

COSTINGS

Key lessons learnt	Robust and accurate project cost advice prepared in support of a business case is critical to a successful project. At the appropriate stage of project development, the estimate should demonstrate it has the correct attributes.
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Introduction

Robust and accurate project cost advice prepared in support of a business case is critical to a successful project. At the appropriate stage of project development, the estimate should demonstrate it has the correct attributes. The advice contained within the cost estimate should consider and integrate technical advice, project objectives, attributes, and constraints along with a risk profile.

This guidance note is premised mainly toward major or high risk projects, however its principles apply generally.

Key considerations

It is critical to the success of the business case that it is supported by robust and accurate cost advice for both capital cost and operation and maintenance costs. The project cost estimate advice is relied upon to assess and compare project options, support project justifications, determine funding and investment decisions, and establish project budgets. The success of any project cost estimate is founded on a process which represents industry best practice. The principles adopted in the cost estimate process are common to all stages of the project life cycle.

Numerous guidelines have been prepared by government departments to inform the effective delivery of appropriate cost advice. These may vary depending on the specific needs of each agency. However, it is critical that the estimates contain key attributes within industry best practice cost estimating.

- ▶ **Project Definition** – The study limits are clearly defined and aligned with the project objectives.
- ▶ **Estimate Structure** – A ‘project appropriate’ work breakdown is to be established with clear delineation between direct, indirect, client, contingency and escalation costs.
- ▶ **Risk** – consideration should be given to the quantification and assessment of estimating project risks.

- ▶ **Delivery Strategy** – assumed or defined delivery strategy and schedule to be considered.
- ▶ **Assumptions & Qualifications** – comprehensive and realistic.
- ▶ **Exclusions** – items not considered by the estimate but may be relevant to the project should be listed.

Strategic Business Case (SBC)

Cost advice prepared at this stage is generally informed by concept design and related scoping documents. Given the lack of detailed design, the cost information is reliant on estimating practices that are considered strategic or global. The estimate can be informed by metrics and comprise rates such as cost per km or road or rail and per cent for indirect costs and owners costs. The estimate may be heavily reliant on benchmarks or historic rates which can be fraught with risk. It is critical that best practice estimating principles apply and, if historic values are relied upon they should be supported with a clear understanding of their source and attributes. Often benchmarking is heavily relied upon to inform estimates without the estimator or stakeholders understanding the relativity of the advice and whether it is appropriate and accurate.

Final Business Case (FBC)

Cost advice at this stage mirrors the extent of project development which generally considers:

- ▶ preparation of performance and technical specifications
- ▶ engineering design
- ▶ stakeholder agreements
- ▶ commercial frameworks
- ▶ project risk schedules
- ▶ delivery programs
- ▶ contract packaging.

Bottom-up and first principles estimates should be prepared where project information allows. Assumptions developed in early stages can be refined to reflect increased FBC project definition and understanding.

The cost structure may be reshaped from the SBC to capture the intended packaging and contract delivery strategy. The development of the FBC should be mindful of the preceding project stages which will require the costs to be refined into pre-tender estimates and the representative tender schedules.

Costs should adequately consider project staffing, management and oversight obligations within the organisational and delivery schedules. Sunk costs are to be properly considered and represented within the cost provision.

It is critical that the extent of project risk is properly considered within the risk assessment for both P50 and P90 positions on the risk scale. Inadequate consideration of project risks will lead to under or over estimates of inherent and contingent risks while severely diminishing the integrity of the project budget. Quantitative risk analysis (QRA) risk assessment should be informed by comprehensive project risk schedules, but the risk

definition drawn from the project risk schedule should be suitable for modelling purposes. The modelling should be kept simple, with the extent of correlation limited. The model and its outputs should be peer reviewed by an independent specialist.

The role of the estimate is not just to inform but to test. The estimate should be used to interrogate the design and project scope to ensure that the project represents value for money. The cost outputs can be measured against relative benchmarks and similar projects to ensure design and project requirements are not overreached.

The estimate requires severe scrutiny of the basis of the estimates and its supporting assumptions. Reviews should be undertaken by the technical leads to ensure that the estimate adequately considers the design and undersigned scope. In addition, an external peer review should be undertaken by a suitably qualified quantity surveyor with experience in the asset class (road, rail, water etc). Aside from identifying deficiencies or over estimation the review should also consider any possible value engineering opportunities.

Source material

Sourcing Guidelines and Templates:

- ▶ Department of Infrastructure and Regional Development – Guidance Note 1 Project Scope
- ▶ Department of Infrastructure and Regional Development – Guidance Note 2 Base Cost Estimation
- ▶ Department of Infrastructure and Regional Development – Guidance Note 3B
- ▶ Department of Treasury and Finance – Investment Lifecycle and High Value/High Risk Guidelines, Preparing Project Budgets for Business Cases.

The above documents are reference points. Agencies have developed guidelines and advice which differ from one another and represent their expectations and needs. It is advised that detailed queries relating to the development of robust cost advice should be referred to an appropriately experienced subject matter expert.

▶ About the author:

David Lawson is a Director of InfraSol, a Principal of Cost, Commercial and Risk Management Services with over 25 years of industry experience. David has delivered cost, risk and commercial advice across a range of state and nationally significant infrastructure projects including Parramatta Light Rail, NSW Housing Stimulus, WestConnex 1A, WaterFix and Melbourne Metro. David acts in an Expert capacity across a range matters for government clients providing quantum advice