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Extending the risk process to manage opportunities

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Abstract

The traditional view of risk is negative, representing loss, hazard, harm and adverse consequences. But some current risk guidelines and standards include the possibility of "upside risk" or opportunity, i.e. uncertainties that could have a beneficial effect on achieving objectives. Despite this theory, most applications of the risk process still concentrate on managing threats, and approaches to opportunity management remain patchy and reactive. The tools and techniques available to risk practitioners seem to focus attention only on the negative side of risk. This paper extends the scope of the risk process to include opportunity management explicitly.

Keywords: Risk management; Risk; Threat; Opportunity

1. Introduction

Few project managers would deny that all projects are subject to uncertainty, arising from a multiplicity of sources (including technical, management and commercial issues, both internal and external to the project). It is also widely recognised and accepted that successful management of uncertainty is intimately associated with project success, as the proactive project manager constantly seeks to steer the project towards achievement of the desired objectives. It is this realisation which has led to the undoubted popularity and profile of risk management, which is seen as offering a structured approach to managing the inevitable uncertainty in projects.

It is also clear that if/when uncertainty strikes, it can have a range of effects on achievement of project objectives, from the total disaster to the unexpected welcome surprise. Despite this, the traditional risk management process as practised by the majority of project managers tends to concentrate almost exclusively on the potential negative effects of uncertainty. As a result of this focus, considerable effort is spent on identifying and managing threats, while opportunities tend to be overlooked or at best addressed reactively (or "opportunistically"?).

This paper argues that an integrated approach to management of both threats and opportunities can ensure that unwelcome negative effects are minimised while at the same time maximising the chances of exploiting unexpected positive effects.

2. One definition or two?

The suggestion that a common process can be used to manage both threats and opportunities has arisen from the inclusion of positive aspects in recent definitions of "risk". This in turn has provoked vigorous debate among the community of risk practitioners, with individuals and groups taking and defending strong opposing positions. The issue is whether the term "risk" should encompass both opportunities and threats, or whether "risk" is exclusively negative with "opportunity" being qualitatively distinct. There appear to be two options:

1. "Risk" is an umbrella term, with two varieties:
   - "opportunity" which is a risk with positive effects;
   - "threat" which is a risk with negative effects.

2. "Uncertainty" is the overarching term, with two varieties:
   - "risk" referring exclusively to a threat, i.e. an uncertainty with negative effects;
   - "opportunity" which is an uncertainty with positive effects.

There is no doubt that common usage of the word "risk" sees only the downside. Asking the man in the street if he would like to have a risk happen to him will nearly always result in a negative response—"Risk is bad for you." This is reflected in the traditional definitions of the word, both in standard dictionaries and in some technical definitions [1–6]. However, some professional bodies and standards organisations have gradually

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developed their definitions of "risk" to include both upside and downside. Several of these have definitions where the nature of the effect is undefined [7,8] and which could therefore implicitly encompass both positive and negative effects. Others are explicit in naming both opportunities and threats within their definition of "risk" [9–12]. The most recent of the standards to include both opportunity and threat within its definition of "risk" is the latest edition of the *Guide to the Project Management Body of Knowledge* (PMBoK®) published by the Project Management Institute (PMI®) in December 2000, which states that "Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on a project objective ... Project risk includes both threats to the project's objectives and opportunities to improve on those objectives." [13].

One might ask whether this matters, since "that which we call a rose, by any other name would smell as sweet" [14]. This author believes, however, that the decision to encompass both opportunities and threats within a single definition of risk is a clear statement of intent, recognising that both are equally important influences over project success, and both need managing proactively. It is argued that opportunities and threats are not qualitatively different in nature, since both involve uncertainty which has the potential to affect project objectives. As a result, both can be handled by the same process, although some modifications may be required to the standard risk management approach in order to deal effectively with opportunities.

3. One process or two?

Linked to the discussion about definitions of risk is a parallel debate about processes. Those who define "risk" as wholly negative and who see "opportunity" as something distinct naturally advocate separate processes for risk management and opportunity management. Conversely those who view "risk" as a common term encompassing both opportunities and threats accept the possibility of managing both in an integrated manner through a common process. For example, the PMI PMBoK® defines risk management as "The systematic process of identifying, analysing, and responding to project risk. It includes maximising the probability and consequences of positive events and minimising the probability and consequences of negative events to project objectives." [13].

