Pre-reading for

Infrastructure Delivery Alliance Forum

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Price competition in the alliance selection process

9 reasons why I favour the single DCT approach – a personal perspective

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The following acronyms are used in this paper:

ALT	Alliance Leadership Team	MCOS	Minium Conditions of Satisfaction
AMT	Alliance Management Team	NOP	Non-owner Participant
D&C	Design & Construct	RTA	Roads & Traffic Authority (NSW)
DCT	Direct Cost Target	TOC	Target Outturn Costs (same as DCT)
IPAA	Interim Project Alliance Agreement	VFM	Value for money

1 INTRODUCTION

1.1 Project Alliancing in Australia

Modern-day "project alliancing" as practiced in Australia has its origins in the innovative procurement model used to successfully deliver several oil and gas projects in the North Sea in the early 1990's (Thompson, 1997 and Knott, 1999). In the late 1990's Sydney Water pioneered the use of project alliancing for public sector infrastructure with the Northside Storage Tunnel Project (Henderson & Cuttler, 1999) including an innovative selection process where design and construction partners were selected on the basis of capability and attitude without any direct competition on price.

In the 10 years since Northside Storage Tunnel the use of alliancing to deliver public sector projects in Australia has grown exponentially[1] - with Australia (and New Zealand) leading the world in the widespread application of this innovative form of contracting. Given the breath and depth of its use, project alliancing should no longer be viewed as a radical or new form of procurement in Australia – it is now established as one of the mainstream forms of procurement available to owners for delivery of complex projects.

More information on project alliancing and its origins is available from the Alliancing Association of Australia (www.alliancingassociation.org)

1.2 Pure versus price competitive selection processes

Most of the early public sector alliances in Australia were established using a process whereby the non-owner participants ("NOPs") were selected on the basis of experience, capability and attitude but without regard to price. This process, variously referred to as the "Pure Alliance" or "single Direct Cost Target[2] (DCT)" selection process is illustrated in Figure 1 below:

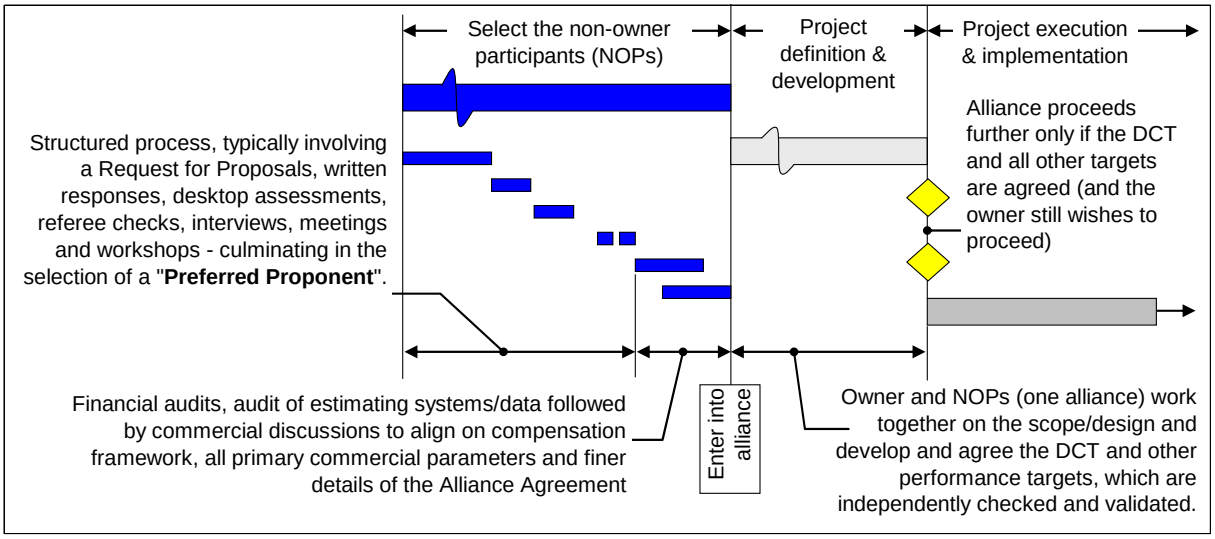

Figure 1 - Pure Alliance selection process

Under the single DCT approach the owner and NOPs, having formed their alliance, work together (during the Project Definition/Development Phase) on the scope/design and develop and agree the Direct Cost Target (DCT) for the project. The DCT is checked by an independent expert (usually referred to as the "Independent Estimator") and benchmarked against current market rates to validate that the DCT represents value for money (VFM) for the owner.

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[1] It is estimated that spending on public-sector project alliances in 2008 (local, state and commonwealth government projects combined) in Australia will be well in excess of $10 billion.

[2] The term Target Outturn Cost (TOC) is also widely used and the term DCT as used in this paper has the same meaning as the term TOC.

Although early alliances were generally seen to have been very successful some people remained concerned that underruns against the DCT were being achieved as a result of a "soft" DCT rather than because of superior performance by the alliance. Cowan and Davis (undated, pp. 4-5) questioned whether a "*genuinely challenging or commercially competitive*" DCT could be achieved on public sector projects (using the pure alliance selection process) where there is little doubt that the project will proceed and therefore little incentive for the NOPs to keep the DCT competitive. The "Price Competitive" or "multiple DCT" approach illustrated in Figure 1 below was developed to address these concerns.

