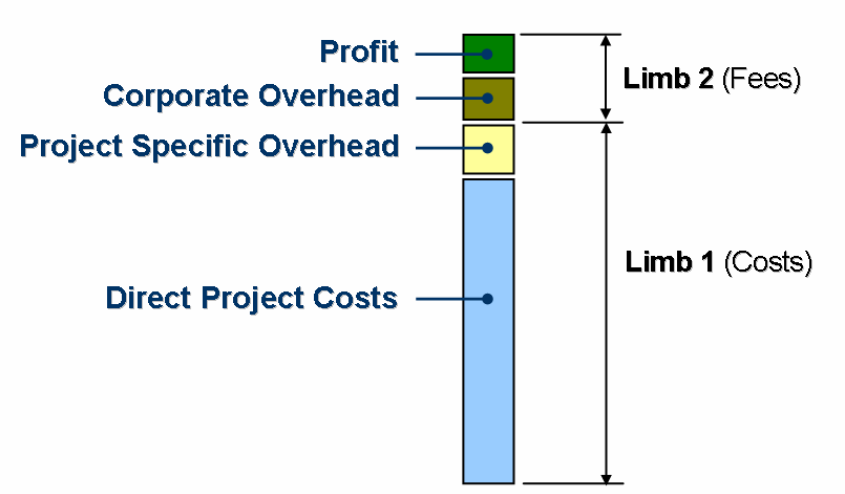

Figure 1: Project Alliancing Compensation Model (Ross 2003)

This may seem like an unacceptable risk for contractors who have agreed to give up a lot of control by sharing risk amongst the alliance. In order to address this concern, in pure Project Alliances NOP's are guaranteed to receive *at least* their Limb 1 fees (direct cost and project overhead), so that at worst their risk is capped at only losing their Limb 2 fees (corporate overhead and profit). Owners then take on the financial burden once the NOP Limb 2 fees are exhausted. By capping NOP risk, these provisions make Project Alliancing attractive to contractors and designers, while also providing the not so appetizing potential for total loss of profit and corporate overhead. These provisions are also attractive to owners since the capping of risk lessens the need for higher NOP fee percentages and inflated target cost estimates due to lower NOP risk exposure.

Now it's time to focus on Limb 3 fees and the predetermined "painshare/gainshare" arrangement (see Figure 2). As previously explained, the guaranteed Limb 1 fees are compared to the target cost at the end of the project in order to determine if the alliance wins or loses as a group. Before the target cost discussions even begin the alliance predetermines how the savings or over-runs will be divided between the owner and NOP's. While cost is indeed the major factor for determining the sharing of pain or gain, it is also supplemented by other non-cost factors, Key Result Areas (KRA's), which are measured using Key Performance Indicators (KPI's) (Ross 2003). The KRA's are other project outcomes besides cost (i.e. schedule, quality, etc.) that the owner values. The KRA's collectively are assigned an overall percentage of the target cost that the NOP's can either win or lose based on their performance in these areas. Individually they are weighted in relation to each other and scored based on the arranged KPI's. For instance, for a $100 million project, assume the actual costs came in $2 million under the target cost and the KRA's had been assigned as 2% of the target cost ($2 million). If the performance on the non-cost KRA's was exceptional, then the NOP's collectively could make up to $2 million more than their split of the $2 million cost under-run. On the other hand, if the team performed poorly on the KRA's the NOP's could lose up to $2 million dollars—more than wiping out their entire split of Limb 3 fees! Therefore, by including the non-cost factors into the painshare/gainshare model, the client provides extra incentive for the alliance to achieve outstanding performance in these areas.

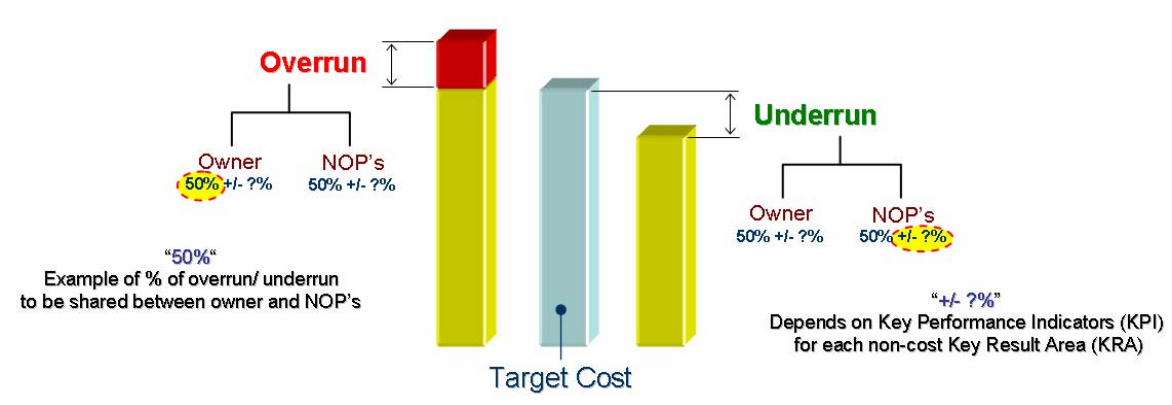

Figure 2: Limb 3- Sharing of Pain/Gain (Ross 2003)

