

Austrroads Webinar: Procurement Decision Tool: A Case Study of the Toowoomba Second Range Crossing



Questions & Answers

Slide related

1. Slide 13: How can you justify combining road projects and hospital projects?

The tool is applied in a case study fashion to a separate road project and a separate hospital project. The economics in the tool are transferable across any large capex and associated opex project in any infrastructure sector.

2. Slide 14: It is incorrect that you have categorised RMS/TfNSW's approach as one size fits all. Have you got evidence of this from senior managers at RMS?

Applying approaches such as NSW's 10-point plan and without applying the economic principles in the tool can lead to a "one-size-fits-all" outcome.

3. Slide 15: Mistaken competition is multi-level from head contractor to subcontractor and suppliers. If there is poor ethics by the head contractor that has a flow-on effect to the subcontractors. How does your model take into consideration unethical behaviour of the head contractor?

The case study applications of the tool address avoiding mistaken competition from the perspective of the government as the buyer. The tool can also be applied by the main contractor as the buyer and in terms of procuring subcontractors. In this latter case, the tool would similarly help the main contractor to avoid mistaken competition – where the contractor prioritises delivering for value for money.

4. Slide 16: With the recently announced fast tracking of large stimulus projects, will the Tool give preference to the larger contractors or is there any hope that the smaller contractors would benefit from the Tool's recommendations as well?

Both. The Tool, in the aggregate, I think we will see a better balance in terms of providing work across all tiers. It is not pre-disposed to a particular procurement mode. It is not pre-disposed to unduly feed and unbundle to Tier 2, 3 and 4 contractors and neither is it unduly predisposed to deliver to Tier 1 contractors. The Tool will continue to see big projects, but will likely see more smaller projects, given the current market, and in aggregate, we will see a better balance and more of normal distribution in terms of Expressions of Interest around the 5 to 8 range.

5. Slide 16: Many road authorities rely on lump sum and Alliance projects. What is your view on that?

Both are good. Lump sum is a competitive contract, generally, based on reverse auction, lowest price. Collaborative approaches often based on a budget and pain/gain -share regime and often with projects like ECI and so on. Both can be efficient, and any approach can be efficient in the right circumstances under the right conditions. That is the key, to be able to assess the conditions and develop the most efficient approach, contract bundling and contract terms to have the project kick that long-term value for money goal.

6. Slide 18: Is it likely that the tool will show that the traditional procurement model used in a particular jurisdiction is not optimal? If so, what would be the market impact?

To know the answer to that you would need to run the Tool. Whether the approach being taken is sufficient can only be determined by running the Tool.

7. Slide 21: The tool combines various schools of economic thought in order to develop a procurement strategy. Is it easy to use the Tool and what qualifications or knowledge do practitioners need?

It will be sufficiently straightforward. It will be completely practical for agencies, and also industry to run with the resources and the knowledge and skills that they already have and similar to those resources when they sit down and conduct a procurement options analysis workshop. All those skills are marshalled in a different way through the guidance of the tool.

8. Slide 21: What is actually the tool? Is it a software or a spreadsheet?

Fundamentally, it is an algorithm. It is a series of economic steps, procedures, inputs and outputs. It does not sit as a piece of software; it is sitting as a textual guide to guide users. The reason for this is the essential data upon which it relies is saturated in a local context. It is the technical knowledge of the project and the project conditions including the local market, and the government's prevailing resources at the particular time of the project's procurement decision along with views about how things are likely to unfold during the delivery of the project. The Tool leverages this unique local expertise. There is potential to develop it more sophisticatedly into more of an expert system, but at the moment, I cannot see how it can be developed into an artificial intelligence format with a complete prescriptive algorithm, so it is more likely to remain more of an expert system.

9. Slide 33: Is there any revisitation of a risk analysis stage after it has been initially completed?

You would need to revisit the Tool if there was a significant delay following the initial procurement informed by the tool and the market and/or government resources had changed appreciably. The Tool would pick up the prevailing circumstances. The Tool is designed to be run in round two with same order of resources that would apply to a POA workshop.

10. Slide 41: The Tool was also trialled on a health project. Can you tell us what that health project was and how the Tool worked on it?