Despite this clear scope, the risk management process described in the PMI PMBoK® still tends to focus on management of threats, reflecting the common experience of risk practitioners who find it easier to identify potential pitfalls and problems than to look for hidden advantages or upsides. Other risk management processes which claim to recognise both positive and negative risks also appear to pay similar lip-service to opportunity management, failing to match their broad inclusive definition with a process that copes explicitly with both types of risk [8].

In addition to the theoretical point that if opportunity and threat are two varieties of the same thing, they should be managed together, the use of a common process has several practical advantages. The first is simply to ensure that opportunities are indeed identified and managed. A separate "opportunity management" process is likely to be seen by hard-pressed project managers as an additional burden, and as such it may not receive appropriate attention. If, on the other hand, opportunities are handled by a risk management process which already exists, the additional overhead is minimised. Secondly, the risk management mindset encourages identification of uncertainties which might affect objectives, and leads the project manager to look for ways of addressing these proactively. While the need to spot and neutralise or minimise threats is clear, it is less natural to spend time looking out for unplanned opportunities. A common process can deal with positive uncertainties in the same way as negative ones, extending the familiar risk management approach. A third advantage is one of increased efficiency—a single process dealing with two types of issue will be more efficient than two separate processes.

However, if the existing risk management process is to be extended to allow opportunities to be managed alongside threats, some changes will be required. The remainder of this paper suggests where such modifications should be focused.

4. Process modifications

In order to structure the discussion, it is necessary to use a particular risk management process as an illustration of how opportunity management can be integrated. For this paper the risk process described in the PMI PMBoK® is used [13], although the principles can be applied equally to any other risk process. The PMI risk process includes six phases: risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, and risk monitoring and control. Each phase of this risk process is considered in turn, to identify whether changes are required in order to include opportunities explicitly.

4.1. Risk management planning

This initial phase of the risk process ensures that project objectives are clearly stated and understood, and focuses the risk process around the specific requirements of the particular project, documenting the results in a Risk Management Plan. It is clearly important before

embarking on risk identification for the objectives of the risk management process to be agreed. In addition, it is necessary to define roles and responsibilities, methodology and approach, review and reporting frequency, etc. The Risk Management Plan forms an integral part of the project management plan, defining how risk management will be undertaken for this project.

This phase needs no major changes to cope with opportunity management, since it merely defines the process to be followed. If specific opportunity-focused techniques are to be employed however, as outlined later, these should be included at this phase. It may also be useful to state explicitly that the risk management approach for this project is intended to deal with both opportunities and threats, since as discussed earlier, this is not common practice and may therefore need emphasising at project inception to ensure that project participants know what is expected.

4.2. Risk identification

A large number of techniques exist for risk identification, such as brainstorming and workshops, checklists and prompt lists, questionnaires and interviews, Delphi groups or Nominal Group Techniques, and various diagramming approaches (cause–effect diagrams, systems dynamics, influence diagrams, etc.). These include creativity techniques and those which draw on previous experience, and group approaches as well as methods for individual use. There is no single "best method" for risk identification, and an appropriate combination of techniques should be used.

Each of the commonly used risk identification techniques listed above could in theory be employed equally effectively to identify opportunities as well as threats. However, the experience of most project teams is to focus on negative issues when using these methods. As a result, there is a natural resistance or reluctance to broaden the technique to include upside risks—indeed force of habit may make it virtually impossible for participants to think of anything other than threats when their routine risk identification method is used. As a result, it may be helpful to employ additional approaches to risk identification, which can be introduced specifically as broader techniques. Three such methods are outlined here.

SWOT Analysis. This involves use of a workshop setting to identify organisational strengths and weaknesses as well as opportunities and threats specific to the project. The normal creativity techniques associated with brainstorming can be used, but the workshop is structured into four sessions, two of which explicitly seek to expose positive aspects (organisational strengths and project opportunities). The order of identification (strengths before weaknesses, opportunities before threats) also helps to overcome the natural tendency to focus on the negative. [It should be noted that proper use of this technique includes an "analysis" stage, relating strengths and weaknesses to opportunities and threats, and prioritising outputs for further action. In most cases however, groups merely perform a "SWOT Identification", with no analysis.]

Constraints and assumptions analysis. Assumptions record a decision about the likely outcome of a future uncertainty, whereas constraints define limits within which the project must operate. It is common for assumptions to be optimistic ("assume the best case"), and such assumptions can be tested as potential risks, since a false assumption could pose a threat to the project. This approach could be extended to test whether stated constraints might be relaxed, in which case an opportunity might be identified to facilitate achievement of project objectives or enhance project deliverables.

