Practical Project Risk Management [1]

Source-orientated Parent-Child Risk Breakdown: A brief guide [2]

Purposes

1. Decompose risks over successive iterations of a top-down multicycle process, or
2. Identify risk relationships for assessment, modelling or management purposes, or
3. Rationalize the number of risks to improve process deliverability, clarity or coherence

Approach

It is important that risks are understood clearly. The most common approach to this issue is to develop risk descriptions (see *Risk Descriptions* guidance sheet). A sound risk descriptions approach should enable the identification of source-orientated parent-child risk relationships.

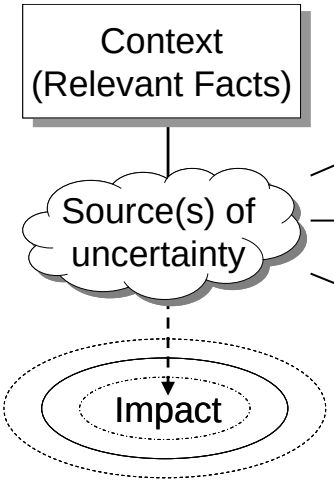
For illustrative purposes, the example below is a simple one typical of a detailed risk register. The same principle can be used to decompose risk from higher level composite risks. Note that risks might also be broken down into different strands of impact e.g. to structure a risk model.

Risk A: "*Software Development Schedule Duration Exceeded*"

Context: "*The software schedule estimate is 18 months.*"

Source(s) of uncertainty: "Delays could be caused by 1) software team turnover, 2) new software requirements, 3) Errors in the software sizing estimate.

Impact: *"1) Software schedule delay of up to 8 months, 2) cost increase of $80K per month ."*



Risk A decomposed into three child risks,

Risk 1: "*Software Team Turnover higher than expected*"

Risk 2: "*New Software Requirements identified*"

Risk 3: "*Software size estimate based on current requirements proves to be too low*"

[1] This series of articles is by Martin Hopkinson, author of the books "*The Project Risk Maturity Model*" and *"Net Present Value and Risk Modelling for Projects"* and contributing author for Association for Project Management (APM) guides such as *Directing Change* and *Sponsoring Change.* These articles are based on a set of short risk management guides previously available on his company website, now retired. See Martin's author profile at the end of this article.

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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:

Reasons for decomposing

1. During an iteration of a top-down multicycle process, it may become evident that one or more aspects of risk are particularly significant. It would then make sense 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 the identification of more effective risk responses.
3. Decomposed child risks might be easier to allocate to appropriate risk owners.

Reasons for discontinuing decomposition

1. Increasing the level of detail in risk models can cause them to become incoherent, often for reasons that are difficult to identify. For example, a model might duplicate sources, omit overarching risk effects or simulate mutually exclusive or duplicate 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

Reasons for grouping child risks into parents

1. Rationalise the number of risks in a register for reasons of process manageability.
2. Develop a better understanding of overarching risks for management purposes.
3. Avoidance of modelling coherency issues by grouping up risks with an associated impact.

Common Faults

1. Failure to adopt a top-down multicycle approach to managing risk, particularly during the earliest phases of a project.
2. The production of incoherent risk models e.g. by a default “sum of the risks” approach.
3. Risk registers that contain too many risks e.g. causing an unmanageable administrative burden and/or loss of senior management insight into overarching sources of risk.
4. Over-interpretation of risk prioritisation results - failure to realise that prioritisation results are affected by pragmatic risk breakdown choices made when defining risks.

About the Author

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Martin Hopkinson, recently retired as the Director of Risk Management Capability Limited in the UK, and has 30 years' experience as a project manager and project risk management consultant. His experience has been gained across a wide variety of industries and engineering disciplines and includes multibillion-pound projects and programmes. He was the lead author on Tools and Techniques for the Association for Project Management's (APM) guide to risk management (*The PRAM Guide*) and led the group that produced the APM guide *Prioritising Project Risks.*

Martin's first book, *The Project Risk Maturity Model*, concerns the risk management process. His contributions to Association for Project Management (APM) guides such as *Directing Change* and *Sponsoring Change* reflect his belief in the importance of project governance and business case development.

In his second book *Net Present Value and Risk Modelling for Projects* he brought these subjects together by showing how NPV and risk modelling techniques can be used to optimise projects and support project approval decisions. (To learn more about the book, click here.)