

Alliancing – reshaping infrastructure delivery in Australia

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Introduction

Infrastructure delivery in Australia is big business, very big business. Most States have a critical need to deliver ambitious programs for transport, water, health and energy infrastructure in very short timeframes.

According to recent press reports, up to \$40 billion has been earmarked by State Governments for infrastructure spending in 2007/08, and more than \$150 billion over the next four years.

Much of the publicity and press has surrounded the need for partnerships between the public and private sectors to facilitate and expedite the procurement of these assets. Most commonly, the focus of the PPP debate has been on privately financed and owned infrastructure such as toll roads. However, there are other ways in which governments and private sector participants can develop and implement partnerships for the delivery of infrastructure. One of the most recent and successful models which blends the resources of the two sectors is project alliancing.

Alliancing, as a project delivery model, is a relatively recent phenomena in Australia. Like any new fashion, it may have quickly risen and faded just as quickly. But that is not what has happened. The take up across Australia has been widespread and sustained particularly for public infrastructure procurement.

This paper explores the background to the development of alliancing in Australia and why it is becoming such an integral part of the delivery of infrastructure across the country.

Something had to change

The 1980s – a construction 'cesspool'

One of the more seminal moments for the Australian construction industry was the industry wide collaboration that led to the 'No Dispute' report in 1990¹.

The report was largely a reaction to the degeneration of contractual relationships during the hectic 1980s when the industry saw a massive increase in the incidence of contractual claims and the development of a pervasive adversarial relationship between owners, contractors and subcontractors. 'No Dispute' was intended to mark a new beginning in project delivery relationships for the industry.

Disappointingly, although there were ad hoc attempts during the following decade to implement different project delivery strategies, there was no industry wide evidence of a genuine commitment to change.

As things stood in 1990, most building and construction projects were delivered by 'traditional' delivery mechanisms. Principally, owners and project managers relied on a 'design then construct' model although a (relatively small) percentage of projects involved a single design and construct contractor. The prevalent forms of contract were the Australian Standard AS2124-1986 and JCC², although many government departments doggedly persisted with NPWC³.

Each of those contracts relies on the appointment of a contract administrator (or superintendent) who discharges both a role as the owner's agent (for example, issuing variations) and a quasi judicial role, particularly to discharge an array of certifying functions. However, it was a recurring theme that the contract administrator was an employee or associate of the owner inevitably leading to the perception, and often the reality, that the contract administrator could not carry out those certifying roles objectively.

It had also become the habit of owner's lawyers during the 1980s to heavily amend these standard form of contracts. The amendments were generally aimed at:

- (a) reallocating the risk from the owner to the contractor (the risk of latent conditions was a frequent casualty in this regard);
- (b) introducing harsh time bars directed at denying contractors the entitlement to fair claims; and
- (c) the insertion of onerous warranties and indemnities by the contractor.

Neither were the contractors blameless. As most contracts had fixed price lump sum compensation entitlements, the 'trick' for contractors was to 'buy the job' with a low bid and then recoup the money that had been left on the table through an endless stream of variations, many of which were largely manufactured.

Another important ingredient was the decline in the standard of design documentation. This is not a criticism of architects or engineers, but rather a function of the haste at which project developers (including government agencies) wished to transition from the design to the construction stage. The end result was poor, incomplete documentation which made bidding difficult, but made the search for variations much easier.

The end result was a repetitive litany of time and cost overruns, claims and disputes and acrimonious relationships.

¹ No Dispute: A report by NPWC / NBCC Joint Working Party May 1990

² A suite of contracts promoted by the Royal Australian Institute of Architects

³ National Public Works Conference (Edition 3, 1981)

As 'no Dispute' records:

*'During the late 1980's there developed a widespread view in the Australian building and construction industry that there had been a very large increase in the incidence of contractual claims and disputes in the industry in the previous ten years. There seemed to have been a change in attitudes which led parties to pursue or resist claims vigorously and often with little regard to the particular merits of the claims.'*⁴

The industry's response – 1990 to 2000

With the advent of an appropriate Australian Standard, AS4300-1995, one notable feature of the following decade was the increasing use of a design and construct (D&C) model for project delivery. For owners, the model provided both single point accountability for design and construction, and also a means to fast track development projects with immature planning and design.

Owners also began to experiment with 'cost plus' construction management contracts, particularly with building projects. The contractor or construction manager was entitled to reimbursement of the costs of trade packages and a margin for profit and overhead. The protection for the owner in this relatively open-ended arrangement was that the contractor provided a guaranteed maximum price for the project and agreed to absorb any costs which exceeded that amount. Frequently, if the total costs for the project were less than the GMP, the owner and the contractor would share the savings.

One of the most prominent developments during the 1990s was the experiment of 'partnering', a model which had worked relatively well in the United States and the United Kingdom. The model required the owner and the contractor (and often subcontractors and suppliers) to commit to a partnering charter which facilitated the development of an appropriate, non-adversarial project relationship. The charter was a 'moral' commitment and had no legal effect – the legal relationship between the parties was still contained in a conventional contract with traditional risk allocation and often harsh penalties and time bars for the contractor.

The Australian construction industry never really came to grips with partnering and several high profile partnering projects ended with the same old cocktail of cost and time overruns, claims and acrimony.

Although each of these experiments was a laudable attempt to carry through with the philosophy from 'no dispute', they made limited headway in producing industry-wide progress in optimising project outcomes. As one notable report summarised the results of an industry-wide survey in 1998:

'The ACA survey findings, with respect to clients' experience and expectations of contractors, included:

- *project outcomes were sub-optimum on too many projects;*
- *clients continue to utilise traditional delivery systems which they acknowledge have shortcomings and that often lead to adversarial relationships and overruns in cost and time;*⁵

In short, there was still a long way to go.

The core of the problem

The delivery of a construction project is a messy, complicated business.

At the risk of over-simplifying the process, there are five 'fundamentals' which are likely to play a significant role in the success of the project:

1. the process of selecting the non-owner participants

⁴ 'No Dispute' (Supra), page 1

⁵ Australian Constructors Association, Relationship Contracting – Optimising Project Outcomes, 1999

2. the management and governance of the definition and execution of the project;
3. the method of fixing the design and price;
4. risk allocation and management;
5. the compensation framework for the non-owner participants.

