Module 4 MGMT 6062

Qualitative Risk & Opportunity Analysis

This helps determine the <u>initial</u> priority to resolve risks

Objectives of Qualitative Analysis

Initial assessment

- Subjective assessment of the extent to which risks might happen and opportunities could appear
  - Discuss critical issues with the team & internal stakeholders
  - Consult 'experts' and trusted sources as appropriate

Ask Questions

- Where could we find more information, and how? Who can help?
  - What tools do we need, to analyze the information?
- What cognitive biases might exist, and how might we resolve them?

Decisions

- What should we do next …
  - Stop the project?
  - Continue the project?
  - Review related projects and operating activities?
- And if we continue…
  - Which risks & opportunities also need Quantitative analysis?
  - To what extent can the Project Sponsor help us get commitment from others & particularly from senior management, to help complete this analysis?

Qualitative Methods of assessing risks & opportunities

Expert insight & experience

- Baseline method, based on seasoned experience and judgement
  - Not necessarily supported by quantitative methods

Compliance or Consulting audit

- Builds on internal expertise through conducting a structured audit
  - May entail comprehensive checklists & comparisons to standards

Simple stratification

- Classification based on 'low, medium, high' ratings
  - Guided by internal expertise, research and modelling

Weighted scoring

- 'Multicriteria decision making' models: various criteria are defined, and assigned 'weights' according to relative importance
  - Elements are 'scored' on each criteria; 'scores' are then added or multiplied together to determine a 'total score' for each element
- May be helpful to start a conversation, however, it obscures the underlying assumptions and does not well consider high-negative-outcome situations
- **NOT RECOMMENDED**!!

Expert insight and experience

What is an 'expert'?

- An 'expert' is someone who has demonstrated mastery of a subject, and is seen by others as credible
  - They also provide reviews, mentor and guide teams; and may ensure best practices are followed

Consulting experts

- Experts could be 'consulted' for their ideas and insights
  - Some will insist they be consulted
  - To avoid controversy & debate, the PM or a Facilitator might also be requested to get anonymous inputs
- However, this places the onus on the Project Manager to 'get it right'; but the PM is NOT likely the expert, nor is it their role

Formal Accountability

- On the Responsibility Assignment Matrix, it's usually better to give formal accountability to the 'expert' to provide their insights
  - They are obliged to make personal & professional commitment
  - They are seen as the expert; and will likely want to contribute!
  - It is clear to everyone else, who must explain what, and why

Compliance / Review Audit

Purpose

- Audits conducted for Compliance reasons
  - Legal, regulatory and certification requirements

External audits

- Reviews conducted by <u>external</u> auditors – examples:
  - Required legal compliance with Financial Statement reporting
  - Whether Asset Management system complies with ISO 55001

Internal audits

- Reviews conducted by <u>independent internal</u> auditors – example:
  - Required compliance with company policies
  - Such auditors usually report directly to the Board of Directors

Process

- Auditor conducts a review and provides findings
  - Auditor must remain independent and avoid any conflict of interest; auditor does NOT have authority to recommend
  - Management, not the auditor, determines any actions

Consulting Audit

Purpose

- Audits conducted for 'Substantive' reasons, not for 'Compliance'
  - Improve processes

External audits

- External Consultant contracted for specialized skills – examples:
  - Provide business advice; implement business change
  - Improve compliance with regulatory requirements
  - Consultants usually hired by top management

Internal audits

- Internal staff are engaged to help improve the business - examples:
  - Internal Project Manager asked to evaluate effectiveness of PMO, and report findings to the VP who created the PMO
  - Internal auditors evaluate compliance with defined process
  - Auditors report directly to their supervisor, not the Board

Process

- Auditor conducts a Review; recommends actions; may implement actions. Auditor is helping to run the business & _not_ independent
  - Management still decides whether to proceed with actions

Risk Priority Number: a common method, <u>NOT recommended!</u>

In this example:

1. Events are 'scored' in two dimensions: a 'score' of 1 is low, a 'score' of 5 is high
   - Probability or frequency of event occurrence
   - Consequence or 'severity' of a possible negative outcome, if the event occurs
2. 'Scores' are multiplied together to determine RPN
3. The resultant RPNs are further colour-coded, to emphasize priority to resolve
   - RPN # 1 – 6: low, green. 7 – 14: medium, yellow. 15 – 25: high, red.

