Target Outturn Cost: Demonstrating and Ensuring Value for Money

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GAMEBREAKING TRANSFORMATION

1. The Target Outturn Cost

The Target Outturn Cost (TOC) is arguably the most critical component of establishing a project alliance. It represents an agreement of the contractual cost of achieving the agreed level of performance of the Works under the Alliance Agreement ('the Works'). Not only does it represent specifically *agreed* aspects of the project, but also a raft of *assumptions* both documented and non-documented.

Since a project alliance is broadly a performance based contract as opposed to a specifically defined scope of work, aligning on the TOC is a process that demands active participation by all parties, and most notably the constructors and owner.

The TOC phase of a project alliance is the opportunity to incorporate significant innovation and refinement to the project definition by proactive and joint optimisation of the diverse perspectives of designers, constructors and operators. It is the phase when maximum change can be achieved with minimum cost of change (albeit recognising resource or planning constraints). And it is the phase where the synergy between having the designers, constructors, operators and owner is proven to meet or not meet expectations.

Given the commercial nature of a project alliance, and how it differs from a tendered cost bidding process, it is the area that comes under most external and political scrutiny and is the area that opponents most frequently use to argue against project alliances.

Notwithstanding this, it is the TOC and tension it creates in having all participants ***sharing all risks*** that generates the paradigm shift and behavioural shifts that deliver the breakthroughs and innovations that would not have otherwise occurred. Most notably the opportunities arising from the designer and owner working proactively and constructively with the constructor to reduce construction costs. This is less likely to occur in other silo type contractual approaches.

This paper provides a strategic level approach to developing the TOC. It is not a prescriptive plan nor procedure. Rather it provides the core steps and objectives of each of those steps that need to be planned and scoped in more detail to match the specific project and team requirements and nuances.

The key purpose of the strategy below is to provide a sound methodical basis for an owner to <u>ensure</u> for themselves that the TOC is genuinely the right price for the right project to deliver the business case and performance requirements of the project <u>and</u> to <u>demonstrate</u> that the TOC represents genuine <u>value for money</u>.

The strategy in the paper is applicable to project alliances where there is a proven concept or feasibility design and supporting business case. This process would need to be adapted for a project alliance where the alliance team is formed to generate and develop possible options and solutions, as was the case on the Wivenhoe Dam Alliance and, recently the Lawrence Hargrave Drive Alliance for the NSW Roads and Traffic Authority.

2. Defining and Demonstrating Value for Money

It is worth taking a step back to remind ourselves of the reason the project alliance delivery approach is adopted.

In other delivery approaches, the focus is on *lump sum starting price* and not on *outturn cost*. ***The only certainty with regard to a lump sum price is that the project will not be delivered for less.*** Market pressures dominate the bidding process. Once awarded, the contractor will seek opportunities to maximise profit and minimise risk during delivery. Should the contractor be able to reduce their costs, then there will be less pressure to increase the *price* to the client. Where this is not the case, and their costs escalate, for whatever reason, then the contractor has to protect its commercial interests and exploit opportunities to increase the price and maximise its return. Nothing sinister, this is simply sound commercial practice.

In a project alliance, the owner chooses to join forces with companies and people whom they trust will create the greatest opportunity to jointly determine the outturn cost with the greatest confidence for efficiently delivering the Works. ***It is not a starting price, it is an outturn cost estimate.*** Where that trust does not exist, or the owner does not believe it will exist with the selected team, then the owner should not adopt an alliance approach. A project alliance is a relationship contract. Their success and ability to deliver value for money will depend on relationships; on the owner's and other participants ability to build and honour those relationships.

There is a natural and ***appropriate tension*** in determining and aligning on the TOC:

- The commercial participants want to ensure that the contingency and risk factors are reasonable; that the scope of the TOC covers the performance criteria; and that there is genuine opportunity to reduce the actual cost compared with the TOC.
- The owner wants to ensure that they have the lowest *reasonable* cost whilst ensuring appropriate quality, durability and operability with appropriate and measurable risk contingency allowances.