The conventional models (design then construct, design and construct and construction management) address each of these fundamentals in the following way:

- (a) they generally involve a competitive bid process which requires bidders to carry out substantial work (often including significant design work) but, in the ultimate analysis, focuses on the cheapest, conforming bid;
- (b) a contract administrator or superintendent is appointed to facilitate (and often 'referee') the relationship between the owner and the contractor. Generally, the contract administrator either has the same stake in the project as the owner or does not have any real stake in the outcome of the project;
- (c) identified risks are fully allocated, often 'dumped' on the contractor, so that when a risk eventuates, the party that has the responsibility for the risk is left with the task of responding to the event;
- (d) the price is usually determined by the contractor only (as part of the bid process) and the design is usually finalised by the owners' consultants with little input from the contractor (even on a design and construct contract, the Principal's project requirements are finalised well before the contractor is engaged);
- (e) the contracts are 'hard dollar', either through fixed price lump sum or guaranteed maximum price leaving the contractor with twin objectives:
 - (i) finding ways to increase the price (ie. variations);
 - (ii) efficiently managing his costs to widen his margin.

Each of these features tended to work against a 'best for project' outcome. Although trouble-free projects skated through these issues to produce positive outcomes, the vast majority of projects are not trouble-free and when a project is under stress each of these five factors tended to work against an expeditious or effective solution and promoting an adversarial environment.

Ringling in the changes

The last five years have seen a quiet revolution in project delivery in Australia.

In particular, the new millennium has brought with it two significant changes in approach to project delivery of public infrastructure:

- (a) enormous effort has been directed to developing and implementing appropriate frameworks for privately funded public private partnerships (PPPs) across Australia;
- (b) there is now much greater appetite (and the right environment) for the use of relationship-based 'soft dollar' contracts.

This is particularly so with large, infrastructure and engineering projects. In contrast, residential and commercial building projects, where design and construction methods are much more settled and the scope for innovation is much smaller, the appetite for departure from hard risk, hard dollar contracting strategies is far less apparent. Private developers and their financiers remain primarily focused on certainty of price outcome and (perhaps misguidedly) remain unconvinced that a 'soft dollar' strategy is inconsistent with that objective.

Privately funded infrastructure (PPPs)

Most States have well developed, fully detailed and transparent frameworks for PPPs and, particularly in NSW and Victoria, an impressive list of road and water projects have been delivered pursuant to these frameworks.⁶

PPPs provide a 'cradle to grave' asset cycle and project delivery constitutes only a part (although a significant part) of that cycle. Because the bidding process will invariably require bidders to nominate the outturn cost of the service to be provided (ie. the toll for a road or bridge), the tendency has been for most PPP projects to be delivered on a hard risk, hard dollar conventional basis where the outturn cost of the design and construction of the asset is perceived to be more certain and predictable.

The project deed (between the government and the PPP consortium) will generally allocate most risk to the consortium in an effort to maintain certainty of price outcome, and the consortium will generally pass on the same bundle of risks to the contractor (usually engaged on a design and construct basis).

The wisdom of that approach to risk allocation and the assumptions on which it is based is examined in more detail below.

'Soft dollar' contracts

What is a 'soft dollar' contract?

At the risk of over-simplifying a complex delivery structure, the following criteria provide the usual characterisation for a soft dollar contract:

1. selection is based on non-cost criteria;
2. generally, the constructor is chosen at a very early stage in project design;
3. the contract has a heavy focus on developing and maintaining relationships between contracting parties;
4. there is a collaborative approach to governance and management;

⁶ Some examples are Melbourne City Link, Mitcham to Frankston Freeway, Cross City Tunnel and Western Sydney Orbital.

5. risk is shared or equitably allocated and collaboratively managed;
6. the compensation of the non-owner party or parties usually has three components:
 - (a) the recovery of actual direct costs;
 - (b) a transparent margin for overheads and profit;
 - (c) a mechanism for pain and gain based on performance against cost and non-cost criteria.

There is a broad range of contract models that constitute the continuum of relationship contracts. Some of the more identifiable of these are discussed below. The most 'pure' of these models is a project alliance and it provides the best starting point for an analysis of soft dollar contracts.

Alliancing – the 'outer edge'

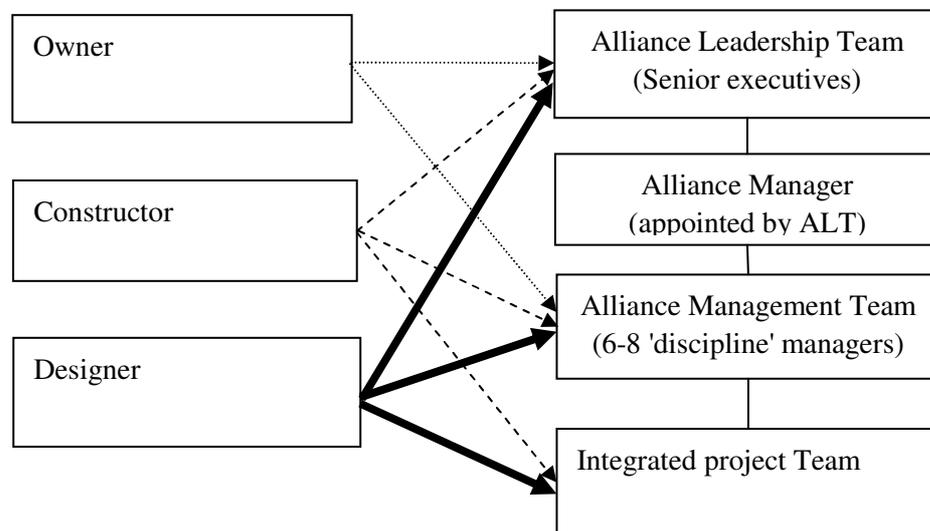
Characteristics of alliances

A project alliance is where 'an owner and one or more service providers (designer, constructor, supplier etc) work as an integrated team to deliver a specific project under a contractual framework where the commercial interests are aligned with actual project outcomes'.⁷