High RPN = High priority to resolve		Consequence / severity				
		1	**2**	**3**	**4**	**5**
Probability / Frequency	**5**	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5

???

Events which don't happen very often, but could have serious negative outcomes, should **definitely not be treated as low priority!**

If colour-coding reports, be mindful that not everyone can see colour

High RPN = High priority to resolve	Consequence / severity				
	1	**2**	**3**	**4**	**5**
5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5

(Probability / Frequency)

High RPN = High priority to resolve	Consequence / severity				
	1	**2**	**3**	**4**	**5**
5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
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1	1	2	3	4	5

(Probability / Frequency)

Here we have adjusted the matrix with colour-coding to put more focus on the severity of negative outcome & priority to resolve

- Severity ≥ 3: at least Yellow (medium)
- Severity ≥ 4: must be Red (high)

This is the same matrix, seen from the (simulated) perspective of a reader with Deuteranopia: colour-blindness.

- Green and Red look pretty much the same
- This is not at all helpful for the reader

Initial Risk Assessment

Initial assessment

- Probability/Frequency: likelihood that an event will occur
  - More likely = higher priority to resolve
- Visibility: extent to which hazard, event or outcome is detectable
  - Less visible = higher priority to resolve
- Severity: magnitude of loss or damage
  - Higher negative outcome = higher priority to resolve
- Tolerance: Whether loss or damage exceeds ability to withstand it
  - 'Acceptable Risk' might NOT be acceptable …

Evidence & Insight

- 'Evidence-based'
  - Fact before Opinion. Ask Why.
- 'Practice-based evidence'
  - Yes, expert judgement helps
- 'Expert judgement'
  - Again, just Ask Why

Refining Risk Priority to Resolve: essential considerations

'Swiss Cheese'

- Hazards A, B or C by themselves might not lead to significant issues, but what if hazards A, B & C all exist at once?
  - When multiple hazards exist, this is colloquially referred to as the 'Swiss Cheese' effect; the 'holes in the cheese' all align: bad things are almost inevitable!

'Falling Dominos'

- If undesirable event D has already happened, then undesirable events E & F could be more likely
  - This 'chain of events' is colloquially referred to as the 'Domino' effect: one bad thing leads to another, and quickly!

FOL Content > Getting Started and Resources > Risk Management Tools > Risk management matrix

Risk			Risk assessment: severity (magnitude) of negative outcome			
Hazard	Event	Alternative negative outcomes that could result	How severe is the resulting negative outcome? Explain why.	Initial priority (1,2,3) to review, based on severity	Does the severity exceed risk tolerance? Explain why.	Revised priority (1,2,3) to review, based on risk tolerance
		PESTLE Alternative # 1				
		PESTLE Alternative # 2				
		PESTLE Alternative # 3				

Hazards, events, negative outcomes are identified; please see techniques in Module 3 techniques. PESTLE analysis is described in Module 2). Now, we determine priority to resolve.

1. First, assess the severity of the negative outcome
   – The more severe, the higher the priority to resolve
2. Next, assess whether severity exceeds risk acceptance (our preferences) & tolerance (our limits)
   – If severity exceeds tolerance, then by definition, the risk must has a high priority to resolve.

Risk			Risk assessment: probability or frequency of event happening, and extent to which it can be detected			
Hazard	Event	Alternative negative outcomes that could result	What is the probability or frequency of the event? Explain why.	Initial priority (1,2,3) to review, based on probability or frequency	If (or when) the event happens, can we easily see it happen? Explain why.	Revised priority (1,2,3) to review, based on visibility
		PESTLE Alternative # 1				
		PESTLE Alternative # 2				
		PESTLE Alternative # 3				

3. Third, assess the probability or frequency of the negative outcome
   – If it's more likely or frequent, the higher the priority to resolve
4. If the event (or the hazard) cannot be readily detected; we might not know it exists
   – This may increase the priority to resolve. We do not want any surprises.