It is not in anyone's interest to have commercial pressures that drive inappropriate behaviours during the TOC phase, such as:

- making risky decisions in operability and quality and/ or making unreasonably low contingency or risk allowances in order to reduce the overall TOC; or
- making unreasonably high contingency or risk allowances to ensure enough "fat".

In both cases behaviours and actions could be detrimental to the final result. If the TOC is *too low*, there will be significant pressure to cut corners and compromise quality. If the TOC is *too high* the project may not go ahead, the client and any project opponents will be quick to rally around accusations of it being a "fat" estimate and, if windfall profits are achieved from *normal* performance (as opposed to *gamebreaking* performance), relationships are likely to breakdown, reputations will be damaged and the project will come under significant political pressure (small *p* and big *P*).

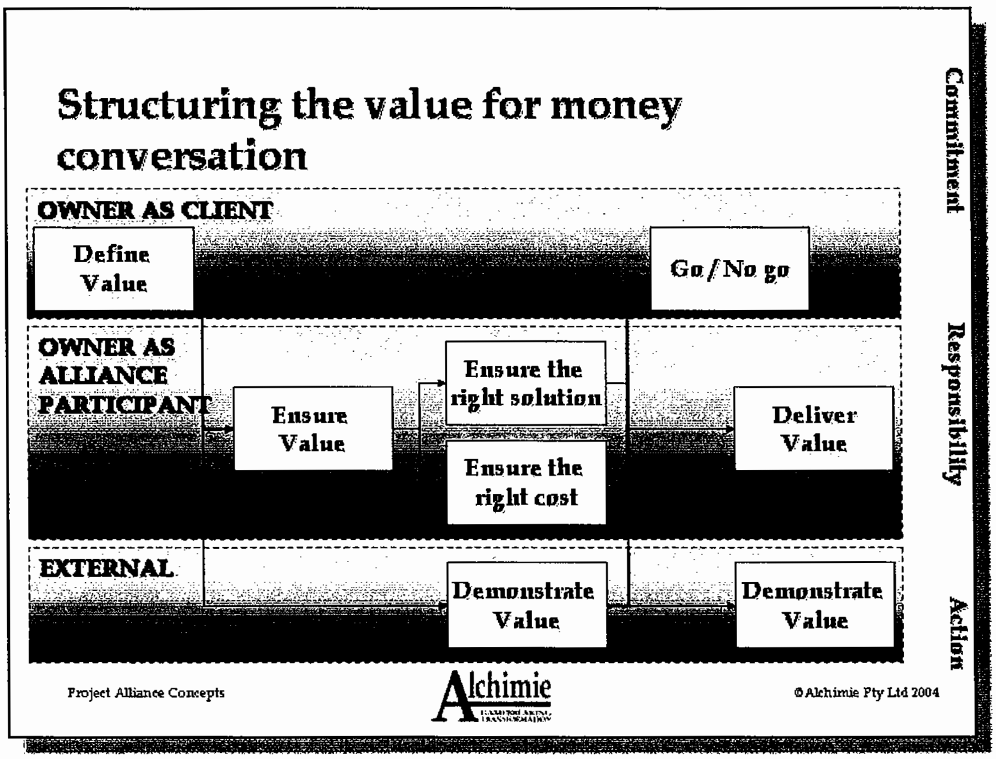
The core purpose of adopting the project alliance delivery approach is to create ***aligned commercial drivers*** so that all participants proactively pursue the same goals as the client –

most notably reducing capital cost. To generate proactive pursuit, the goal must be ***believable, possible and achievable*** in the eyes of the participants. Where the TOC is too low, the alliance may take on a risk and contingency management approach rather than a proactive and innovative cost reduction approach.

All this puts pressure on the client to be "reasonable" and on the commercial particiants to not be conservative. And herein lies the greatest challenge. ***At the heart of the TOC process is a raft of subjective decisions.*** Are they best placed with the operators, the independent estimator or the alliance team? How do you draw the line on what is reasonable, and what is not reasonable? And, more pointedly, what does "Value for Money" mean for the owner in the circumstances of a specific project?