An alliance, in its purest form, includes a number of radical approaches to project delivery:

- (a) the owner, the contractor and the designer(s) are all parties to the one project agreement;
- (b) the governance of the project is joint. Instead of decision making by an owner or superintendent, with consequent directions to a contractor, the alliance leadership team (or alliance board) provides joint leadership and can only make decisions on an unanimous basis;
- (c) the project is delivered by an integrated project team, not the contractor under the supervision of the superintendent and owner;
- (d) although some isolated risks are retained by the owner, almost all project risks are collectively shared and managed by all parties;
- (e) the parties agree not to hold any single party legally responsible for an error, negligence or poor performance. There is a 'no blame' culture;

Figure 1 – Alliance organisation structure



The compensation framework is based on the premise of 'all win / all lose' so that parties share gain or pain depending on project outcomes.

This is achieved by:

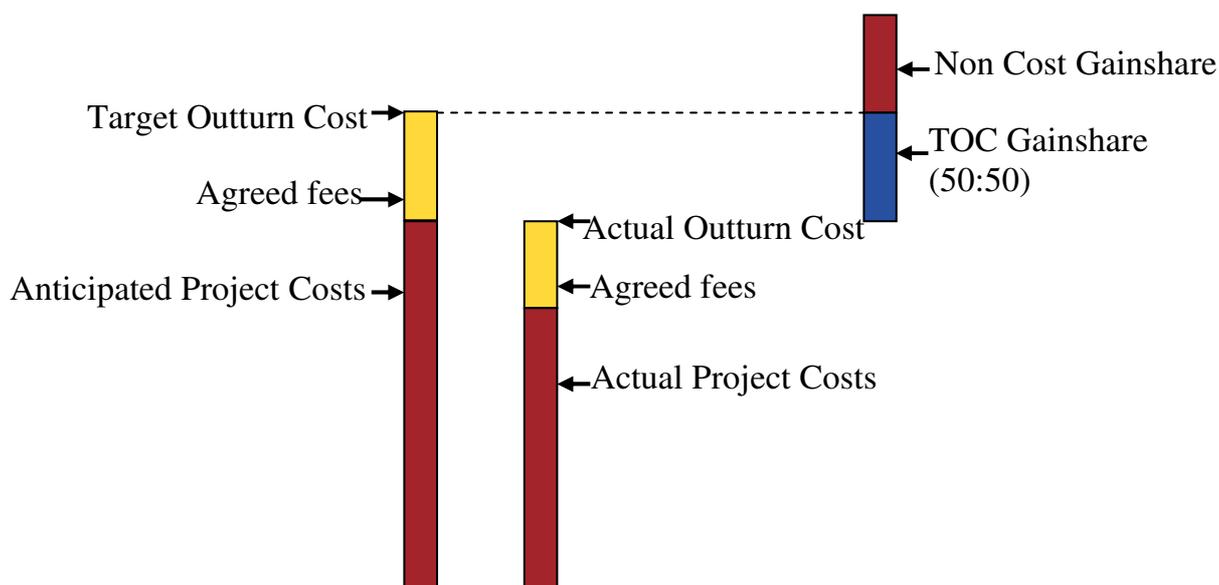
- (a) the parties jointly developing a Target Outturn Cost which includes all expected direct costs, allowances for project risks, and a fee or margin for each non-owner.

⁷ Jim Ross, Introduction to Project Alliancing, April 2003

- (b) the owner reimbursing actual direct costs and paying agreed fees
- (c) all parties sharing in the gain of any cost underrun and the pain of overrun
- (d) further gain or painshare for performance in non-cost key result areas such as time, environment management and stakeholder relations.

Non-owner participants will generally only share 'pain' to the extent of their margin (in other words, they enter the project knowing that the worst financial outcome is recovery of direct costs only).

Figure 2 – Commercial Framework



Another significant departure from traditional contracting is the underpinning contract documentation. Because projects risks are not prescriptively allocated and because most of the project administration left to the discretion of the leadership and management teams, the alliance agreement is usually (relatively) short and simple.

However, the structure and documentation of an alliance is only half the story. For an alliance to succeed, it is critical for the participants to enthusiastically drive the cultural change that is necessary to achieve alliance objectives.

It is common on many non-alliance projects for there to be an emphasis on team building, but an alliance must take the integration of team members, and their commitment to 'best for project' outcomes to a new level.

The Alliance process

Chronologically an alliance has four core stages:

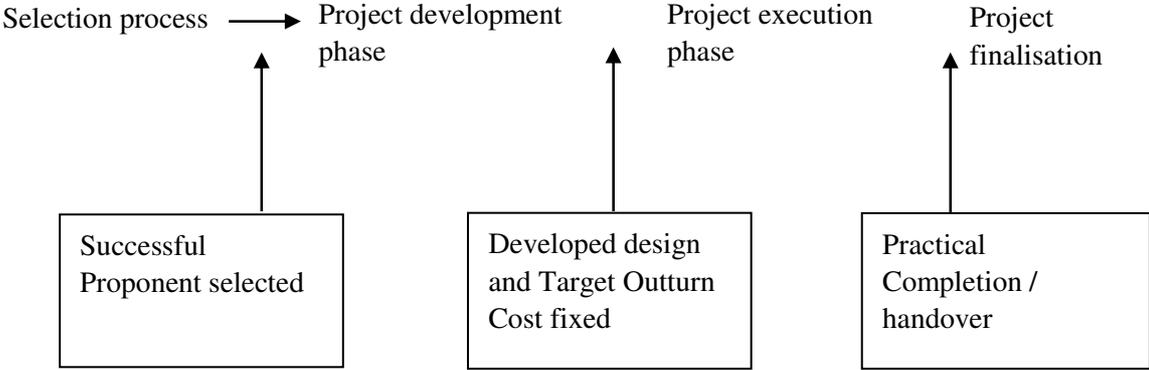
Stage 1 (selection process) – one proponent is selected on non-cost criteria after tenderers have submitted proposals and participated in workshops with the evaluation panel. The panel is assessing each tenderer on project understanding, commitment to alliance principles and capacity to innovate and deliver outstanding outcomes.

