

- Purposes**
1. Identify relationships between risks so that they can be assessed and managed at different levels, and
 2. Trace the decomposition of risks over successive iterations of a top-down multi-pass process, or
 3. Rationalise the number of risks in order to improve overall clarity, coherence and process capability.

Approach

A key factor that drives risk management capability is whether or not risks are understood clearly. The most common approach to this issue is to develop risk descriptions (see Risk Descriptions guidance sheet). A sound approach to developing risk descriptions should enable risks to be understood at different levels of decomposition. The most usual approach is to derive child risks from an understanding of the sources of uncertainty that influence their parent.

For illustrative purposes, the example below is a simple one typical of a detailed risk register. However, the same principle can be applied to risk models and the decomposition of risk from higher level composite risks.

A simple example

Risk A: “Design issues delay delivery of drawings”

Context: “It is assumed that the subcontractor will have received all drawings by 1st March.”

Source(s) of uncertainty:
“Drawings could be delayed by late changes to the specification or a lack of design resources.”

Impact: “Delay to the delivery of the first two batches of product. A delay of more than one month would also incur a £10K charge.”

Risk A decomposed into child risks, Risk 1 and Risk 2:

Risk 1: “Late design changes delay delivery of drawings.”

Risk 2: “Lack of design resources delays delivery of drawings.”

Exercising judgement

In theory one can continue to decompose almost any risk ad infinitum. Selecting the appropriate the level of risk decomposition is therefore a matter of judgement. Factors to consider include:

- Reasons to decompose**
1. During an iteration of a top-down multi-pass process, it may become evident that one or more aspects of risk are particularly significant. It would then make sense to use to decompose these aspects preferentially for the purposes of further analysis and action during the next iteration of the process.
 2. Decomposing risks may achieve an improved understanding of related sources of uncertainty and hence lead to identification of more effective risk responses.
 3. It may be necessary to decompose risks in order to allocate them to appropriate risk owners.

- Reasons to discontinue further risk decomposition**
1. Increasing the level of detail in risk models can cause them to become irrational. For example, a model might simulate simultaneously the occurrence of duplicate or mutually exclusive effects.
 2. As risks are decomposed, important information about common factors that connect them may be lost. This can lead to highly effective overarching risk responses being overlooked.
 3. Risk decomposition might shift managerial responsibility for risk ownership down to levels at which people lack the authority or influence to act as necessary.
 4. Where risk has been transferred contractually, further risk decomposition and management is usually better conducted by the subcontractor. However, the customer may expect to see evidence of this.

A final point to consider

The administrative burden on a project can become unsustainable if it attempts to maintain and review information on too many individual risks. Risk information quality and confidence in the process can then fall. A solution is to rationalise the number of risks by grouping child risks into parents.