Development of Alliance

After deciding that Project Alliancing is the right contracting mechanism for the proposed project, the process of developing the alliance begins. The development of a Project Alliance can be broken up into four distinct parts: selection of preferred alliance team members, commercial discussions, interim Project Alliance Agreement, and the final Project Alliance Agreement (Ross 2003).

The first step in setting up a Project Alliance is the selection of the preferred non-owner participants. Selection of the right participants is the most important step of the four aforementioned steps to developing an alliance. It is absolutely critical to the overall success of the project. This is due to the fact that the Project Alliancing contract is a relational contract that requires absolute dedication to a step change in behavior between the project participants in order to be successful. Therefore, besides typical technical skills, alliance proponents are chosen based on their willingness to buy-in completely to the ideas of sharing risk, open and honest communication, and creating a "no blame" culture that encourages collaboration and innovation. To this end, the selection process is very robust to ensure that it is virtually impossible to select the wrong proponents. To serve as an example, the following two figures offer the participant selection criteria and the selection process used for the aforementioned National Museum of Australia project. It is important to note that commercial discussions begin *after* the alliance team members have been selected and not during the selection process. The reason for this is that any conversation concerning project-related costs will increase the risk that the selection process will become tainted and the wrong participant could potentially be chosen.

Selection of National Museum of Australia Construction Alliance Partners

1) Demonstrated ability to complete the full scope of works including contributing to building, structural, mechanical and landscaping design.

2) Demonstrated ability to minimize project capital and operating costs without scarificing quality. (Value analysis and life-cycle costing.)

3) Demonstrated ability to achieve outstanding quality results.

4) Demonstrated ability to provide the necessary resources for the project and meet the project program. (Including resumes of key staff.)

5) Demonstrated ability to add value and bring innovation to the project.

6) Demonstrated ability to achieve outstanding safety performance.

7) Demonstrated ability to achieve outstanding workplace relations.

8) Successful public relations and industry recognition.

9) Demonstrated practical experience and philosphical approach in the areas of developing sustainability and environmental management.

10) Demonstrated understanding and affinity for operating as a member of an alliance. (Collaborative experience and views on risk/reward schemes.)

11) Substantial acceptance of the draft alliance document for the project including related codes of practice, proposals for support of local industry, and employment opportunities for Australian indigenous peoples.

12) Demonstrated commitment to exceed project objectives.

Figure 3: National Museum of Australia Selection Criteria (Hauck et al. 2004)

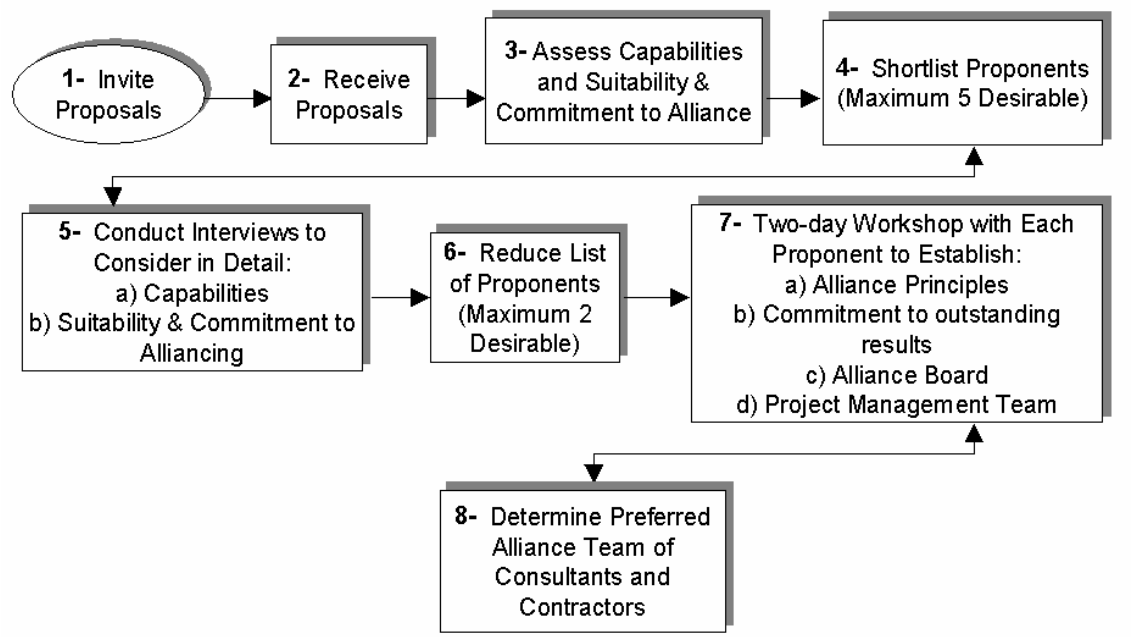

Figure 4: National Museum of Australia Selection Process (Hauck et al. 2004)