Stage 2 (project development) – the alliance team is assembled, design is developed, a target outturn cost (TOC) is developed and the commercial framework for the alliance is finalised. Early Works may be carried out.

Stage 3 (project execution) – if the owner is satisfied with the TOC and the status of the project generally, it will commit to the execution phase. Design is finalised in tandem with construction.

Stage 4 (finalisation) – following practical completion and project handover, the alliance carries out maintenance obligations and the commercial project outcomes are closed out.

Figure 3 – Alliance process phases



Track record

Although the earliest examples of alliances in Australia date back to the mid-1990s⁸ the momentum for alliancing as a means of delivering infrastructure projects did not really take hold until Sydney Water adopted an alliance for the North Side Storage Tunnel and the Federal Government opted for an alliancing model for the National Museum in the late 1990s.

Since then, the Queensland government has probably demonstrated the greatest commitment of any public sector to alliancing. Awoonga Dam, the Port of Brisbane Motorway, the Norman River Bridge, North Queensland Gas Pipeline, Burnett River Dam and Wivenhoe Dam Redevelopment are several of the notable examples of successful alliancing projects in Queensland within the last five years. Many others are in process – for example, the final stage of the Inner Northern Busway, Boggo Road Busway, Tugun Bypass, Tarong’s Coal Transport Project, SEQIP Rail Program Alliance (Trackstar), the Springfield Transport Corridor, the Western Corridor Recycled Water Project and the Centenary Highway Upgrade are projects worth in excess of \$3bn which are currently being delivered through project alliances.⁹

In New South Wales, Sydney Water continues to utilise the alliance model for many of its water and sewerage projects. Recently the Road Traffic Authority (RTA) and the Transport Infrastructure Development Corporation (TIDC) have also established alliances for several complex and high profile projects including Lawrence Hargreave Drive and the Kingsgrove to Revesby Rail Clearways Project.

In 2006, the Victorian Government published an alliancing framework (called the Project Alliance Practitioner’s Guide) and several road projects, most notably the Tullamarine Calder Interchange Project are now being delivered under that framework.

The Practitioners Guide is a very tangible demonstration of Victoria’s desire to utilise alliancing. As the then Treasurer said in the forward to the Guide:

⁸ These include Wandoo B Oil Platform, East Spar Project and HBI project – all in Western Australia

⁹ This list does not include ‘hybrid’ or ‘contracted’ alliances such as the Southern Region Water Pipeline and Gold Coast Desalination Plant

'... The Guidelines reinforce Victoria's commitment to world's best practice in meeting the State's infrastructure needs ...when used appropriately, Project Alliances have the potential to produce many positive outcomes for the State including greater certainty over project costs, opportunities for innovation, and improved performance in the delivery of infrastructure projects.'

Other Victorian examples are the Gippsland Water Alliance, Middleborough Road Grade Separation, the Port of Melbourne Channel Deepening and the embryonic Sugarloaf Pipeline Project.

In Western Australia, the sprinkling of alliances have been generally in water and road projects, such as the desalination plant, Roe Highway 7 and the Southern Gateway Alliance.

Although alliancing has largely been confined to public infrastructure projects in Australia, there is evidence that the private sector (particularly in the energy and resources industry) will turn to alliancing more frequently. For example, Anglo has adopted a project alliance framework for the delivery of key aspects of both its Dawson Project and Lake Lindsay Project and Centennial Coal will use a project alliance to develop Anvil Hill Mine. The controversial pulp mill project in north Tasmania will also be delivered by a project alliance.

Why use an alliance?

The experience from completed alliance projects has been varied, but there are some common themes that have emerged on the unique benefits and advantages that alliancing delivered.

(a) one team, no 'positioning'

Almost universally, the feedback from alliances has unconditionally endorsed the success of having one integrated project team rather than separate owner, contractor and design teams.

Reducing or eliminating 'man marking' and contractual positioning correspondence has radically streamlined and expedited project decision-making and provided a much more suitable environment for 'best for project' focus.

That environment has facilitated both innovation and speedy responses to unexpected project challenges. The response of the Burnett River Dam Alliance to the insolvency of Walter Construction Group and the response of the Woodlawn Bioreactor Alliance to sudden pavement failure are two good examples of how, in a 'no blame' environment, the focus can remain on solutions not allocating fault and liability.

(b) non-adversarial climate

The 'no blame' liability framework and the governance structure of an alliance combine to eliminate (or at least drastically reduce) adversarial conduct between parties. The prompt escalation of issues for unanimous resolution by the ALT avoids claims festering and acrimony developing between project participants.

There are no long-tail arbitrations or litigation to continue to tie up company resources long after project completion.

No alliance has yet found its way to either court or arbitration.

(c) more robust TOC

The discipline, rigour and effort that is collectively invested in arriving at a mutually acceptable Target Outturn Cost (or Target Cost Estimate) has, almost without exception, resulted in a very accurate and reliable forecast of likely outturn cost. Almost all completed alliances in Queensland have reported less than a 5% difference between target and actual outturn cost.

Unlike the pricing for lump sum and GMP models, the process of assembling, verifying, debating and finalising the TOC, in tandem with design development, is carried out collectively and transparently by the owner and non-owner participants and generally over a longer time-frame. As the process unfolds, and cost pressure points are identified, and design can be quickly reviewed and improved to respond to those pressure points.

The TOC is also developed against a thoroughly debated risk profile where all parties have an opportunity to express a view of the magnitude of particular risks and appropriate allowances for them.

The 'hard' conversations about pricing elements and the alignment between scope, risk and price occur upfront rather than at the end of the project in the context of unresolved variation claims when there is much less incentive for all parties to 'close off' conflicting positions.

The robustness of the TOC is also underpinned by a very restricted regime for subsequent variations. There are usually very few events that will result in the TOC being adjusted.

The bottom line is that an alliance TOC is generally a much safer and more reliable predictor of outturn cost for the owner than fixed lump sums and GMPs under more traditional contracts .