The next step is to assess Opportunities (and any further risks which might result)

Initial Opportunity Assessment

Initial assessment

- Probability/Frequency: likelihood that a desirable event will occur & benefits might result
  - More likely = higher priority to review
- Visibility: extent to which event or benefit is detectable
  - If event or benefit is hard to detect, priority to review may increase, but not necessarily; the 'status quo' might be good enough
- Benefit: magnitude of positive outcome
  - If benefit drives better outcomes: priority to review may increase, but again, not necessarily
  - It depends whether pursuing the benefits may also incur costs

Evidence & Insight

- As with Risk Assessment
  - Validate and get more information as appropriate

FOL Content > Getting Started and Resources > Risk Management Tools > Opportunity management matrix

Opportunity			Opportunity assessment: What and how large is the Benefit of the Opportunity?			
Situation	Event	Alternative benefits (positive outcomes)	How large is the resulting positive outcome? Why?	Initial priority (1,2,3) to review, based on benefit size?	Does benefit exceed 'status quo'? Explain	Revised priority (1,2,3) based on added benefits?
		PESTLE Alternative # 1				
		PESTLE Alternative # 2				
		PESTLE Alternative # 3				

Situations, events, possible benefits identified (Module 3). As with Risk assessment, now we determine priority to pursue any new opportunities.

1. First, assess the size of the benefit. This is the NET benefit; because benefits may also incur costs!!
   – The larger the net benefit, the higher the priority to pursue the opportunity
2. Next, assess whether benefits exceed what will already be delivered by the project
   – If the added benefits are not significant, the priority to pursue may decrease

FOL Content > Getting Started and Resources > Risk Management Tools > Opportunity management matrix

Opportunity			Opportunity assessment: probability or frequency of event happening, and extent to which it can be detected			
Situation	Event	Alternative benefits (positive outcomes)	Probability or frequency of the event? Why?	Initial priority (1,2,3) to review, based on probability or frequency	If event happens, can we easily see it? Explain why.	Revised priority (1,2,3) to review, based on visibility
		PESTLE Alternative # 1				
		PESTLE Alternative # 2				
		PESTLE Alternative # 3				

3. Third, assess the probability or frequency of the net benefit
   – If it's more likely or frequent, the higher the priority to resolve
4. If the event or if the benefits cannot be readily detected
   – This may decrease the priority to pursue the opportunity .. Perhaps the benefits are not as significant as we first thought

Now, we confirm the overall priority to resolve risks or pursue opportunities

Overall Priority to Resolve: essential considerations

Risks

1. Complete the initial Risk Assessment
2. Refine the Risk priority to resolve
   - Based on severity, probability/frequency, visibility
3. Further assess whether the 'swiss cheese' or 'domino' effect exists
4. Determine overall priority to resolve
   - For purpose of this course, simple stratification suffices
   - Priority 1 = high, priority 2 = medium, priority 3 = low
5. Determine Risk Response (Module 5)

Opportunities

1. Complete the initial Opportunity Assessment
2. Refine the Opportunity priority to resolve
   - Based on net benefit, probability/frequency, visibility
3. Further assess whether the Opportunity might also create Risks
   - If yes: the net benefits of pursuing opportunity may be LESS
4. Determine overall priority to resolve
   - Again, for purpose of this course, simple stratification suffices
   - Priority 1 = high, priority 2 = medium, priority 3 = low
5. Determine Opportunity Response (Module 5)

Next Steps....

Stop the project

- Stop the project:
  - How might we prove whether the risks are big, or opportunities insufficient?
  - Discuss with the Project Sponsor.

Continue the project

- Continue the project: resolve risks, pursue opportunities):
  - What changes might we need to make, on scope, cost, time, benefits, strategy?
  - Refine the business case.

Review Programs

- What other projects and operating activities might be affected?
  - We are all connected; the 'project management office' can help
  - Refer reviews to the company's Planning process

Continue risk review

- Which risks & opportunities also need Quantitative analysis?
  - Per above: some do not need further review
  - The larger risks & opportunities MUST be quantified so that we can determine the appropriate response ... next Module 5

End Module 4