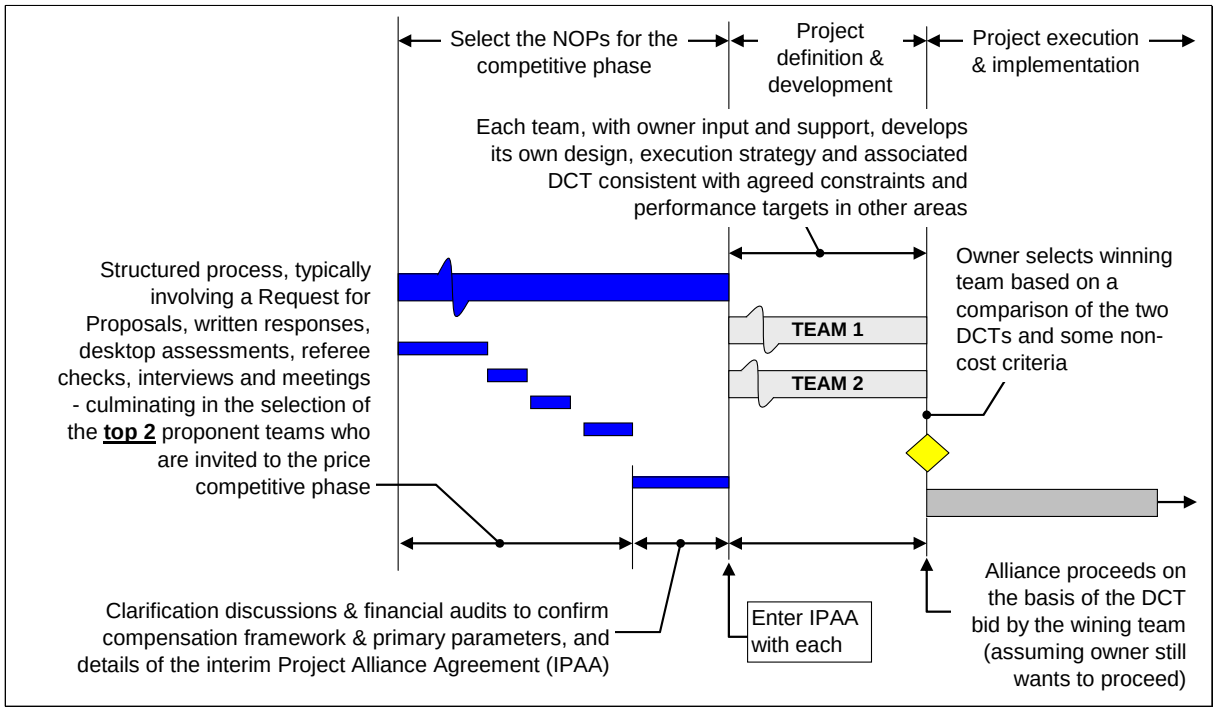

Figure 2 - Price Competitive selection process

Under the multiple DCT, two independent interim alliance teams are selected in the first instance on the basis of experience, capability and attitude with little or no regard to price. Each of these teams, with owner input and support, develops its own design, execution strategy and associated DCT. The owner selects the winning team based on a comparison of the two DCTs (along with some non-cost criteria) and the alliance proceeds on the basis of the DCT bid by the winning team.

While the single DCT selection process remains the dominant method used on public sector project alliances the multiple DCT approach has been used by numerous government agencies including WA Water Corporation (various projects), Main Roads WA (Perth to Bunbury), the RTA in NSW (Windsor Road), Queensland Main Roads (Tugun Bypass), Gold Coast Water (various projects), Sydney Water (various projects and programs) and many others.

For some years there has been an on-going debate about the pros and cons of each approach, with several articles for/against price competition. The Victorian Government's Project Alliancing Practitioners' Guide (2006, pp. 15-16 and Appendices 3 and 4 pp. 99-101) is based on a preference for the single DCT approach but presents some arguments in favour of both approaches and suggestions on how to address the key risks associated with the use of the multiple DCT approach.

1.3 Scope, context and limitations of this briefing paper

The debate (on single versus multiple DCT approach) rages on because the underlying issues are complex and the choice between the two methods is not a simple or easy one. A full appreciation of the implications of using the single versus the multiple DCT approach requires a deep understanding of what drives individual behaviours within an alliance delivery framework. In this respect even those who have been directly involved in project delivery for many years often have widely differing opinions (on peoples' motivators and drivers) based on their different views of the world and how it works.

I am therefore particularly enthusiastic about Main Roads WA's "*Infrastructure Delivery Alliance Forum*" initiative in Perth on Wednesday 09 April 2008, because it is the first attempt (that I am aware of) to facilitate deliberative dialogue on this matter across a wide cross section of affected stakeholders. The forum, amongst other purposes, has been designed to "*… enable participants to explore the assumptions, reason for use, risks and merits of each approach, and when each might most appropriately be applied…*" and to "*….collate all views and produce a forum communiqué*".

I have been openly critical of the multiple DCT approach since it first appeared in the early 2000s. I believe I understand and appreciate many of the reasons why owners choose (or are compelled) to use the multiple DCT approach but in my view (based on my current insights and perspectives) there are few situations where the multiple DCT approach will deliver a better value outcome for the owner than the single DCT approach.

This paper sets out (in section 4 below) nine reasons, based on my current perspective, why I favour the single DCT approach. To enable the reader to put my views into perspective I have summarised (in section 3 below) the experiences I have had that have been pivotal in forming my current perspective.

There are many other layers and complex issues associated with the choice between the single and multiple DCT approaches that are beyond the scope of this paper - I have identified some of these issues in section 2 but have not attempted to deal with them.

Note that this briefing paper only addresses the single versus multiple DCT issue in the context of a single capital project. While many of the same issues, insights and perspectives can be applied to other forms of owner-NOP alliance contracts - eg. multi-project (program) alliances, asset management and maintenance, facilities management, long-term contracts (such as mining) - each of these other types of alliance has particular issues which would need to be addressed specifically.

1.4 Other perspectives and pre-reading

I encourage you to read on – whether you agree with my perspective or not you will be better prepared to participate actively in the forum. I realise that my own views represent just one perspective and I look forward to developing new insights and perspectives as a result of participating in the forum.