(d) **Flexibility**

Alliances work best for complex projects where the final shape of the project is not well defined at the outset and the project delivery model needs sufficient flexibility to allow change and adaptation.

There is no also doubt that an alliance model offers enormous flexibility to the owner for implementing scope changes and accommodating both unexpected demands (for example, from stakeholders) and unexpected risk events.

In the current rush to commence critical infrastructure projects where comparatively little planning and design has been carried out by the owner, an alliance provides the best framework to 'fast track' design and construction elements without having to negotiate the usual minefield of contractual positions and claims.

Projects like the current urgent water projects in Queensland simply could not have been delivered within the required timeframes using more traditional contract models.

(e) **Legacy**

Project teams with a positive alliance experience will generally carry that experience into other non-alliance projects, providing an immediately platform for better, cooperative and non-adversarial project relationships.

In Queensland at least, the major contractors and designers with substantial alliance experience are consciously enmeshing alliance principles across the whole of their workforces.

Additionally, because subcontractors are actively pursuing sub-alliances and relationship-based contracts, there is a vertical, as well as a horizontal, spread of alliance behaviour throughout the industry.

In a similar vein, because alliancing requires all parties to consider and address the full spectrum of project risks and issues, there is now generally a much better understanding within owner organisations of the structure, processes and position of contractors and designers (and vice versa).

The legacy for the construction industry should be an evolutionary change in behaviour and attitude across large sections of the industry.

(f) **Better utility of scarce resources**

The use of 'soft dollar' selection processes greatly reduces the drain on engineering and construction resources at a very busy time across the industry. The successful proponent is chosen earlier and before significant design and pricing work has been carried out. Compare that with a fully priced D&C bid process where each bidder (including one who is not ultimately successful) is required to have a team of designers and estimators tied up for an extended period preparing the bid.

Additionally, owners with scarce internal resources for capital works program have been grateful for the reduced need to 'mark up' against contractor resources, and to utilise the people within the alliance to carry out roles which have previously been filled by the owner's own staff. We sometimes overlook the fact that government agencies and departments are also bearing the brunt of the national skills shortage.

The constraints

Alliancing is certainly not the solution for all projects. It is unlikely to deliver substantial value to simple, straightforward projects where neither flexibility nor innovation are desired.

Even on more complicated and suitable projects, it will continue to be constrained in its implementation as a project delivery model by at least three concerns:

- (a) government proponents continue to be confronted by the need to tangibly demonstrate 'value for money' from a bid process which does not involve price competition;
- (b) the no blame liability framework continues to concern many owners, particularly because of the restricted availability of professional indemnity insurance;
- (c) alliancing projects are still, by and large, unbankable with private financiers because of a perceived lack of certainty of outturn cost.
- (d) the availability of owner staff to properly participate in the alliance.

Each one of these bears closer scrutiny.

'Value for money'

The 'value for money' debate continues to rage with sceptics arguing that a negotiated Target Outturn Cost without any competitive pressure is more likely to be conservative and 'fat' and thus the most likely outcome is a cheaper final outturn cost with non-owner participants sharing the savings.¹⁰

These perceptions have been addressed by using independent reviewers and estimators and introducing more transparency into pricing components.

Interestingly, each of the publicly available post-completion studies that have been commissioned to evaluate the VFM outcomes of project alliances have largely concluded that the project produced a lower outturn cost than would have been possible under a more conventional delivery strategy.

For example, on the Port of Brisbane Motorway Project, Evans & Peck carried out a detailed prediction of the likely cost of the project under a more traditional project delivery model and concluded:

¹⁰ One reaction to this criticism has to be to use a 'competitive TOC' process where two shortlisted bidders both prepare TOCs before one is chosen to deliver the project.

*'Based on the predictive model it can be demonstrated that the Alliance has delivered a financial outcome which is approximately \$15m better than what may have been achieved through a traditional design then construct delivery method.'*¹¹

However, it is particularly important to the integrity of alliancing, that non-owners are not seen to be manipulating the basis of the commercial framework.

There is a rumbling of discontent within some owners that the corporate financial policies of some constructors and designers are now being shaped to re-badge some corporate overhead costs as direct costs (and thus directly reimbursable under usual alliancing principles) to bolster the profit component of their headline project margins.

'No blame'

There is no doubt that, *'no blame / no dispute'* complicates insurance arrangements and potentially gives non-owner parties a soft landing if the project is a financial or engineering disaster. Usually, the 'pain' suffered by them for unexpected owner loss and costs, in the worst case, is limited to the amount of their fees for profit and overhead.¹²

However, some perspective on this issue is pertinent. On a \$200m project, this cap on pain is likely to be of the order of \$12m to \$15m and, if pain is shared 50/50, the cap is not exceeded until the project cost overrun reaches \$24m to \$30m. On most projects, the chance of a design or construction defect resulting in increased costs of that sort of magnitude is very remote.

Of course, on some 'brownfield' projects, such as busy railway upgrades or water supply facilities, owners are potentially exposed to substantial financial losses which may well exceed the pain cap. However, even in non-alliance contracts, contractors and designers are now generally unwilling to accept open-ended uninsured exposure to financial and consequential losses. If those risks are transferred to non-owners, the risks are (with some difficulty) priced and the allowances made for them increase the cost of the project.

In the end result, generally it will be a better strategy for the owner to accept a reasonable cap on these liabilities and work with the non-owners to manage them within tailored insurance programs.

In an alliance context, this will generally mean specifically designed construction risk, public liability and professional negligence policies that complement the 'no blame' releases given by the parties to each other.

The insurance industry has responded well to the unique challenges of alliancing and there is now a vibrant competitive market for alliance projects. There is also a specific project-based PI product which provides cover for design negligence within the 'no blame' alliance environment.

'Uncertain Outturn Cost'

Although financiers (and Treasury officials) dislike the open endedness of 'target' prices (in contrast to guaranteed maximum prices or fixed prices), the reality is that a rigorously compiled alliance TOC is likely to be a far better indicator of final outturn cost than any GMP or lump sum price tendered for a traditional contract.

