Risk to Reward.

Navigating risk management in projects and procurement.

Effective project management hinges on a comprehensive understanding of risk – its identification, management, and potential to create opportunities. Whilst it is tempting to view risk purely as a threat to project objectives, risk can present valuable opportunities and drive innovation. In this article, we outline a structured approach to risk management based on Australian standards and highlight the importance of embedding risk management practices into your organisation's culture.

What is risk?

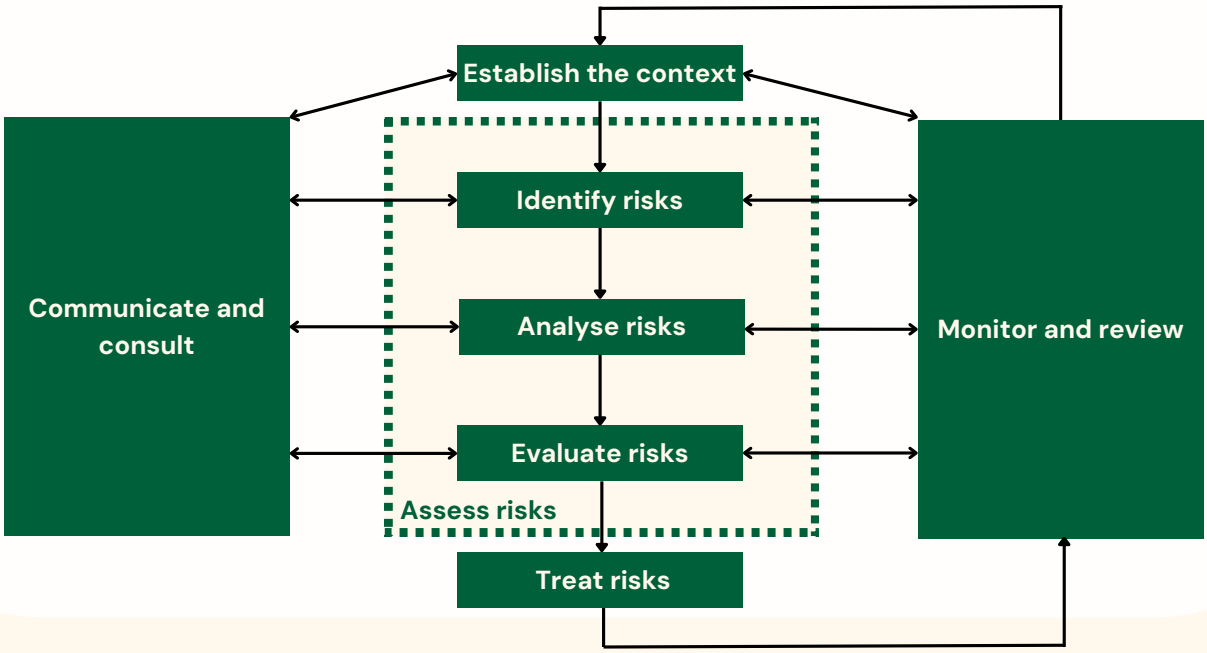
At its core, risk involves exposure to potential loss, injury, or adverse circumstances. The Oxford English Dictionary defines risk as 'the possibility of loss, injury or other adverse or unwelcome circumstances, a chance or situation involving such a possibility' or a 'person or thing regarded as likely to produce a good or bad outcome in a particular respect'. Similarly, the AS/NZS ISO 31000:2009 Standard defines risk as 'the effect of uncertainty on objectives'. Construction project risks manifest in a variety of forms, from financial setbacks to safety hazards, and can arise at any phase of the project life cycle.

Risk management

The phrase 'risk management' encompasses the culture, processes and structures that aim to realise potential opportunities whilst managing the adverse effects of risk. An effective risk management framework must recognise the fundamental role that people and culture play in achieving an agency's objectives. Risk management empowers organisations to assess opportunities and accept risks that are worth taking, whilst implementing measures to eliminate or 'treat' those risks that are not. Organisations that invest in robust risk management practices over time demonstrate continual achievement of their objectives, setting them apart in this competitive landscape.

How do we manage risk?

To operate effectively, a risk management framework should be embedded in an organisation's culture and practices, viewed as an integral part of managing the business and be tailored to the processes of the particular organisation. The below diagram has been adapted from the AS/NZS ISO 31000:2009 Standard.



We expand further on this risk management framework below.

Step 1: Establish the context

It is important to first establish the internal and external context in which risks are to be managed. Internal context requires consideration of the organisation's:

1. main objectives;
2. key constraints;
3. tolerance for risk;
4. critical success factors, such as completion on time and within budget, compliance with regulatory requirements and relevant standards, fitness for purpose, compliance with design, no environmental damage and no workplace injuries, deaths or industrial disasters; and
5. culture, organisational structure, policies, resources, capabilities, information systems and contractual relationships.

External context requires consideration of the external environment in which the organisation operates, including:

1. geographic, political, social and economic factors;
2. nontraditional and traditional project delivery models;
3. the natural and competitive environment; and
4. relationships with external stakeholders.

Step 2: Identify the risks and types of risk

The organisation must then identify the sources and types of risk that may impact the business or particular project.

Risk types include holistic risk, lifespan risk (being the risks associated with feasibility, tendering, financing, construction, operation, maintenance and abandonment), legal risk, technical risk, commercial risk, regulatory risk and process risk.