Force field analysis. This technique is widely used in strategic decision-making to identify positive and negative influences on achievement of objectives. It would be simple to adopt and adapt this approach to identification of project risks, by determining factors which would oppose project success (threats) as well as those which would facilitate it (opportunities). Some of the techniques of value management might also be modified in a similar way to enable potential enhancements to be identified as well as potential problems.

4.3. Qualitative risk analysis

Identified risks are assessed qualitatively to determine their likelihood and potential effect on project objectives, allowing risks to be prioritised for further attention. The primary technique for this is the Probability–Impact Matrix, where the probability and impacts of each risk are assessed against defined scales, and plotted on a two-dimensional grid. Position on the matrix represents the relative significance of the risk, and high/medium/low zones may be defined, allowing risks to be ranked.

This approach can be used for assessing threats and opportunities, although it is hard to visualise how a single Probability–Impact Matrix can clearly show both, since the "Impact" scale would need to reflect both positive and negative effects. Some practitioners overcome this by using two grids, with one for threats (negative impacts) and another for opportunities (positive impacts). In each case, high-probability/high-impact risks are prioritised, since these are either "show-stopper threats" which must be avoided if possible or "golden opportunities" which must be exploited if possible.

One modification of the double Probability–Impact Matrix might be useful, involving rotating the opportunity half as shown in Fig. 1. This allows key threats and opportunities to be visualised by focusing on the so-called "Arrow of Attention". The size of this wedge can

be increased if the organisation is more risk-averse or if more effort is available for risk management.

4.4. Quantitative risk analysis

Quantitative analysis seeks to quantify the combined effect of risk on project objectives, using tools such as sensitivity analysis, decision trees and Monte Carlo analysis. These involve building a model of the whole project or key elements, reflecting identified uncertainty into the model, and analysing the combined effect on project outcome using statistical simulations. The aim is to determine the overall level of risk exposure associated with a project, exposing areas of particular risk, and assisting in development of appropriate responses.

All of the common quantitative techniques can be used to take account of both the positive and negative effects of uncertainty, since they involve estimating ranges of values for variables (such as duration, cost, resource requirement, etc.). The best case value in the range (or minimum or optimistic) should include the effect of identified opportunities in reducing activity time or cost, whereas the worst case (maximum, pessimistic) estimates include the effects of identified threats. If ranges fully reflect both identified opportunities and threats, then the standard commonly used quantitative analytical techniques can be applied to determine the effect of all uncertainty on project objectives, including both upside and downside risk.

4.5. Risk response planning

The risk response planning phase exists to develop responses to identified risks which are appropriate, achievable and affordable. Owners are also allocated to each risk response, to be responsible for its implementation and for monitoring its effectiveness. Risk responses are usually grouped according to their intended effect on the risk being treated. It is common to use four such groupings, or risk strategies [15]:

1. *Avoid*—seeking to eliminate the uncertainty by making it impossible for the risk to occur (i.e. reduce probability to zero), or by executing the project in a different way which will achieve the same objectives but which insulates the project from the effect of the risk (i.e. reduce impact to zero).
2. *Transfer*—identifying another stakeholder better able to manage the risk, to whom the liability and responsibility for action can be passed.
3. *Mitigate*—reducing the size of the risk in order to make it more acceptable to the project or organisation, by reducing the probability and/or the impact.