That is because the alliance participants, having debated and finalised allowances for project risks, will generally agree that very few events will lead to an adjustment to the TOC as the project unfolds. In other words, the initial TOC is very likely to be the final TOC. That is very different to a conventional fixed

¹¹ Evans & Peck, Port of Brisbane Motorway Alliance Learning Experience (September 2003), p3. See also the report by Opus International Consultants on the Grafton Gully Alliance Project in New Zealand dated 22 September 2004 which reached similar conclusions.

¹² Except in the case of wilful misconduct and, in some cases, indemnities for third party liabilities

price contract where document discrepancies, latent conditions, council delays and owner decision-making delays will all lead to variations or price adjustments.

Crudely put, a fixed price or Guaranteed Maximum Price (GMP) is anything but fixed or guaranteed. An alliance TOC is a much safer bet.

The financiers have been slow to appreciate this apparent paradox but there are signs that alliancing is slowly becoming more bankable.

The 'thin' client

Alliances require senior executive commitment by all participants. Not only do the parties have to provide members for the Alliance Leadership Team, but it is also essential for them to properly resource the establishment of the alliance, including the goal-setting, commercial alignment and culture development processes.

Government agencies, particularly those with lean executive teams, may struggle to find enough of the right bodies and the temptation will be to second resources from consulting firms to deputise in these roles. It is difficult to be critical of the consultants in these positions, however, they cannot be expected to bring to an alliance the 'true owner' and accordingly the alliance is likely to suffer.

The shortage of owner personnel has also occasionally had the unwelcome consequence that the TOC has largely been produced by the non-owner and the owner has never fully embraced or endorsed the TOC as a contributing participant. That lack of 'ownership' can potentially block open discussions between participants when the TOC is under stress or, equally, where the actual project cost is well under the TOC.

Other relationship contracts

The 'hybrids'

Although there is now a widespread commitment to relationship contracting principles, many owners and project developers (including a number of government departments and statutory authorities) remain to be convinced that the 'pure' project alliancing model necessarily provides the solution for their projects.

There are a number of good examples where alliancing principles have been utilised within a more conventional project delivery mechanism. Notably, although perhaps not surprisingly, each of these examples adopts quite a different approach.

Example 1 – 'contracted' alliances

Many municipal councils in NSW and Queensland have embraced a form of alliance which has often been referred to as a 'contracted' alliance. One of the first projects to adopt this model was the Maroochy Sewerage Treatment Plant Upgrade in 2000.

The core difference from the 'pure' alliance model is that the council owner is unlikely to be able to, and accordingly does not, contribute the same level of resources to the alliance as in a pure alliance. This has often been referred to as a 'thin client' application. There is no integrated project team which includes owner representatives which is collectively charged with delivering the project.

Other key differences are that the model does not adopt a no blame / no sue framework and the risk for delivering the project (both construction and design risk) squarely rests with the non-owner participants. Thus, the professional indemnity policies of the non-owner participants remain in play and the council has a greater level of comfort in relation to design errors discovered after completion.

Most contracted alliances limit the liability of the non-owner participants in the following way:

- (a) liability is open-ended to the extent that the participant has insurance cover;
- (b) to the extent that insurance cover is not available, the cost of responding to liability (ie. rectifying a design error) is treated as an alliance cost and thus falls under the general cost overrun cap (ie. the amount of profit and overhead allowed in the target cost estimate).

Most exponents of the contracted alliance model acknowledge that some of the benefits of a pure alliance are sacrificed, but nonetheless the framework provides a very workable, relationship based project team with good alignment on win / win outcomes.

Current projects which have adopted the contracted alliance model include ARTC's NSW Corridor Alliances, the Southern Region Water Pipeline, Gold Coast Desalination Plant, Coffs Harbour Infrastructure Program and Merrimac Water Treatment Plant.

Example 2 – target incentive contracts

Another popular hybrid which has been used for at least the last decade on various projects is a 'target incentive' model which combines:

- (a) 'hard' risk allocation and conventional contract administration; with
- (b) a compensation framework which is based on a cost reimbursement, fixed or percentage margin and cost and non-cost KPI incentives.

The use of KPI incentives is intended to sufficiently align the interests of the owner and the non-owner to produce a mutually beneficial project outcome. The model is commonly used for contract mining and for engineer procure construct (EPC) engagements.

However, overlaying an alliance compensation framework over a relatively conventional contract without providing for truly collaborative decision making can potentially produce misalignment between the parties and unhappy project outcomes.

Take, for example, the refurbishment of the Whyalla Steel Works. Onesteel (the owner) and United KG (the contractor) entered into a target estimate contract (936 pages in length!) which included a target incentive model based around an agreed target cost estimate of \$24M and a project timeframe of 65 days.

Over two years later, the parties were still at loggerheads in litigation, United having been paid \$46M but seeking a further \$28M. The parties could agree as to which costs are and are not recoverable by United under the terms of the contract and disagree over the level of auditable transparency of costs required under the contract.¹³

The Brisbane City Council has also embraced target incentive contracting. When serious trouble brewed during the construction of the Inner City Bypass, the commercial relationship between BCC and the contractor underwent structural and commercial changes (called the 'phase 2 relationship') which were intended to 'realign' commercial drivers and create 'one team'.¹⁴ The outcome was so successful, similar strategies have been adopted on subsequent council projects, the most notable of these being the Green Bridge from Dutton Park to St Lucia. The council has referred to this contracting strategy as its 'third generation' strategy.

Another public authority in Queensland which has embraced a target incentive based strategy is Powerlink. In 2006, it established three 'period agreements' with transmission line construction contractors. Each establishes a five year framework for the delivery of multiple projects under a target cost incentive compensation framework.

Under the period agreements, risk is allocated in line with a conventional AS4000 risk matrix, the role of the superintendent is retained, but the health of the relationship (and ultimately the control and direction of it) is monitored by an off-site leadership team, similar in many respects to an alliance leadership team.

The objective in each of these arrangements is to commercially align the owner and the non-owner participants and provide an appropriate framework for collaborative management (notwithstanding the absence of collective risk sharing).