The owner will have determined a business case for the project. Typically this will be made up of a ***multiple criteria assessment*** and/or ***net present value model.*** This assessment or model is ultimately the determining factor as to whether the revised costing and timing of the project is a viable investment. ***This model should be used as the basis for defining what value means to the owner.***

We recommend that the owner distinguishes *DEMONSTRATING* value for money from *ENSURING* value for money. In that past, not enough attention has been placed on demonstrating value for money to those on the outside of the alliance, stakeholders and other interested parties. It is incumbent on all members of the alliance to support the effort to demonstrate value for money to the outside world, even though it may seem obvious on the inside.



3. Two Decisions

We strongly recommend a ***two decision process*** for the owner in determining whether the Project and the TOC represents good Value for Money:

1. Reaching alignment on the TOC, i.e. determining whether the TOC represents the ***right*** cost for the ***right*** project; then

2. Determine whether the TOC meets the business case for the project to deliver a viable and worthwhile investment

The key benefit of this two decision process is to separate the dual role of "owner as a member of alliance", and "owner as genuine client and buyer of the project"; even if the owner individuals in both decisions are the same. It also avoids collapsing the question of how the TOC has varied from previous "estimates" with the question of the continued viability and worth of the project to the owner.

Irrespective of previous estimates, the TOC ***is*** the cost that the ***integrated delivery team*** believes will be required to deliver the defined performance. If, in decision 1, the TOC varies from previous estimates, or a budget incorporated into an earlier assessment or model, the integrated delivery team will understand and justify how and why the cost has varied from previous estimates and ensure a detailed reconciliation is proven to withstand public scrutiny. This is a critical part of the validation process.

When a TOC is higher than previous estimates, the integrated delivery team will have similar arguments, tension and retribution to those that would occur on a traditional delivery approach if project costs are blowing the budget during or late in construction. ***The benefit of a project alliance, is that the validity and integrity of previous budgets, and genuine forecast of outturn cost (not starting lump sum price) are under so much scrutiny before a sod has been turned and before substantial investment is made, and not when the project is 70% complete and the owner is in a very bad negotiating position.***

Once an owner has used the expertise of the people who are designing, building and operating the project, to determine what it will cost to deliver the project, they are then in a position to carry out decision 2 and determine if project still meets their earlier business case assessments or models.

If the owner decides that the project should not go ahead, then it is up to the team to further refine the TOC, reduce scope, progress design to reduce contingency or exploit any other opportunities. A key lesson learned on many alliances that the author has been involved in, is that the owner makes the hard decisions during the TOC, and not force down the contingency below what is regarded by the team and the Independent Expert[1] as appropriate. Where items of scope are removed from the TOC, the client can set priorities and *drop dead* dates for their inclusion should savings materialise through delivery of the

[1] Independent Experts are generally companies or individuals with an estimating type background who is engaged by the owner to review and validate the TOC, and certify that it reasonable price for the scope.

project. These inclusion would be a change to the scope and TOC, but funded from client savings. Again, the author has seen this work effectively on a number of alliances.

The process for making decision 2 will not be amplified further in this paper, since it would be carried out using the strategic decision-making processes of each owner. The focus here is decision 1, reaching alignment on the TOC.

4. Ensuring Value for Money - Reaching alignment on the TOC

As stated above, TOC alignment is essentially determination of whether the TOC represents the ***right*** cost for the ***right*** project.

Some owners are considering the use of a so-called parallel TOC process, where they engage and pay for two teams to develop the TOC. The author has little direct experience of the parallel target cost process. The one project that he was involved contractually reflected a ***competitive guaranteed maximum price*** contract rather than a project alliance.

The author believes, that the process outlined in this paper if more cost effective from a project value for money perspective and cost reduction perspective.

The objective of a project alliance team in developing the TOC is to minimise opportunities for divisive and damaging arguments and disagreements in the alignment process whilst ensuring a very rigorous analysis from all perspectives (owner, constructor, designer, operator and sustainability, etc). The author believes, that the most effective TOC processes have been those where the potential points of disagreement are staggered through the TOC phase.