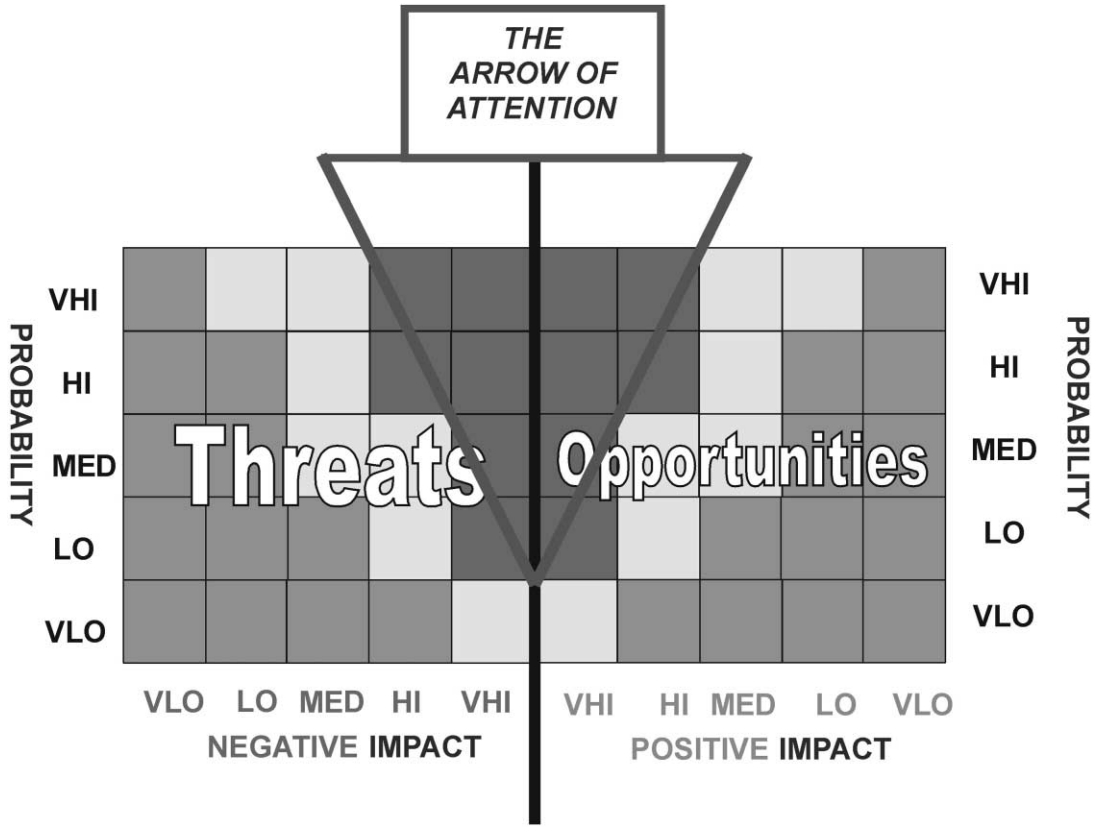

Fig. 1. Double Probability–Impact Matrix for opportunities and threats.

4. *Accept*—recognising that residual risks must be taken, and responding either actively by allocating appropriate contingency, or passively doing nothing except monitoring the status of the risk.

The common strategies of *avoid, transfer, mitigate* and *accept* as described here are clearly only appropriate for dealing with threats. No project manager would wish to "avoid" an opportunity, or "mitigate" its probability and/or impact. New strategies are therefore required for responding to opportunities. It is suggested that these can be derived from the threat strategies with which project teams are familiar, by generalising the approach taken for threats to make it suitable for opportunities.

The four strategies proposed for responding to identified opportunities are as follows:

1. *Exploit*—this parallels the "avoid" response, where the general approach is to eliminate uncertainty. For opportunities, the "exploit" strategy seeks to make the opportunity definitely happen (i.e. increase probability to 100%). Aggressive measures are taken which seek to ensure that the benefits from this opportunity are realised by the project.
2. *Share*—the "transfer" response allocates ownership to a third party best able to deal with the threat. Similarly, a "share" strategy for opportunities seeks a partner able to manage the opportunity, who can maximise the chance of it happening and/or increase the potential benefits. This will involve sharing any upside in the same way as "transfer" involves passing penalties.
3. *Enhance*—the opportunity equivalent of "mitigating" a threat is to "enhance" the opportunity. "Mitigation" modifies the degree of exposure by reducing probability and/or impact, whereas "enhancing" seeks to increase the probability and/or the impact of the opportunity in order to maximise the benefit to the project.
4. *Ignore*—the "accept" strategy takes no active measures to deal with a residual threat, other than including it in the project baseline with appropriate contingency. In the same way, minor opportunities can also be "ignored", adopting a reactive approach without taking explicit actions.

The risk response planning phase is very important since decisions are taken in this phase which directly affect the risk exposure of the project. As a result, it is particularly important for this phase also to deal effectively with opportunities in addition to threats, if the associated benefits are to be realised by the project and the organisation.

4.6. Risk monitoring and control

The final phase of the risk management process aims to monitor the status of identified risks, identify new risks, ensure the proper implementation of agreed responses and review their effectiveness, as well as monitoring changes in overall project risk exposure as the project progresses. Risk review meetings may be held to assess the current status of risks to the project, and project review meetings should include status reports from the project team on key risks and agreed responses. The effectiveness of the risk process itself should also be reviewed to ensure that it is meeting the risk management needs of the project.

The approach adopted for this phase should apply equally to management of opportunities and threats, and no modifications are proposed. The importance of this phase must not be underestimated however, since many organisations fail at this point in the process by not following through on agreed actions.

