

# Value engineering

8-16  
HOURS

15-20  
PEOPLE



A Value Engineering workshop occurs during the design phase and aims to optimise the cost and performance of the project output. The outcome of this workshop is a number of alternatives supported by the project team that could reduce the project cost or improve the performance while not reducing the quality.

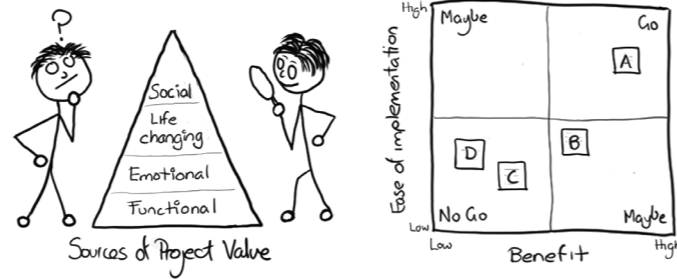
## Benefits

Projects often take on a life of their own and develop over time. It's important the project team takes time to make sure the project scope and final output is aligned to the original project objectives. Often additional scope creeps in, equipment costs and performance specification may not be optimal, the overall configuration may introduce waste and rework and constructing the project output may be difficult and inefficient.

A value engineering workshop is a systematic and methodical approach to optimise the cost and performance of the project output. The process focuses on the function of the design whether that be equipment, plant upgrade or a new business process.

The value engineering process can be used for process simplification or facilities optimisation, you just need to tweak the process.

These workshops should be conducted early in the feasibility stage of the project. Simplified versions can also be run in prefeasibility and execution to ensure the project team is either simplifying or optimising costs and performance.



Value engineering graphic

## Activities

### Pre-work

1. Work with the project sponsor to design and plan the workshop using the planning tools
2. Create a workshop communications deck and ask the sponsor to send it to the participants; this raises the importance of the activity
3. Review the project background documentation to:
  - Create a high level project overview (what, why and who is involved?)
  - Identify the original project objectives, business benefits and customers needs
4. Create workshop posters, the Value Engineering template and arrange a scribe to be ready for the workshop.

### Steps

1. Bring everyone onto the same page using the SPACER tool.
2. Provide a common understanding of the project detailed context and objectives, possible benefits and customers needs.
3. Provide a common understanding of the Value Engineering process and value proposition concept.
4. Define the basic function of the design.
5. Define any areas of opportunity.
6. Identify any possible alternatives to reduce cost or improve performance using channel brainstorming.
7. Identify the alternatives relative improvement in costs and performance using N/3.
8. Prioritise alternatives and select best alternatives using a payoff matrix.
9. Document the next steps to be completed outside the workshop which include:
  - Preparing a detailed design and estimate for the high priority alternatives.
  - Presenting and seeking approval to implement the priority alternatives.
  - Building the alternatives back into the overall project plan to make it happen.
  - Communicating the outcomes.
10. Wrap up the workshop and capture feedback using the plus/deltas tool.

### Post session

1. Nominated scribe to populate the Value Engineering template during the workshop.
2. Facilitator to finalise the Value Engineering alternatives report.
3. The sponsor is to validate the Value Engineering alternatives and issue to the project team.
4. Complete the next steps to progress the selected alternatives.

### Tips

- Value Engineering workshops are often seen as a cost cutting exercise. It is important to focus on the function, if we reduce the costs and change the function we are unlikely to deliver the performance and quality required by the customer.
- The mood in the workshop is critical, it needs to be improvement driven, up beat and positive. Only then will the team be able to identify creative alternatives while maintaining the quality and function.
- To ensure people have a good understanding of the scope have information such as the plot plan, process flow diagram, heat and material balances, piping and Instrumentation diagrams and Class 2 Cost Estimate available.

### Duration

- The length of the workshop will depend on the size of the project and quality of the pre-work. Good workshop planning will reduce the workshop duration as the team are more focused.
- A major project may require 1-2 days hours to ensure the all the scope and opportunities are explored. A minor project may need only a few hours as the scope will be smaller.

## Tools

- Mandatory facilitation tools
- Detailed context
- Project objectives
- Communication plan
- Value proposition
- Channel brainstorming
- N/3
- Payoff matrix