We recommend the following strategic steps for reaching alignment on a TOC and proving value for money:

1. Establish a reference estimate
2. Define scope (what is in; what is out)
3. Agree method for costing the scope
4. Agree basis for contingency and risk factors

The key to reaching alignment proactively is to ensure alignment early on and minimise the scope for misalignment in later stages of the process. These are strategies specific to the TOC. Whilst all this is going on, the project alliance team is also developing the design and generating innovations.

Establish a reference estimate

We recommend that the alliance team establish a reference estimate.

This should be carried on the first month of the alliance and is likely to involve the following activities:

- Convert the owner's existing budget and/or business case into the alliance team's estimating system and work breakdown structure.
- Once converted, carry out a formal review of this estimate. This would not involve revising the design in any way. Rather reviewing whether or not all costs and contingencies have been estimated or incorporated in the estimating assumptions from the ***alliance team's perspective***.

The deliverable from this step is a reconciliation report of the alliance team's assessment of the project budget.

There are many benefits to this step. The key benefit is early warning for the owner if the basis of the project budget is questionable. Since it is not at the same time as justifying the proposed TOC, there is reduced suspicion.

Should the reference estimate be higher than the owner's view, then this is not a major crises at this stage. Re-estimates rarely find items that were previously included and shouldn't have been! This is ***not*** an estimate of the project that will be built. Rather it is simply a review of an existing estimate with revised rates and contingencies and perceived omissions. It is almost inevitable that it will increase.

Scope definition (what is in; what is out)

The TOC is an engineered cost estimate based on a defined scope and set of assumptions of what is required to deliver the required asset performance.

In agreeing the scope and quality of that scope the integrated delivery team, including the operators, will review the design and discuss and agree each element, confirming whether it contributes to the performance, whether it is necessary, whether it will be accepted by end users, etc. This will be an on-going iterative process throughout the TOC phase.

The owner's organisation needs to determine whether there is independent validation of this process and of the decisions this integrated delivery team make. If there is, then an independent review team can be established to review the work of the integrated delivery team and operators. In particular, the basis for the scheme design and performance assumptions would be reviewed and validated.

Method for costing the scope

For each part of the scope a costing methodology will need to be determined. This method will be dependent on the level of design detail at the time of freezing the engineering of that element for the purpose of the TOC[2]. An element that has only reached conceptual design, a norm type estimate might be used; whereas elements that have been fully designed can be quantified and costed more accurately, albeit with specific assumptions where required (e.g. productivity rates).

The owner should ensure that an "Independent Estimator" is involved early enough to confirm appropriateness of the costing method for each element of scope. The objective is to ensure that there are not arguments later on in the TOC phase about costing method, but to ensure the right decisions are made early enough to be incorporated in the cost estimating process.

Contingency and risk factors

The Independent Estimator will need to approve the integrated delivery team's valuation of the most appropriate contingency for each cost item.

This is the one step in TOC validation that will inevitably need to be carried out towards the end of the TOC phase. Where possible a methodology or standard for contingency should be agreed in advance. This is likely to be valid for broad categories of costs, and may not be valid for each cost item.

It is helpful for the Alliance Leadership Team (sometimes call the Project Alliance Board) to establish clear guidelines which state the principles of setting contingencies. They may refer to specific industry contingency standards, or establish their own guidelines and principles. Either way, having the Alliance Leadership Team reach alignment on these principles early will reduce the risk of subsequent disagreements.

[2] The alliance team will agree dates for design freeze of each element of the project. It is beneficial to stagger the design freeze as opposed to have a blanket freeze. The design freeze is for the purpose of aligning on the TOC, and does not mean engineering would stop, rather a set of drawings, sketches, specifications and/or assumptions issued at that time. The ALT would agree if and how any innovations that are generated after that freeze are incorporated into the final aligned on TOC.

5. Competitive TOCs

There are some in industry who argue that TOCs have not demonstrated "good value". This is a highly questionable assertion since, to my knowledge all agreed TOCs have been very close to the estimate of the independent expert. The trigger appears to be that the TOCs have been higher than the sanctioned budgets or previously quoted budgets for the project. In most of these cases, the scope being costed as part of the TOC process was significantly different from that of the project when the budget was established. Since the TOC process is often some two to three years after the original budget it is a natural progression of design development for the scope of the project to have increased. It is unfortunate that the Alliance takes the blame for re-costing the project on the revised scheme.