5. Conclusion and summary

There is no doubt that projects face a broad array of uncertainties which have the potential to affect achievement of their objectives. It is also clear that some of those uncertainties would be beneficial if they occurred, although there are also many sources of potential harm. Risk management practitioners are increasingly recognising that the definition of "risk" as "an uncertainty that can affect objectives" encompasses both opportunities and threats, although there is an ongoing debate about terminology. Whatever definitions are used however, it is undeniable that both threats and opportunities should be managed proactively by the project manager. This raises the question of whether a single process can deal effectively with both.

This paper has outlined a number of simple extensions to the standard risk management process which would ensure that opportunities and threats can be handled together by the same process. In particular, some new risk identification techniques are proposed which explicitly look for upside uncertainties, a double Probability–Impact Matrix is suggested as a powerful means of showing the relative importance of both threats and opportunities, and new response strategies for opportunities are outlined which build on those commonly used for threats.

This paper concludes that a single extended risk management process can effectively handle both opportunities and threats, and that there is therefore no need for a separate process focused exclusively on opportunities. By modifying the process as proposed, management of opportunities can become integral to risk management, giving them equal status with threats, and seeking to manage them proactively in order to achieve the benefits for the project and the organisation. Risk practitioners claim to believe that uncertainty has both a positive and a negative side—applying the approach outlined here will enable them to put those claims into practice.

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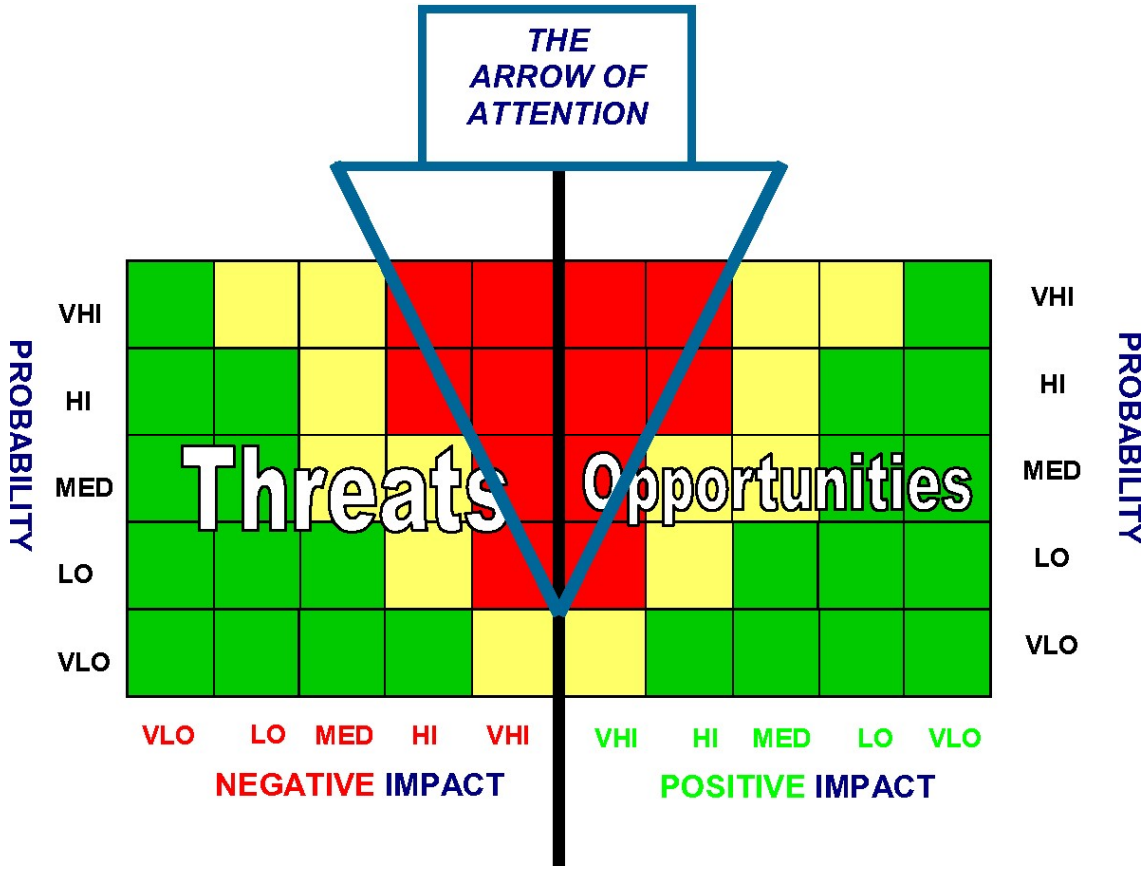
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