They are all 'soft dollar' models, in the sense that the 'price' (the target cost estimate) is jointly developed, as a target not a lump sum, and the successful proponents for the projects are selected on non-cost criteria – the focus is on making sure from the outset that the right team is selected, not simply the best price.

Example 3 – early contractor involvement (ECI)

Later in this paper the development of the New Engineering Contract in the United Kingdom is examined. That contract has precipitated some activity in Australia (and in particular in Queensland) to develop a model which is specifically focused at engaging the ultimate construction contractor at a very early stage in the process to assist in the evolution of the design for the project. By doing so, the owner intends to optimise the value that can be added by the constructor to the design process and, secondly, reduces the risk of subsequent inconsistency, ambiguity and conflict between design and construction elements.

The most public example of an ECI model is the one finalised by Queensland Main Roads Department in 2005, although for at least the previous decade, the Queensland Department of Public Works has been using very similar principles in its 'managing Contractor' model for the delivery of major public buildings.

¹³ These disputes are the subject of an interim decision of the South Australian Supreme Court handed down in March 2006 and ongoing litigation at the date of this paper

¹⁴ David Stewart and Ros Herriman, Building Innovative Projects Through Relationship Contracting (a paper presented at a Brisbane conference in November 2005)

Both models involve:

- (a) the selection of a contractor on essentially non-cost criteria (although both models require tenderers to disclose profit and overhead margins);
- (b) following selection, the contractor assists with the design development and develops a contract price (in the public works model, this is a guaranteed maximum price (GMP) and in the Main Roads model it is a lump sum price);
- (c) provided the contract price is acceptable to the owner, stage 2 commences for the finalisation of design and the construction of the project.

KPI incentives are utilised (to varying degrees) under both models in an effort to provide appropriate commercial alignment drivers for the contractor. Both models also include a separate contract administrator (the principal's representative), but have joint leadership teams to monitor the health of the project and resolve issues.

Although these ECI models provide an appropriate framework for greater collaboration between owner, design and constructor during stage 1 (ie. before the contract price and design is fully developed), the interaction between the various parties during stage 2 has the potential to drift back to a much more conventional (and possibly adversarial) relationship, particularly under the Main Roads model where stage 2 is delivered along the lines of a conventional fixed price D&C contract.

The architects of the model will say that there are several reasons why this is unlikely to happen:

- (a) the role of the joint leadership team continues and should reinforce the desire for collaboration in management and leadership;
- (b) the use of a dispute resolution board (which provides 'real time' dispute resolution) will avoid issues building and festering as might otherwise occur in conventional contracting;
- (c) the KPI regime still operates to align the parties' commercial interests.

The first project to utilise the Main Roads ECI model is the Maroochy River Bridge and the outcomes on that project will almost certainly be the subject of intense scrutiny.

Another current example of the use of ECI principles is the upgrade of the Ross River Dam near Townsville. The owner of the dam, NQ Water, engaged three shortlisted proponents to assist with final design development, risk identification and allocation and significant supply arrangements. That process continued for three months, after which each of the three proponents submitted a priced bid to construct the project.

Although there is a Principal's Representative for contract administration, there is also an active joint management team and an off-site project leadership team to steer the governance and direction of the project, and resolve issues as they arise. There is also a dispute resolution board which visits the site each six weeks and interfaces with both the joint management team and project leadership team. There is also an extensive KPI regime for both cost and non-cost key result areas.

News from abroad

So what's happening overseas in the 'soft dollar' context?

The United Kingdom

Although FIDIC and JCT continue to dominate the British construction landscape, there are several new forms of contract that have emerged recently to reflect very similar thinking to the Australian industry.

The most notable of these is the New Engineering Contract, now in its third edition. NEC was the most public response to that aspect of Sir Michael Latham's seminar report 'Constructing the Team'¹⁵ which criticised the lack of relationship-based contracting in the UK.

The contract adopts many of the principles of alliancing, including collaborative risk management, joint governance and aligned pain / gain compensation model, but falls short of mandating shared risk allocation and 'no blame'.

NEC has its critics. One commentator has described it as '*a project procedures manual badged as a contract*'¹⁶. Others criticise the vagueness of the contract's language. But it is now widely used by a number of public authorities¹⁷ and some notable private owners, including Barclays Bank and BSKyB.

Another fascinating standard contract has recently been developed by the Built Environment Group – the BE Contract first published in 2003.

The contract is intended to be sufficiently flexible to use at all points in the supply chain – head contract, subcontract, supply only and consultancy.

There is a contractual commitment to the 'Overriding Principle':

'The Overriding Principle governing the Purchaser and the Supplier in the operation of the contract is that of collaboration: it is their intention to work together with each other and with all other Project Participants in a cooperative and collaborative manner in good faith ...'

Notably, disputes must be resolved by taking into account the Overriding Principle¹⁸.

One common feature of the BE contract and NEC is the use of a Risk Register. The register is prepared at the outset by both parties and endeavours to identify all possible project risks and pre-determine the management of each identified risk. The aim is to transparently align the parties on risk management and avoid a hiatus or adversarial response where risk eventuates.

The BE contract goes one step further. It records, for categories of risk, which party will be responsible for the risk and allows for the division of 'layers' of risk between parties. For example, the contractor might take all risk of weather up to 20 days, following which the parties will share the contractor's delay costs equally. The parties can, in effect, tailor their respective risk profiles by identifying and dealing with specific rather than general risk events.

United States

The evolution of contract strategies in the USA is surprisingly slower than either the UK or Australia, although there is similar evidence of repetitive suboptimal project outcomes for the past two decades.

Partnering seems to work better in the USA than it does in Australia, particularly in road construction where road authorities have long-standing relationships with contractors. Most of these projects still seem to be based on 'design then construct' rather than 'design and construct' project delivery models.

The most notable development in the States seems to be the emergence of the 'CM at Risk' model which is similar in philosophy to the 'Managing Contractor' models used by Queensland Public Works and the Federal Department of Defence. The model features the appointment of a construction manager (rather than a contractor) who subcontracts almost all project work and remains responsible to the owner for all subcontracted work. The compensation model is based on a pre-agreed target cost or occasionally a fixed price lump sum.

