Consequence/likelihood matrix

Risk matrix is a "tool for ranking and displaying risks by defining ranges for consequences and likelihood".

Type of method

The matrix method is a way of combining qualitative or semi-quantitative estimates of the consequences of a risk and the likelihood of the specified consequence occurring.

Description

A matrix can be used to give a visual display of risk sources, uncontrolled levels of risk (also called the raw or absolute levels of risk), controlled levels of risk (also called the current level of risk) and treated levels of risk (also called the target level of risk).

Resources and capability

Inputs

The risk criteria for each impact on objectives must be scaled; typically a five-point scale is used. Common criteria cover financial, occupational health and safety and environmental impacts. The likelihood scale is similarly scaled.

With care and thought, it is possible to develop a matrix that shows both positive and negative consequences.

Method

When developed, a user first identifies a consequence descriptor that best describes the worst-case scenario and then identifies the likelihood of that consequence.

Outputs

A visual display of selected risks.

Nature and degree of uncertainty

The matrix is simple to use and simplistic in output. A matrix is a useful tool to aid preliminary risk analysis and rank risks for more detailed analysis and evaluation. It can be used to show changes in level of risk over time for a named risk.

If a matrix is not developed for the specific context it is to be used in it may give misleading results. Scales can be ambiguous with mismatches between dissimilar scales (eg, financial and occupational health and safety impacts).

Complexity

Low complexity.

Quantitative output

Semi-quantitative only.

Application

The following matrix must be modified and customised to the specific circumstances of your organisation before use.

The ranges developed earlier should be used as the consequence and likelihood scales.

Risk identification and analysis form

Administration

Group or team		Risk owner	
Date completed		Review date	
Outcome or objective under consideration			

Name the risk

What could stop us from achieving our outcome or objective? Name the risk			
Initiating event or circumstance	→	Potential consequence?	Risk impact? (circle)
			OHS / environmental / assets / business activities / legal compliance / reputation

What are the controls that are currently in place?

Name (see internal assurance manual)	Key control?	Effectiveness?	Owner?
	Yes No		
	Yes No		
	Yes No		
	Yes No		
	Yes No		
Contingency plan (details)	Yes No		
Crisis communication plan	Yes No		
Business continuity plan	Yes No		

Key:

Effectiveness: Uncontrolled / Poor/ Reservations/ Satisfactory/Most satisfactory

Risk analysis

Risk severity if the controls failed?				Risk severity with current controls		
Consequence	Likelihood	Uncontrolled risk level	Acceptable? Yes or no	Consequence	Likelihood	Controlled risk level

Key:

Consequence: Insignificant/Minor/Moderate/Major/Catastrophic	Likelihood: Almost Incredible/Rare/Unlikely/Possible/Almost Certain

For controlled risks that are extreme or high, controls should include contingency, crisis communication and business continuity plans.

If the risk offers opportunities or the level of risk is not acceptable, what risk treatment options exist?

		Risk analysis with each option						
Option	Name and description of option	Consequence	Likelihood	Treated risk level	Likely cost?	Target completion date?	Approved?	Assigned to?
1							Yes No	
2							Yes No	
3							Yes No	
4							Yes No	
5							Yes No	

Communication and consultation

Do you need a communication plan for this risk – who needs to be told, when, what, how?

Do you need to consult about this risk – who, when, what, how?

Monitor and review

How will maintenance of the controls and implementation of any treatments be monitored?

Review your analysis and records; confirm they are correct.

Set a review date for the risk – see page 1.

Finally …

Please record your results in the risk register

Almost certain	Medium	High	High	Extreme	Extreme
Possible	Medium	Medium	High	High	Extreme
Unlikely	Low	Medium	Medium	High	Extreme
Rare	Low	Low	Medium	Medium	High
Almost incredible	Negligible	Low	Low	Medium	High
	Insignificant	Minor	Moderate	Major	Catastrophic

Extreme: report to Board | High: report to CEO | Medium: report to General Manager | Low: report to budget holding manager

File name: RM 200 Consequence Likelihood matrix.doc