The health project is a major hospital in Australia. The Tool has recommended a significant difference. In contrast to the Toowoomba Second Range Crossing, in which the Tool mostly matched the actual approach, in the hospital case study, the tool mismatched substantially the approach taken by the government agency in delivering the hospital. When the user guide is available, it will be of value to users as it will show how each step varies across these two sectors. This demonstrates the versatility of the Tool and that it can be used in all types of infrastructure.

11. Slide 41: Can the rail industry also benefit from the Tool? Could the same model be applied to a new rail project?

Absolutely. The fact that the tool can be applied across all transport sectors was the thing that really appealed to the International Transport Forum at the Organisation for Economic Cooperation and Development in Paris, and which is why they recommend the tool as one of the ways forward. The Tool is versatile and can be applied to any project with a significant capital expenditure program and a project life.

12. Slide 41: Is the intention of the Tool to nominate the contract type for principal contracts, or is it scalable for use in provision of smaller, private contracts within a principal contract?

Yes. All the measurements are taken vis-a-vis the buyer. So, the Tool will step down to a different layer of buyer. For example, when the buyer becomes a main contractor procuring subcontractors.

13. Slide 42: When will the user guide be made available and how can it be accessed?

It is planned to be drafted by December 2020 and be made available around that time.

14. Slide 41: What is your definition of a successful road PPP project as I am only aware of one project in NSW that has been financially successful?

The tool develops and applies the definition of Value-for-Money (i.e. whole-life costs and benefits) as the definition of success. And so those PPP projects that yield genuinely superior whole-life costs and benefits versus traditional delivery are considered successful in the tool. Whole-life costs and benefits are those costs and benefits affected by finance, design, construction, operation and maintenance and so the tool is concerned largely with outcomes within the geographical boundary or corridor of the project and excludes social, economic and environment cost and benefits arising from the project (that is associated with BCA analysis and the upstream investment decision). The tool uses Expressions of Interest as an indirect proxy of Value for Money and the means to validate the tool's recommendations. Though the tool advocates that the agency develops a Value Rating for each project in which all the costs and performance outcomes of the project (affected by finance, design, construction, operation and maintenance) are measured in operations and updated each year, and again the International Transport Forum at the Organisation for Economic Cooperation and Development in Paris have recommended to transport agencies that they develop a Value Rating similar to that QUT is currently developing (see Section 2.7 on the Validation of the tool and footnote #5 on page 21 concerning the Value Rating).

General

15. Can training in the use of the Tool be provided?

Yes. Agencies are encouraged to contact Adrian Bridge at a.bridge@qut.edu.au to develop an agreement to help users use the Tool so they are self-sufficient.

16. What are your thoughts on a model with a combination of alliance risk and reward regime and D&C?

That could be a possible outcome recommended by the tool. The D&C part relates to the bundling (economics of scope) in Step 4 and the alliance part concerns the nature of the exchange in Step 5 (economics of risk allocation versus economics of risk sharing). And so, if the project's D&C activities were assessed as pattern 5s, then these would be bundled with a relational exchange likely including a pain/gain-share regime.

17. Do you have an idea of the annual quantum of potential savings forecast to the Australian public purse which may be possible when using this procurement decision tool across public infrastructure projects (civil, health, education etc.)?

Based on the evidence to date, and in terms of the aggregate of projects, we estimate that the tool would deliver on average significant project capex saving in the order of at least 20-30% along with significant opex savings and improvements in the performance from the user's perspective.

18. Why is collaboration not possible within a competitive environment to minimise and overcome disputes and excessive claims by the contractors?

Collaboration, based on sharing risks including a budget, and price competition, based on risk allocation and low price auction, are intrinsically different. However, they are like two sides of the same value for money coin and the tool could recommend both approaches in the same project (e.g. see the case of in Figure 1.3 in the report and please see more details on pages 11-23 of the [report on the ARC grant](#) in which the tool was develop).

19. Could you comment on the applicability of the Tool for small (<\$10m) and very small road projects (\$1m - \$5m)?

The tool is applicable here as well.

20. What is an "M&E" contract?

Mechanical and electrical contract.

21. Are the contractor's likely tendering costs factored into the Tool in relation to achieving the optimal number of EOI's?

