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On Risk Mitigation Strategies
by Kik Piney
Letter to the Editor

Comments on Risk Mitigation Strategies[1]

LETTER TO THE EDITOR

30 September 2022

Ref: Hopkinson, M. (2022). Pre and Post Mitigation Risk Estimates: A brief guide, Practical Project Risk Management, series article, *PM World Journal,* Vol. XI, Issue IX, September. Available online at https://pmworldlibrary.net/wp-content/uploads/2022/09/pmwj121-Sep2022-Hopkinson-pre-and-post-mitigation-risk-estimates-series-article.pdf

To the Editor, PM World Journal

Sir,

I would like to submit a few remarks in response to *Hopkinson, M. (2022). Pre and Post Mitigation Risk Estimates: A brief guide, Practical Project Risk Management, series article, PM World Journal, Vol. XI, Issue IX, September*.

First, a remark on the use of the term "mitigation" which is generally defined to mean: "action of reducing the severity, seriousness, or painfulness of something". Use of this term would therefore imply that the only actions we are considering are associated with *threats*, since opportunities do not cause pain and should, in any case, be enhanced rather than reduced. However, for a complete analysis of the risk situation, opportunities should be taken into account at the same time as threats, and the term "risk response[2]" would therefore be preferable to "mitigation"[3].

Now a remark about the stated purposes of the process described in the article which proposes to "estimate the effect of risk mitigation plans on individual risks, and potentially, quantify the overall value added to a project as a consequence of its risk mitigation plans". I believe that this approach could be improved upon.

The weakness of the proposed approach is due to the fact that the impacts of individual responses to threats and opportunities can affect several success criteria at once, while interactions between response actions can enhance the effectiveness of some of them while making others less effective or even counterproductive. The value of the resulting effect is therefore not equal to the sum of the individual effects. For this reason, the following algorithm is proposed:

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[2] I am referring in this context to proactive responses to identified risks, as opposed to reactive responses to risk events that have occurred.

[3] And there are then two categories of responses: "mitigation" (for threats) and "enhancement" (for opportunities)

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1. *Baseline plan*: Create a response-complete baseline plan including all of the proposed responses, taking into account the costs of implementing each of the responses.

2. *Simulation*: Run a simulation on the baseline plan to obtain the probability curve of the results to be achieved (e.g., increased value, reduced time and/or cost over-runs, etc.).

    a. This will give a more realistic forecast of the resultant outcome.

    b. However, a plan including all of the selected responses may be too complicated to manage effectively[4]. If this is the case, continue with the following step.

3. *Simplification*: Identify the response that provides the lowest contribution, as follows:

    i. for each of the responses in turn, remove it from the current baseline and carry out the simulation on the resulting plan.

    ii. Using the results of those simulations, identify the potential response whose removal had the lowest undesirable impact with respect to the current baseline. This will indicate the best choice of response to eliminate[5].

    iii. If you do decide to eliminate that response,

    - the modified plan becomes the new baseline;

    - if it is considered necessary, repeat this simplification step on the new baseline in order to determine whether there might be an additional response that could usefully be removed[6].

4. Exit, and use the latest version of the baseline to manage the project.

This analysis supports and builds on the conclusion in Martin Hopkinson's article that "Pre- and post-mitigation estimates may be a poor substitute for […] choices made after risk modelling of alternative plans".

So, in brief:

- Remember that the effect of uncertainty can be positive or negative[7].

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[4] This is a negative risk in its own right.

[5] Because its inclusion makes the lowest improvement to the situation.

[6] Due to potential interactions between the remaining responses, you should carry out all of the actions (i, ii, and iii) in this step in order to identify the preferred response to be removed.

[7] It is unfortunate that, in normal usage, the term "risk" carries a negative connotation but is the term adopted by all project management standards for "uncertainty that matters". "Chance", as in "games of chance", might have been a more appropriate term, thereby avoiding the potential misunderstandings (risks?) associated with the term "risk".

- Use the term "risk response" rather than "mitigation".

- Always take the potential interactions between responses into account.

- Analyze threats and opportunities together.

- Use simulation rather than direct addition to estimate the cumulative effects of multiple response actions.

- Find a sufficiently optimal subset of possible responses rather than aiming for "perfection".

These steps will not guarantee finding the best possible plan, but they will provide a reasonable strategy for an acceptable level of effort, and help the project planning team to justify their choices.

Yours etc.,

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