Viewed from a different perspective valid arguments can be presented in favour of using the multiple DCT approach. For this reason I encourage you to seek out and consider a variety of views prior to attending the forum – for instance Cowan and Davis (undated) and Trueman (2004) present a contra view which favours the multiple DCT approach, while Henneveld (2006), Hutchinson (2004), Ross (2003, pp. 19-20) and Victorian Government (2006) generally support the single DCT approach.

2 ASSOCIATED QUESTIONS AND ISSUES

Although it is beyond the scope of this briefing paper to address the following questions/issues, it is important to be aware of these questions/issues when considering the pros and cons of the single DCT and multiple DCT approaches.

a) Several (single DCT) projects have encountered serious problems/tension where the preliminary estimate is way above the expected amount based on the owner's internal budget. This raises a number of questions/possibilities – eg.:

- Are (single DCT) alliances being used as a scapegoat for poor planning and budgeting by owners?
- Are the owner budgets sufficiently robust? Are owners being pressurised into making statements about project costs without any sound basis for those projections?
- Should government budgeting and approval processes be modified to take advantage of the way project budgets are developed under an alliance? For instance, agencies could develop the business case to the point where it makes sense to invest in setting up an alliance to prepare a detailed project proposal including committed DCT, and then make approval to execute subject to the owner being satisfied in all respects with this project proposal. This would link the commitments made at each stage of the process to the level of uncertainty at the time, enabling politicians and other key stakeholders to reliably and consistently deliver on the promises they make.
- To what extent are these higher-than-expected estimates the result of "gold-plating" which arises because there is not a rigorous value management process to balance the aspirations of owner personnel (within the alliance) with the available budget.

b) Because they have mostly been formed without direct price competition, alliances have attracted a great deal of scrutiny. Is the standard of accountability higher for alliancing than it is for projects procured on the basis of price using non-alliance methods, where the outturn cost is sometimes well above the price upon which the job was won? Perhaps the level of accountability is higher for alliancing. Perhaps alliancing calls for a much higher standard of accountability where leaders have to stand behind and explain their decisions without being able to hide behind the comfortable protection of "market competition".

c) Having a clear understanding of the distinction between the act/objective of "ensuring VFM" and the act/objective of "demonstrating VFM". This is dealt with in some detail by Hutchinson (2004).

d) What is the track record of alliances – specifically:

- How do actual costs compare with the DCT? Anecdotal evidence suggests that while there have been a handful of alliances with either underruns or overruns in excess of 15%, DCTs have in general proven to be a very reliable forecast of the eventual outturn cost, notwithstanding that many of these projects have overcome significant adversity (without any variation to the DCT). Is the pattern in this respect different between alliances that used the single DCT and the multiple DCT approach?
- What about the track record in respect of non-cost key result areas? Is there a significant difference in performance between those projects that were set up using the single DCT approach compared to those that used the multiple DCT approach?

I am hopeful that statistically valid data on these questions may eventually become available via the Alliancing Association of Australasia.

e) What if senior personnel within an agency who firmly believe that the single DCT approach will deliver superior value for money are told that they must select on the basis of price to comply with certain corporate or political requirements? Should they just accept and operate within those requirements without question or should they seek, where appropriate, to make the people who are imposing the requirement more aware of the harmful consequences of the requirement?

3 BASIS OF CURRENT PERSPECTIVE

My current perspective is shaped predominantly by the following background/experiences:

Period	Experience	Key insight / resulting perspective (at the time)
1980-1993	Worked for a number of contractors in various engineering and management roles (project manager, state management and general manager) involved in the delivery of "hard money" civil infrastructure and building projects.	I formed the view that extraordinary amounts of energy were being wasted on non-value-adding activities (what I used to call the "black hole of adversarial behaviour") and that this was almost entirely the result of misalignment on commercial interests between owner and contractor.
1993-1997	I worked as a "claims consultant" helping contractors and subcontractors prepare claims, and owners to defend against claims, related to disputes and variations in the construction industry.	I concluded that contractors were doing themselves great harm (in terms of their reputation and long-term relationships) by aggressively pursuing claims for much more than their true entitlement, even though in many cases they felt this was the only way to achieve a fair outcome. Further confirmation in my mind that adversarial behaviours reflected the way contracts were structured and awarded rather than the underlying values or trustworthiness (or lack thereof) of the protagonists.
1997-2005	Specialised in the development of alliance principles and practice and the establishment of project alliances. Principal adviser and facilitator for the establishment of dozens of alliances, nearly all of which were set up using the single DCT selection approach. Facilitated the establishment of some alliances using the multiple DCT approach. Conducted performance reviews and assessments of several alliances.	Concluded that the alliance framework (legal and commercial) and the manner in which the various conversations are held during the selection process are each critical ingredients in forming the "DNA" of the eventual alliance. Only a few alliance teams seemed to be operating at close to what I imagined their full potential to be – even where commercial interests were substantially aligned. While I still considered that aligning the commercial interests of the participants was critical to create the conditions for success, I came to believe that this in itself was not enough to ensure peak performance. I concluded that the key to unlocking the full potential of project teams lay in the complex array of "unseen" human drivers – thoughts, feelings, mental models, beliefs and assumptions, individual needs and yearnings, sense of identity and purpose. In summary I formed the view that: • If project leaders focus on structure/framework alone but ignore the human dimension, they create the right commercial environment but fail to exploit it, leading to sub-optimal outcomes. • By contrast, if they try to focus on leadership without an enabling/aligned framework, contractual obstacles tend to prevent the team from operating near its full potential. • The full potential of the team can only be mobilised by a strategy that effectively combines both – a balance of yin and yang.
2005-2008	Specialising on developing and sustaining high performance teams within alliance environments – helping individuals, teams and organisations to realise their full potential.	Still learning, looking to develop new insights and perspectives…

4 NINE REASONS WHY I FAVOUR THE SINGLE DCT APPROACH

The reasons set out below for using the single DCT approach are subject to the following acknowledgements /caveats:

a) There are some situations where it would not be logical to use the single DCT approach – for instance, where the owner must make a choice between competing proprietary technologies/solutions and the choice of technology could have a substantial impact on the capital and/or operating cost of the facility (eg. in a water treatment facility).

b) The single DCT approach must be set up and managed properly. In the past not enough was done, particularly in earlier alliances, to both ensure VFM and to demonstrate VFM to those external to the alliance. For the past few years people have been paying far more attention to addressing VFM concerns, as reflected in Appendix 5 of the *Project Alliancing Practitioners' Guide* (Victorian Government, pp. 39-46). However more can be done and some owners (Melbourne Water, 2008; Transport Infrastructure Development Corporation 2008, Queensland Main Roads 2008) are introducing further VFM initiatives that go beyond those recommended in the *Project Alliancing Practitioners' Guide.*

4.1 Multiple DCT weakens the foundation of an alliance

The introduction of price competition into the selection process fundamentally alters the foundation and nature of the relationship, limiting possibilities and the potential of the eventual alliance. Under the single DCT approach (when managed properly):

a) The relationship is established on the premise that each party can be trusted, but with appropriate checks and balances in place so that the relationship is not based on "blind trust" – eg. use of independent financial auditors and estimators, 100% open book with rigorous benchmarking, owner's people embedded within the estimating team, etc.

b) The development of the DCT is anchored in clear guiding principles that have been discussed and agreed in advance. The following are typical examples of such principles:

- Complete openness and transparency (with full access to both tender and outturn data from the NOPs' previous projects, both alliance and hard money contracts).
- DCT to be a fair estimate of what it is likely to cost to deliver the project in line with best industry practices, taking into account all information available at the time.
- The estimate must be based on execution strategies consistent with the achievement of the minimum conditions of satisfaction (MCOS) targets in non-cost key result areas. The estimate must not include provisions for initiatives that are designed to deliver better-than-MCOS outcomes.
- The DCT should be selected as the point that matches a confidence level of 50% (i.e. the so-called "P50" point) along the cost outturn probability distribution curve (applies where Monte Carlo analysis is used in the compilation of the estimate).
- Where the alliance delivers MCOS outcomes the margin return to each NOP (corporate overhead and profit) should be consistent with the historical norms for that NOP, adjusted (usually discounted) to take account of unique factors that justify a level of return that is different from historical norms.

c) Before starting to develop the DCT all members of the Alliance Leadership Team (ALT) make a commitment to be 100% aligned on the DCT by the end of the Project Definition/Development Phase. This commitment, if genuinely given, forces the ALT members to deal openly and constructively with the tensions that arise when preliminary estimates from the alliance are higher than the owner thinks they should be – and for genuine alignment to occur each must understand the opposing perspective and the group must develop a shared perspective that is supported by all. Otherwise there is no alignment, or at best there is only begrudging agreement.

d) The NOPs are at least as concerned about their reputation and long-term relationship with the owner as they are about the returns they make on a specific project. It is not in an NOP's long-term interest to make a high return on a project but have the owner believing (whether justified or not) that the high return was the undeserved result of a soft DCT rather than genuinely earned through superior performance. Because all expenditure is fully open book, by the end of the project the owner people inside or involved with the alliance will have formed a view one way or another. For most NOPs this provides a powerful motivation that neutralises any inclination to inflate the DCT to secure a short-term gain. The conversations that occur during the selection process should enable the evaluation team to assess how big a factor this will be for each proponent organisation and to take this into account in the final selection.

e) Because the DCT alignment process is consensual based on pre-agreed principles it creates a very different kind of bargain to what is created when the "lowest bid wins". It is a bargain based on mutual trust, personal promises and expectations within a business context where it is critical for the NOP's long-term interest that those promises are honoured, and seen to be honoured.

f) The emerging/prevailing culture tends to be aligned with the personal values of the individual team members (eg. integrity, openness, respect, commitment, accountability, professionalism, etc.) giving rise to an almost unstoppable momentum to "do the right thing" in the setting of the DCT[3].

The introduction of price competition into the selection process (in the multiple DCT approach) alters the fundamental nature of the bargain and changes the very "DNA" of the eventual alliance. For example:

a) While the DCT may be "sharper" it is not underpinned by the same level of NOP commitment or sense of ownership. The NOPs may understate certain risks in the build up of the DCT in order to win the job but be less than totally open about this at the time. This will have ramifications during execution when/if the alliance encounters problems which the NOPs feel were not fully or properly considered during the development of the DCT.

b) The use of price competition circumvents the need for the ALT members to have the really tough conversations about the DCT that are unavoidable when using the single DCT approach. While this might at first appear to be a good thing it actually robs the alliance of the opportunity to test/develop powerful relationships before proceeding into the execution phase. For this reason alone alliance teams that have been through the wringer of aligning on the DCT (under the single DCT approach) are likely to be much better equipped to be effective alliance partners than those who have been through the multiple DCT approach.

c) The focus of the competing teams (during the project definition phase) is shifted away from developing a high performance team focussed on meeting/exceeding the owner's objectives in line with a compelling and inspirational vision to a more traditional D&C bid approach looking for ways to win the job. At best the development of a high performance team is put on hold and can only begin in earnest after the execution phase is underway – thereby missing out that crucial formative period when both the opportunity and the need for transformational change are greatest.

It is difficult to assess the full extent of the consequences of the introduction of price competition into the selection process. At best perhaps the impact might only be temporary – the development of a high performance culture is postponed until the execution phase and the longer term impact is minimal. However I believe the consequences in most cases are likely to be more far-reaching and will manifest themselves in both obvious and subtle ways. There is a price to pay for using direct price competition to drive the DCT down – "you reap what you sow".