Not explicitly. However, one of the consequences of using the tool would be to yield expressions of interest in the range of 5 to 8 and then it's recommended that only 3 or 4 of those expressions of interest are invited to tender (whilst maintaining the ability to go back to the other firms in the EOI pool if government so desired) and so this would reduce tendering costs and benefits all stakeholders.

22. Does the Tool consider de-bundling vs achieving the EOI "ideal range" as a decision, particularly in hot market? Which one is more leveraging between the two? I.e. is it worth to split two main contracts (say, \$1 billion each), into four main contracts (say, \$500 million each) to seek more EOIs and greater number of market participants?

Bundling is one of the steps in the tool. In contrast, EOI is a way to validate the outcomes of the tool and so it's not a case of de-bundling versus EOI. However, it could well be the case that de-bundling will create more EOIs and this was the situation in the case in Figure 1.3 in the report (please see more details on pages 11-23 of the [report on the ARC grant](#) in which the tool was developed).

23. What do you think it means for additional project management capability within the government / clients - if there are (upon the aggregate) smaller projects? I.e. interfaces etc.

We can speculate that the tool would promote enhancements in the in-house procurement delivery capability and capacity of government/clients (helped by the tool) and also the government's/client's in-house project management capability and capacity.

24. I have visited the Toowoomba site in March 2020, I am trying to understand if this is a good procurement model, why has there been failures in the cuttings, cracking in the pavements, shoving in the asphalt wearing course and animals being trapped in the carriageway as there are no fauna crossings for these animals?

A critical part of the tool when it recommends a D&C approach is to adopt the measures noted in Table 2.7 (in particular described on pages 21 and 22 of the report) i.e.

- For example, in terms of Priority 1. Minimising Whole-life Costs
 - "When there is an absence of O &/or M externalised project specific activities to bundle with the D&C externalised project specific activities, there is still a strong incentive to avoid gold-plating. However, to prevent this incentive turning negative, measures that neutralise incentives to invest in a negative way are required to prevent proponents unduly incorporating cost cutting measures in design and capital costs that disproportionately increase lifecycle costs and/or disproportionately reduce functionality. For example,
 - More prescription in client requirements including developing the design to the point that the client is satisfied that key functionality is not going to be compromised by the proponent's completion of design; and/or
 - Mobilising the credible threat of future work by monitoring contracts post-construction/in operations to assess the performance of these contracts in terms of those operations and maintenance activities affected by design and construction. This performance assessment can be published as an incentive to proponents not to shirk quality in design and this performance assessment can also be used in the formulation of tendering lists for future contracts. (see Footnote #5)".
- And, for example, in terms of Priority 2. Quality Compliance (Certainty)

- “When there is an absence of O &/or M externalised project specific activities to bundle with the D&C externalised project specific activities, there is still a strong incentive to pursue efficiency in construction. However, to prevent this incentive turning negative, measures that neutralise incentives to invest in a negative way are required to prevent proponents quality shading during construction, including shirking requirements in terms of workmanship, the use of plant and equipment and the sourcing of materials. For example,
 - The use of site-based supervisors working as the client's agent in monitoring the quality of the construction e.g. Clerk of Works; and/or
 - Mobilising the credible threat of future work by monitoring contracts post construction/in operations to assess the performance of these contracts in terms of those operations and maintenance activities affected by design and construction. This performance assessment can be published as an incentive to proponents not to shirk quality in design or construction and this performance assessment can also be used in the formulation of tendering lists for future contracts (see Footnote #5)”.

- Footnote #5

“At the time of writing, a “Value Rating” Tool in Australian government schools is being developed by QUT, UNSW and The University of Melbourne, led by Associate Professor Adrian Bridge (available at: <https://research.qut.edu.au/arcvio/>). The Value Rating tool is designed to assess performance and costs of infrastructure in operations. Again, the Value Rating tool is cited by the International Transport Forum (ITF) at the OECD as second of two initiatives the ITF considers as the “way forward” in terms of its further development and application to roads. As mentioned, the ITF report is the biggest ever inter-governmental report on infrastructure (see pages 109-112 in ITF 2018, Private Investment in Transport Infrastructure: Dealing with Uncertainty in Contracts, International Transport Forum, Paris, available at: <https://www.itf-oecd.org/private-investment-infrastructure>).”