The second step in developing a Project Alliance is commercial discussions between the owner and NOP's. During commercial discussions the NOP Limb 2 fees (corporate overhead and profit) are set using the assistance of a third party independent alliance auditor. It is also during this step that all KRA's are set, weighted, and assigned to be a percentage of the target cost.

Once commercial discussions are complete and all the key issues are agreed, the alliance team enters into the interim Project Alliance Agreement (iPAA). In this stage NOP's are paid for actual costs incurred and are paid profit and overhead if the alliance enters into the final PAA. Also, all project participants can walk away from the project up until this step is completed. It is in the iPAA where the target cost is developed and as mentioned earlier, this is an incredibly intense, dynamic process. This is the first true test for the alliance and to achieve success, alliance participants must discard traditional distrust and communication barriers in order to produce innovative solutions for creating tremendous project outcomes.

One other issue needs to be addressed with the target cost. Since Limb 2 and 3 fees are linked to the target cost, there would seem to be an apparent conflict between the owners pushing to set a low target cost while the NOP's would prefer a higher target cost. However, this is not generally a problem due to following four issues (Ross 2003): 1) the target cost is developed using open-book accounting so there can be no hidden costs; 2) if the target cost is too high then the project may not proceed which is not in the best interest of any party; 3) profit for the NOP iPAA work will only be paid if the alliance enters into the PAA; and 4) there is potential for damage to reputation and future business relationships if owner feels NOP's attempted to inflate the target cost. Finally, and most importantly, if an owner actually believes this is a problem during development of the target cost, then the wrong project participants have been selected.

Once the contracting parties finalize the target cost and enter into the Project Alliance Agreement, only the owner has the right to terminate the contract beyond this point. This milestone marks the official formation of the Project Alliance and consists of all the remaining planning, design and construction efforts.

Value for Money?

One concern that clients may have with Project Alliancing is the value that is generated for the money spent. Since the project is not competitively bid, many clients (especially in the public sector) may be hesitant or unwilling to enter an arrangement where risk is shared and participants are selected before the target cost of the project is defined. Also there is the fear that, even once the target cost is developed, there is still a lack of certainty in the overall cost outcome. While there is obviously some uncertainty with Project Alliancing costs, competitively bid project costs are also far from certain. The lowest competitive bid is seen by many owners as the best value option, but when conflicts arise resulting in costly litigious claims, the real cost of the project is often much higher than the initial winning bid. The failure to understand that bid price does not equal final project cost is a major cause of the overall downward spiral of the construction industry (Egan 1998). Also, when dealing with complex, uncertain projects that have tight budget and time constraints, it is very difficult to imagine that a collaborative, innovative project team would produce a more costly project than a traditional project team where individuals have far less incentive to share information and work together.

Summary

We no longer live in a world where slow, stodgy, simple projects are the norm. Many projects, today, are extremely complex with limited budgets and increasingly tight schedules. Unfortunately, the traditional standard forms of contract that were designed to handle simple, slow projects have not adapted over time to address these significant changes. This situation has lead to adversarial relationships and overall distrust between project participants. For the most part, the solution in the past has

been to leave the harsh contract 'in the drawer' and hope that it will not be needed. Partnering, improved forms of dispute resolution, and innovative management techniques have developed in an attempt to try to reduce conflict, but they are only part of the solution and can not hide the inherent flaws of trying to use traditional contracts to handle dynamic projects. This is due to the fact that when things do go wrong, undoubtedly the contract will not stay in the drawer and the weaknesses of the contract will be exploited by project participants to the detriment of the project and team as a whole (Mosey 2001). Simply adjusting or altering traditional contracts is also not the answer. As Sir William Latham writes, "Endlessly refining existing conditions of contract will not solve adversarial problems. A set of basic principles is required on which modern contracts can be based" (Latham 1994). Dr Martin Barnes echoes Latham's sentiments when he states, "Civil engineering management in the next century will be dramatically different from the last, thanks to a growing and long-overdue realization that the traditional forms of contract have had there day" (Barnes 2000). Therefore, what is needed is more than just a substantial overhaul of current contracts, but instead the development of new relational contracts that foster collaboration and embrace 'change'.