I believe that this weakening of the foundation of the alliance is sufficient on its own to raise serious questions (in most cases) about the use of the multiple DCT approach, even without considering the eight other points set out below.

[3] This is not always the case with single DCT teams - it requires effective leadership from the ALT, the Alliance Manager and other senior project leaders to create the kind of environment that allows this type of culture to develop.

4.2 The investment in a second DCT doesn't stack up

In most (but not all) instances of the multiple DCT approach (of which I am aware) the owner pays each of the two competing proponents for the Project Definition/Development Phase – consistent with what I perceive to be a genuine commitment from these owners to fairly compensate the NOPs. Typically (and logically) a fixed amount is paid to each team, which is intended to provide reasonable compensation to the proponents for the effort and resources they commit to the process. However it may be difficult for the owner to justify this investment – for instance consider a hypothetical example, as illustrated in Figure 3 below of a notional project where the "right" DCT is $100m (excluding the cost of the Project Definition/Development Phase) and where we make the following assumptions:

a) The competitive tension under the multiple DCT approach (column B) results in a DCT of $100m.

b) In the absence of direct price competitive under the single DCT approach (column C) the agreed DCT ends up at $108m – ie. a total of $8m "fat" has crept into the estimate compared to the sharper 2 x DCT approach.

c) The alliance teams in terms of project execution are identical and deliver the project for $100m (row 3).

	A	B	C
1	**Item**	**2 x DCT**	**1 x DCT**
2	DCT (excluding PDP costs)	100	108
3	Actual costs as incurred	100	100
4	Underrun (row 2 - row 3)	-	8
5	Gainshare paid to NOPs (50:50 sharing)	-	4
6	Nett cost to owner (row 3 + row 5)	100	104
7	Cost to owner of developing DCT(s)	8	4
8	Total cost to owner (row 6 + row 7)	**108**	**108**

Figure 3 - Owner investment in 2 x DCT

d) Underruns are shared 50:50 between owner and the NOPs (typical).

e) The Project Definition/Development Phase costs $4m in the single DCT approach and for the multiple DCT approach the owner pays each competing team $4m for participating in the Project Definition/Development Phase (row 7). [My experience is that the actual cost of the Project Definition/Development Phase (using single DCT) for infrastructures projects under $500m is in the range of ~4% to 7% of the DCT.]

As illustrated in Figure 3 above (row 8) the overall cost to the owner ($108m) is identical for both approaches.

Figure 4 below shows the make-up of the DCT for an actual ~$100m civil infrastructure project (which used a single DCT approach). In this case 47% of the DCT (rows 2 and 3) was market tested, with another 11.3% for the NOP margin (row 8) leaving only ~42% of the DCT in which to "hide the fat".

	A	B	C
1	**Item**	**% of total**	**Comment**
2	Supply and delivery of materials	35.0%	market tested
3	External plant hire & sub-contractors	12.0%	market tested
4	Design costs	4.2%	in-house
5	Risk & opportunity provisions/contingencies	4.8%	modelled with @RISK
6	Direct labour / plant	13.9%	1st principles
7	Site overheads	18.8%	internal
8	Margin for MCOS (corporate overhead and profit)	11.3%	audited/agreed figures
9	Total DCT	100.0%	

Figure 4 - Market-tested elements within DCT

If you assume a similar make-up of the DCT in the hypothetical example in Figure 3 above, the introduction of price competition into the selection process would have to drive out $8m of "fat" from ~$45m just to bring the owner back to a break-even position. Compared to a fully open single DCT approach with owner personnel embedded within the estimate team and rigorous benchmarking by an independent estimator it is unlikely that the use of price competition could drive out anything like this level of savings without understating the costs/risks associated with the work.