What is interesting is that out of 40-50 alliances in Australia almost all have been delivered to within +/- 5% of the target outturn cost and only three (to my knowledge) have been delivered for more than 10% under the TOC.

Having been involved with one of those alliances, and speaking with the owners in the other two, when the TOCs were agreed, no-one expected to be delivering the project that far under budget. It was a goal, but still beyond reasonable expectations. In all cases the owners have been ecstatic about the outcome, and believed that the commercial participants earned their gainshare through genuine proactive pursuit and delivery of innovations and outstanding productivity and performance.

Fundamentally, these project should be seen as a proof that alliancing works and not as an excuse that the TOC is wrong and uncontested.

Project alliances are founded on the principle that working together collaboratively breaks down communication barriers and facilitates paradigm shifts. The two most significant paradigm shifts are:

- The owner and constructor from master servant relationship to one of working together on the same side and in particular carrying out risk assessments together proactively on an on-going basis.
- The designer and constructor going from master servant (D&C) or over the wall contractual (AS2124 type) to one where the designer is sharing construction risk one and they are equal members of the same team.

I am, and others involved in project alliances are, very concerned about the current myths around competitive TOC processes. I recommend people read section 12.2 of Jim Ross' "Introduction to Project Alliancing" paper [3]. Jim states: *"In the author's view this "competing TOC" model is fraught with potential downsides. Aside from the obvious additional costs involved in establishing the alliance, it shows a lack of understanding of the underlying factors and motivators that have enabled alliances to achieve such outstanding results."*

[3] *Introduction to Project Alliancing (on engineering and construction projects)* – April 2003 update by Jim Ross, Project Control International Pty Ltd. Available through www.pci.d2g.com

A competitive TOC will only address *demonstrating* value for money. It does not contribute to *ensuring* value for money from an engineering or team perspective. In fact, it could risk the team's ability to *deliver* value for money:

- TOC processes typically cost of the order of 5% of the value of the project. A competitive process will cost twice that. So to embark on a competitive TOC is on the premise that you believe the competitive process will deliver a benefit of 5% reduction on the actual outturn cost of the project (not just the target).
- Where the owner does not pay the full cost of the process, then some fundamentals are being risked.
- There is an argument that the TOC might be less than a traditional single TOC approach as a result of the competitive tension. The concern with this hypothesis is that the TOC is an estimate of outturn cost, not starting price. If the competitive tension means that the propensity for the alliance (including the owner since it is their TOC) to take more risk; or that risks are being ignored; or risks are not being appropriately valued; then some fundamental principles are being ignored.
- Even of those who believe in competitive processes, and acknowledging that it is possible that a competitive TOC is less, the question an owner needs to answer is what process is most likely to deliver the lowest actual ***OUTTURN*** cost.

Ultimately a culture can transcend any contractual arrangement. If a competitive TOC is adopted, then it is critical that the owner plans for and incorporates a strong focus on high performance coaching, training and team building that engenders a spirit of collaboration, innovation and integration once the single team is formed.

However, any compromise to the so-called *pure* alliance risks the foundation of that culture and the point at which people will put their commercial interests ahead of the project. The fundamental benefit of a *pure* alliance is that commercial drivers are absolutely focused on delivering the owner's objectives. Any compromise will detract from what's possible. By putting in place a suitable process to ensure and demonstrate value for money, many of the concerns that an owner may have for the process of arriving at the TOC can be addressed.

6. Summary

We believe that this is the most ***cost effective*** way to establish a TOC and to ensure and demonstrate value for money.

- The owner defines value (ideally before establishing the alliance) in either Multi-Criteria Assessment parameters, or Net Present Value.
- The owner engage only one team to develop the TOC
- The alliance develops a specific plan to Ensure and Demonstrate Value for Money
- The TOC process is rigorous, and can be scrutinised at each step.
- Any changes in cost from the owner's previous project budgets and estimates can be fully reconciled and justified.
- The decision as to whether the project should proceed or not is separated from the TOC alignment process.