Fortunately, within the global construction industry there are progressive groups who believe that construction contracts must begin to change. One example is British Petroleum (BP) who, when faced with incredibly complex, uneconomical North Sea oil reserve development projects, acknowledged that a step change in behavior was necessary in the way it worked with designers and contractors. To this end, BP developed a new innovative relational contract that is known today as Project Alliancing. Project Alliancing is a dramatic departure from traditional contracts in that it encourages project participants to work as an integrated team by tying the commercial objectives (i.e. profit) of all the parties to the actual outcome of the project. In this arrangement all decisions are made "best for project" and not "best for individual" since the alliance either wins or loses as a group. Today, maybe surprisingly, Australia's public sector is one of the principal pioneers in using Project Alliancing and has had tremendous success utilizing this contracting mechanism on large, complex Australian government capital works projects. In fact, as Gallagher and Hutchinson (2001) write, during an International Bar Association conference, representatives from the USA and Europe, "could not believe that Australian public sector procurement methods had advanced to the point of conscientiously considering, if not preferring, Project Alliancing to deliver high profile complex capital works projects."

While many clients, designers and contractors are still skeptical of using relational contracts such as Project Alliancing, Ross (2003) explains that "the success achieved by these pure alliances is hardly surprising—the alliance construct creates a single seamless organization, focused on specific project outcomes, totally free from the barriers that traditionally inhibit collaboration and limit the development of powerful relationships (under risk transfer forms of contract). It would be a surprise and a great disappointment if an alliance, used in the right circumstances and set up properly, failed to deliver a good outcome for the owner." While the construction industry is historically slow to adapt to change, the positive empirical evidence that is growing from the use of collaborative relational contracts, such as Project Alliancing, will soon be impossible to ignore. In time the use of these relational contracts for dynamic projects will undoubtedly become a competitive business advantage as progressive, innovative businesses begin to differentiate themselves from their slower reacting, less progressive competitors.

References

Australia Government Department of Defence-- Defence Material Organization (2005). http://www.defence.gov.au/dmo/lsd/alliance/alliance.cfm. Accessed 1/22/2005 at 2PM.

Australia National Audit Office (2001). "Contract Management: Better Practice Guide."

Barnes, Martin (2000). "Civil Engineering Management in the New Millennium." *Civil Engineering*. Vol.138, Issue 2, May. UK.

Campbell, David (2004). "Ian Macneil and the Relational Theory of Contract." Center for Legal Dynamics of Advanced Market Societies (CDAMS) Discussion Paper, Kobe University.

Cockram, Matthew and Chisnall, David (2002). "Relationship-first contracting." Bell Gully Publications. www.bellgully.com. Accessed 5/15/2004 at 3PM.

Egan, Sir John (1998). "Rethinking Construction." Department of Environment, Transport, and Regions, London, UK.

Gallagher, John and Hutchinson, Andrew (2001). "Project Alliancing- Some Answers". Department of Infrastructure. State of Victoria.

Hauck, Allan J. et al. (2004). "Project Alliancing at National Museum of Australia-Collaborative Process". *Journal of Construction Engineering and Management*. Jan/Feb 2004.

Hutchinson Andrew (1999). "Creating Successful Collaboration: Select the Right Participants". JMJ Associates. unpublished. www.defence.gov.au/dmo/lsd/alliance/alliance.cfm. Accessed 1/23/2005 at 8PM.

Knott, Terry (1996). No Business as Usual. Britannic House, London, UK.

Latham, Michael (1994). "Constructing the Team." HMSO, London, UK.

McGuinn, John F. (1989). "Use and Abuse of Risk Allocation in the Construction Industry." Allocating Risks in Today's Construction: A Search for Fairness and Solution. The Fifth Annual Meeting of the American Bar Association Forum on the Construction Industry. New Orleans, LA.

McInnis, Arthur (2003). "Relational Contracting Under the New Engineering Contract: A Model, Framework, and Analysis." Society of Construction Law, UK.

Mosey, David (2003). "PPC 2000: The First Standard Form of Contract for Project Partnering." Society of Construction Law, UK.

Peters, Renaye et al. (2001). "Case Study of the Acton Peninsula Development: Research of the Case Study of the Construction of the National Museum of Australia and the Australian Institute of Aboriginal and Torres Strait Islander Studies". Queensland University of Technology, July.

Ross, Jim (2003). "Introduction to Project Alliancing". Alliance Contracting Conference, Sydney, Australia.

Rubin, Robert A. et al. (1999). Construction Claims: Prevention and Resolution. Third Edition, John Wiley and Sons, Inc.

Sakal, Matthew W. (2004). "Constructing Projects in a Dynamic Environment: A Focus on Relational Contracting". Masters of Engineering Thesis, UC Berkeley, CA. unpublished.

Steen, Richard H. (1994). "Five Steps to Resolving Construction Disputes- Without Litigation." *Journal of Management in Engineering*. July/August.