For procurement projects, the primary risks usually fall into one of the following categories:

Organisations must also consider the risks associated with not pursuing an opportunity.

A variety of methods can be used to identify risks, including:

1. process flow charts;
2. fault tree analysis;
3. scenario planning;
4. leveraging knowledge and experience, including past experience with similar procurements;
5. site visits;
6. research, interviews and consultation with stakeholders and experts;
7. checklists; and
8. risk workshops and brainstorming.

Step 3: Analyse the risks

Once the risks have been identified, a comprehensive risk analysis must be undertaken. There are two key factors to consider when characterising risk, being the probability that an event will occur, and the ultimate impact on the project if that event does occur. The outcome of this assessment informs whether a risk needs to be addressed and, if so, the most appropriate strategy to address that risk. The risk identification process is contextual, while the decision on a course of action is a process of judgment and analysis. Risk analysis can be qualitative, quantitative or a combination of both.

Qualitative analysis typically involves a subjective assessment, relying on expert judgment and experiences to identify and prioritise risks based on their potential impact and likelihood. The output is descriptive, with risks labelled as 'extreme risk', 'high risk', or 'low risk'. This method often relies on tools such as risk matrices and brainstorming sessions, making it particularly useful in scenarios where data is limited or uncertain.

In contrast, quantitative analysis employs mathematical models and statistical techniques to measure risk in numerical terms, allowing for precise calculations of probabilities and impacts. This approach is beneficial for organisations that can leverage historical data and require a more rigorous framework for decision-making. Ultimately, while qualitative analysis provides valuable insights into the nature of risks, quantitative analysis delivers a more concrete framework for understanding and managing them. The method of analysis must be tailored to the specific project.

Step 4: Evaluate the risks

The next step requires an evaluation of the risks based on the outcomes of the risk analysis.

We recommend applying a 'formula' to the risk evaluation process to assist with triaging the risks that require treatment. This can be done by assigning the likelihood of the risk occurring and the impact of the risk if it were to occur a number between 1 and 3. A probability score of '1' represents a low probability of the event occurring, while an impact score of '1' represents a minimal impact should the risk eventuate. By multiplying the rate of occurrence (i.e. the probability) of the risk occurring by the likely impact of the event, the risk can be assigned a 'risk rating'.

For example, consider:

- the risk of environmental/community protests. If the probability of protests occurring is high (3) but the impact of such protests is low (1), the risk rating is 3;
- the risk of a contractor using outdated equipment or materials. If the probability is medium (2) and the potential impact is medium (2) then the risk rating is 4;
- the risk of a skills shortage. If the probability of occurrence is high (3) and the potential impact is high (3) then the risk rating is 9.

In this example, it is clear from the risk ratings that skills shortages pose the greatest risk to the project. This risk should therefore be assigned the highest priority for treatment. In contrast, the relatively low risk rating of 3 for environmental and community protests suggest that the organisation may allocate less resources - both in terms of time and budget - towards managing this risk.

The risk ratings must be considered in light of the internal and external contexts discussed earlier, as well as any applicable legal and regulatory requirements.

Step 5: Treat the risks

The final step is for the organisation to 'treat' the identified risks. The method chosen to treat the risk (and the associated cost of doing so) should be commensurate with the level of risk posed, subject to any legal or regulatory requirements.

For example, lower stakes risks may be managed through community consultation, while higher stakes risks may necessitate guarantees and targeted KPIs, extra funding or ongoing monitoring.

It is a fundamental risk management principle that risk should be borne by the party best able to control and manage it. Risk may be treated by:

- **eliminating the risk:** where the drawbacks are significant, and the benefits are minimal;
- **reducing the risk:** by implementing risk management strategies such as training programs, ongoing compliance monitoring and the preparation of competence and skills matrices for all positions;
- **transferring the risk:** by assigning different categories of risk to the party that is best equipped to manage that risk. This may be done through contractual terms that require, for example:
  - that the contractor's work complies with regulatory requirements and design, is fit for purpose and complies with all workplace health and safety laws;
  - that the consultant's design complies with regulatory and project requirements, is buildable, sound and provides accessibility for ongoing maintenance;
  - a quality management system; and
  - insurance, indemnities, warranties, guarantees and limitations of liability; or
- **sharing the risk**.

Overarching practices

Communication and consultation with internal and external stakeholders should take place at every step of the risk management process. Stakeholders' unique perspectives and diverse backgrounds can offer valuable insights into potential project risks. Regular ongoing monitoring and review must also be built into the risk management process. This includes monitoring and review of the risks themselves, as well as monitoring and review of the risk management framework.

How we can help

Risk management is an ongoing process that must commence at the earliest stages of a project's lifecycle (for example, by conducting a feasibility

study) and continue throughout the life of a project. Failure to implement an effective risk management system may expose your project to time and cost blowouts, injury to persons and property, protracted legal and financial disputes and damage to your professional reputation. In short, effective risk management is critical for successful delivery of a project.

At Muscat Tanzer, we can help you develop and implement a robust risk management framework. Our team will work closely with you from the outset of your project to develop a risk management framework, conduct risk workshops, identify potential legal risks, draft clear contracts, and ensure that your project stays on track, protecting your interests and minimising risk exposure. By adopting a proactive approach to risk management, embedding risk management practices, fostering communication with stakeholders and committing to continuous monitoring and review, we can help you navigate risks and safeguard project objectives.

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