¹⁵ July 1994

¹⁶ See 'Building', 26 March 2004

¹⁷ Projects include Channel Tunnel Rail Link, Heathrow TS and National Health's Procure 21 Projects

¹⁸ Clause 1.7

One significant departure from most Australian GMP models is the absence of savings share between owner and contractor where actual costs are less than the GMP. Apparently this is thought to preserve trust between the owner and the contractor and ensure that the contractor is not tempted to cut corners.¹⁹

¹⁹ See 'CM at Risk' a paper available at www.3di.com

Where to from here ?

Most Australian States now have both a platform for, and a commitment to, delivering infrastructure projects through alliancing. We can expect a much larger proportion of time-critical, technically difficult projects to be delivered through alliances or hybrid alliances.

In particular, transport, water and energy projects will be big users of the project alliance model.

And the landscape for alliancing will continue to evolve. Here are a few of the likely developments in alliancing over the next two to three years.

More structure

With the exception of Victoria, no State has a comprehensive framework or set of guidelines for public sector alliancing.²⁰ As alliancing grows in importance, other States will develop uniform models and selection processes to facilitate the use of alliancing within government procurement policies.

More uniform and structured processes may drive down the cost of establishing alliances and also provide greater process consistency within governments and a greater level of confidence in that process within the industry. All of that is to be applauded.

However, it would be throwing the baby out with the bath water to 'straight jacket' the establishment of alliancing by imposing too many rigid rules and processes which minimise flexibility: part of the attraction of an alliance is the mutual development (and collective ownership) by all participants of a purpose-built model for the particular project. It gives all participants a sense of ownership in the project agreement.

It would also be a shame if the continued development of 'best practice' alliance establishment was stifled by too much red tape.

Standard forms

There is talk of an Australian Standard for an alliance contract. Certainly a number of government agencies that are frequent users of alliancing are moving to standardise their own agreements.²¹

Again, a 'one size fits all' strategy runs the risk of diluting the 'ownership' of the non-owners in shaping their own project-specific alliance strategy.

Flexible selection process

Many governmental agencies are experimenting with different selection processes in an effort to both reduce inefficient wastage of the resources of both the public and private sectors, and go some way to addressing the Value for Money scepticism described above.

There is still very divided opinion over the wisdom of 'competitive TOC' processes.²² Apart from its impact on future alliance behaviours, a competitive TOC process requires two fully staffed alliance teams to simultaneously develop design and pricing proposals, one of which will be ultimately discarded.

One compromise recently adopted on a Queensland Water project has been to shorten the competitive process to a six week period to enable the owner's team to assess each of the two short-listed teams in a 'real project' environment, but without unreasonably draining the resources of either of the bidders.

²⁰ Some departments have developed procurement policies for alliances, but they are relatively ad hoc.

²¹ For example, Queensland Main Roads

²² See footnote 10)

Program alliances

The use of alliance delivery lends itself to longer term delivery of infrastructure projects within capital works programs.

The recently established Trackstar Alliance is a good example of Queensland Rail using a selected consortium to deliver a series of substantial projects within a 'program' alliance framework which includes:

- (a) the owner referring projects to the alliance for feasibility and definition;
- (b) the alliance preparing a target price and program for the referred project;
- (c) if the targets are acceptable to the owner, the project is delivered under a pre-agreed project alliance template by a specifically selected project team.

The benefits to the owner include avoiding 'reinventing wheels' for each project and building and maintaining a team for the life of the program.

Apart from rail, program alliances will be suitable for water, road and pipeline capital works programs which will be rolled out over a number of years.

'Broader church'

Alliancing is likely to appeal to the sponsors of soft infrastructure looking for flexibility and collaborative project development. A good example is Queensland Health's decision to establish a Program Alliance Agreement to support its eHealth Strategy. A recent industry briefing paper sets out what QH sees as the benefit to be gained by embracing alliancing:

*'The alliance formed by QH and the selected alliance partner would, through an alliance board and management team, jointly manage and oversee the work of an extended team of product suppliers and integrators across multiple individual programs under the overall program.'*²³

Broadband and other telecommunications infrastructure presents similar opportunities. The urgent need for a coordinated strategy for the roll out of the next generation of IT infrastructure provides a compelling case for a collaborative delivery model which utilises alliance principles and processes.

Blending Alliancing with PPPs

If governments can harness the benefits of alliance contracting within the framework of a private sector financed model, there is an opportunity to significantly increase the attraction of that model.

That will only occur if a more relaxed and pragmatic view is taken by the public sector of risk transfer. Although there has been some movement in this regard on recent PPP projects, the starting point for most PPP Project Deeds still seems to be that the proponent assumes practically every project risk.

One inevitable consequence of that risk profile is that project pricing by proponents is based on significant allowances for a variety of risks, some of which may eventuate, but many of which will not. When risks do not materialise there is a 'windfall' gain to the proponent.

The second difficulty with full risk transfer in a PPP is that some risks – particularly those which have a low probability but a high consequence – are intrinsically difficult, even for experienced contractors, to price

A good example of a project where it was simply not practical for the government to fully transfer all construction and operating risk to the private operator was the London Underground PPP. Because it was impossible for any of the parties to be certain of the state of repair of much of the current underground rail system (which was to be refurbished as part of the project), the final transaction included a significant

²³ ICT Industry Briefing Paper, 28 May 2007

allocation of elements of project risk to government and the shareholders and mezzanine funders within the private consortium.²⁴

With a bit of structural 'tinkering', it should be possible for governments to secure private finance for infrastructure projects delivered through an alliance framework which integrally involves the project delivery arms of the relevant government departments. A model with those features could potentially deliver the advantages of both PPPs and alliancing in a very cost-effective and transparent way.

A large part of that challenge will be getting the financiers much more comfortable with the alliance process and more confident in its capacity to consistently deliver good outcomes. However, the track record of alliance projects now has the critical mass to demonstrate that this is the case.

²⁴ A good explanation of this innovative, but very complicated, project delivery model can be found in an article by Robert Lonergan titled 'Banking Construction Risk in the London Underground Public Private Partnership: A Case Study in Applied Project Financing' (2004)