4.3 Opportunity to challenge standards

While the introduction of cost competition/tension may "sharpen the pencil", especially in areas that are difficult to benchmark such as the provisions for risk, the nature of the multiple DCT process precludes the kind of intimate collaboration/integration that is a feature of the single DCT approach and thereby limits the opportunities to identify and drive innovation that challenges the owner's pre-existing views and standards. Sometimes much greater savings are achieved by doing things differently, rather than trying to find the cheapest way to do what has always been done before. Under the multiple DCT approach where the level of collaboration and communication with the owner must be strictly controlled to ensure the process is fair to both proponents the opportunities to challenge entrenched thinking and standards are much more limited than under the single DCT approach where there is no such constraint.

4.4 Multiple DCT may lead to understating of risks

Notwithstanding joint risk/opportunity workshops that may be conducted with the aim of securing consistency between the competing teams the competitive element may drive the competing teams to underplay the possibility and/or consequence of risks. This could give rise to potentially harmful consequences where the resulting DCT does not contain adequate contingency – for instance:

a) The owner's decision to proceed may be based on an unrealistically low estimate of the outturn cost and (in hindsight) may be seen to have been the wrong decision. An owner is generally best served by having the most accurate/genuine possible estimate of the outturn when it makes the decision to proceed to execution.

b) Lack of joint ownership of the DCT with NOPs more inclined to seek variations to the DCT to get back to what they see as a reasonable position.

c) Increased focus on commercial agendas/positions with a reduced sense of "one team".

4.5 Unfairness in the multiple DCT process

Under the multiple DCT process it may be difficult to make a fair comparison between the two DCTs. Specifically:

a) There may be a lack of clarity, consistency, ownership of and commitment to the DCT where the opportunity for full and open conversations based on principles is limited by the need to maintain separation of the two competing proponent teams.

b) The comparison of the two DCTs may no longer be an "apples versus apples" comparison with the owner having to make its own overarching judgements about the two estimates and the validity/accuracy of the assumptions and estimates upon which they are based.

4.6 Multiple DCT process is more demanding, and less valuable, for the owner

The multiple DCT process requires very careful management of communication and the flow of information, requiring significant additional resources and input from the owner over an extended period. In this respect:

a) The owner needs more resources to manage the process and provide support to two separate interim alliance teams.

b) The role of the probity adviser/auditor is much greater and extended over a much longer period.

c) Although the need for an independent estimator might appear to be removed, in practice the owner typically still needs to use an independent estimator to help the owner make informed interpretations and judgements based on two DCTs that may be based on significantly different risks and assumptions.

d) The environment is less stimulating for the owner personnel involved with the two teams compared to working with a single DCT team. In some cases the experience may serve to reinforce pre-existing prejudices (about NOP personnel and what motivates them) and the opportunity to see the world through "new eyes", so often reported under the single DCT approach, is lost.

4.7 Liaison with key stakeholders

Where there are complex stakeholder issues (as is often the case for public infrastructure projects) it may unduly complicate matters to have two separate competing teams interfacing with stakeholders through the project definition/development phase. This may be overcome by having all such stakeholder interface managed through the owner but this "lowest common denominator" approach limits the creativity and potential of both the competing teams.

4.8 Competition is no guarantee of lower cost in current market

The use of price competition in a booming market which is experiencing a critical shortage of key resources is no assurance of a low price. My experience is that some private sector owners are turning to alliancing (using the single DCT approach) because they feel it is the best way in the current market to secure a commitment of the resources needed to deliver their project(s), and a bid cost that is not inflated.

4.9 The multiple DCT is a waste of critical resources

To achieve the full benefits of the multiple DCT approach both teams need to consist of the best available resources from the respective NOP organisations, with each team and the overall process supported by owner resources. This means that two complete sets of quality personnel are dedicated to the project for an extended period of time, although only one set will continue through to deliver the project.

At a time where Australia is critically short of experienced design and construction resources it makes no sense to tie up extra teams of best-in-class resources (regardless of who appears to be paying for those resources) in what is essentially a redundant exercise designed to "demonstrate" value for money without actually doing anything to ensure value for money.

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