What is it?

Any risk management process is only as good as the risks that feed into the process itself; therefore, risk identification is a critical risk management activity. Whilst there are many ways to identify risks, one important source of candidate risks is assumptions and dependencies.

Whilst there are many differing definitions of assumptions and dependencies, they are typically used to underpin schedules (e.g., when a key material will be delivered to the site), business cases (e.g., the timing of revenues), cost models (e.g., debt interest rates), contracts (e.g., material price inflation indices), etc.

However, one challenge when using assumptions and dependencies as a source of risk identification is determining which assumptions and dependencies we should incorporate – all of them, some of them, which ones?

The ABCD technique helped with this dilemma by providing a structured approach to determining which assumptions and dependencies to consider as risks to be held on the risk register.

Purpose & Use

This guide explains briefly how the ABCD technique works, the parameters used in the simplistic assessment process, and both the advantages and disadvantages of the technique.

Rules / Context / Background

It is worth noting that the ABCD technique has several different approaches, and the approach within this document is one example only. The guide is, therefore, not stating that this is the only approach
that can be taken. In addition, the ABCD technique is not the only risk identification technique available but has proven helpful to several practitioners within the risk management and wider project management industries.
How to

The origin of the ABCD technique is not certain, but it is thought to originate from the UK transport sector. Also, although there appear to be different approaches to the application of the ABCD technique, there are several common principles:

- All assumptions and dependencies can be linked to specific project or organisational objectives (e.g., financial, time, quality, safety, etc.).
- In turn, assumptions can be assessed against two key parameters (Table 1):
  1. How sensitive are my project or organisational objectives to changes in this assumption and dependencies?
  2. How confident am I that the assumption or dependency will remain true or be fulfilled?

Using this assessment of the assumptions and dependencies can help better prioritise how they should be monitored/managed.

<table>
<thead>
<tr>
<th>How sensitive are my project, or organisational, objectives to changes in this assumption or dependency?</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>How confident am I that the assumption or dependency will remain true or be fulfilled?</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

**Table 1: Illustration of the ABCD Technique**

<table>
<thead>
<tr>
<th>High Sensitivity</th>
<th>Low Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>These assumptions and dependencies are relatively benign, so can simply be reviewed on a regular (e.g., quarterly) basis in case they change in status against the two parameters.</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>These further validated assumptions and dependencies should be, perhaps with quantitative analysis, to determine if they should be treated as candidate risks and enter the risk management process.</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>These assumptions and dependencies should be further validated, perhaps with quantitative analysis, to determine if they should be treated as candidate risks and enter the risk management process.</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>These assumptions and dependencies should be considered as candidate risks and enter the risk management process.</td>
</tr>
</tbody>
</table>
The ABCD analysis output can be documented and further integrated with the risk management process, as indicated in Table 2.

**Table 2: Illustration of Record of ABCD Analysis**

<table>
<thead>
<tr>
<th>Assumption/Dependency ID</th>
<th>Source</th>
<th>Title</th>
<th>ABCD Assessment</th>
<th>Record of Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Baseline Programme (Version XX)</td>
<td>The lead time for delivery of the steel is x months.</td>
<td>D</td>
<td>Discussed with Project Manager and raised as a risk (Risk ID AA).</td>
</tr>
<tr>
<td>02</td>
<td>Construction Contract (Reference XX)</td>
<td>An allowance for contractor-owned weather-related events is y days per annum.</td>
<td>C</td>
<td>Discussed with Project Manager and workshop to be held with project team to conduct quantitative modelling of weather events against this assumption and determine potential client-side impacts to the project.</td>
</tr>
<tr>
<td>03</td>
<td>Cost Model (Version XX)</td>
<td>Debt interest rates will be z% until the project is complete.</td>
<td>A</td>
<td>Project has a very low level of debt, and the current assumption is several times higher than current interest rates. Cost Engineer will review this assumption on a quarterly basis, in case the ABCD analysis changes.</td>
</tr>
</tbody>
</table>
(Dis)Advantages of the ABCD Technique

Like any management approach or technique, there are both advantages and disadvantages associated with the ABCD technique.

The main advantages include:

- Since this technique builds upon work already completed by other project professionals (i.e., the original identification of assumptions and dependencies), it is obviously efficient in re-using project resources. As such, it is more likely that there will be greater buy-in from these project professionals into the overall risk management process, as they can associate themselves with the origins of the candidate risks.
- Like risks, assumptions and dependencies also need to be actively managed to contribute to the project’s success. However, assumptions and dependencies can sometimes lie dormant if not adopted and actively managed by one of the traditional project disciplines, such as planning, cost, risk, and interface management. This technique enables assumptions and dependencies to be actively managed in an integrated manner, where their impact is considered across all project objectives.

Some of the main disadvantages include:

- The ABCD technique relies on qualitative analysis. While it can be supplemented with quantitative analysis (e.g., numeric sensitivity analysis), it is prone to flaws of any qualitative analysis (e.g., biases). Therefore, some calibration will be required to provide assurance that the appropriate assumptions and dependencies are emerging as candidate risks.
- There may be some resistance from other project professionals, who may each want to manage assumptions and dependencies in their respective silos (e.g., planning engineers might want to split out and manage the schedule-related items, and the same for cost, quality, safety, etc.).

Conclusions

Whilst not traditionally listed as a common risk identification technique, the ABCD technique can:
• Link the active management of assumptions and dependencies, especially any inherent uncertainty, with risk management.
• Provide an efficient and effective source of candidate risks.

However, like any risk management technique, there will be some advantages and disadvantages, which should be considered prior to adopting this technique.