Risk identification: how and how many?

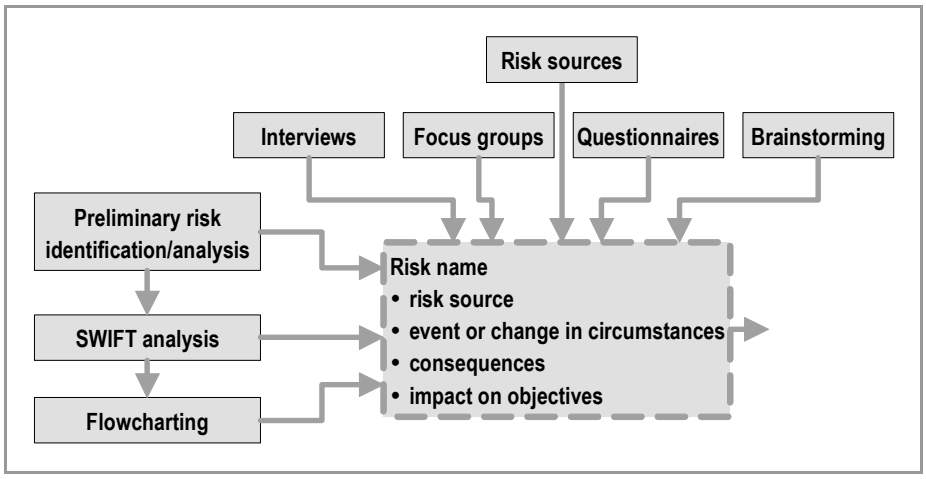
Risk is "the effect of uncertainty on objectives" which begs the question: "What are the objectives?". Leaving that question for another short article, the questions here are "how should risks be identified?" and "how many risks should be identified?".

How?

The table on the following page is adapted from international standard ISO 31010 *Risk Management – Risk Assessment Techniques* and Risk Management Ltd training notes. In Australia and New Zealand, ISO 31010: 2009 is being adapted to become SA/SNZ HB 31010 *Risk Management – Risk Assessment Techniques*, due to be published in 2012.

The flowchart below suggests how some can be combined to "triangulate" results for reliability.

> *Triangulation is the use of two or more independent sources of data or data collection methods within one study in order to help ensure that the data are telling you what you think they are telling you.* (Saunders, Lewis, & Thornhill, 2007, p. 614)



The output should be (for each risk) a cause/consequence statement with enough supporting text to show context-related issues, initiating events, events/changes in circumstances, likely impacts on objectives.

How many risks?

To enable effective analysis of a risk we need to identify potential events, consequences, or a combination of these and how they might affect the achievement of objectives.

How many? See paragraph 5.4.2, AS/NZS ISO 31000.

> *All significant causes and consequences should be considered.*

What is significant? This is a question requiring several iterations through risk analysis and objectives.

Uncertainty

"Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood".

Therefore, think widely and do not reject what might seem bizarre (eg, a global financial crisis, multi-fatality workplace event, major terrorist attack, several major earthquakes + 8,000 aftershocks).

A possible reading on uncertainty is Bammer & Smithson (2008).

References

Bammer, G., & Smithson, M. (2008). *Uncertainty and Risk*. London, UK: Earthscan Publications Ltd.
Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students* (4th ed.). Harlow, UK: Pearson Education Ltd.

Risk management methods and tools

0 = not applicable 1 = applicable 2 = very applicable	Risk management process stage →	Communicate and consult	Context	Risk assessment process: Risk identification	Risk assessment process: Risk analysis			Risk assessment process: Risk evaluation	Risk treatment	Monitor and review
Method					Consequence	Likelihood	Level of risk			
Critical path analysis or critical path method		0	0	1	2	2	2	0	0	0
Environmental risk assessment		0	0	2	2	2	2	2	1	0
Gap analysis: Pareto analysis		0	0	2	1	1	1	0	0	0
HACCP (hazard analysis and critical control point)		0	0	1	0	1	0	1	1	1
Interviews (structured, semi-structured, etc)		1	2	2	0	0	0	0	1	1
MORT chart		0	0	2	2	0	0	0	1	0
PEST analysis		0	2	2	1	1	1	0	1	1
Preliminary risk analysis		0	0	1	0	0	0	0	0	0
Professional judgement		1	1	1	1	1	1	1	1	1
Questionnaires		1	2	1	1	1	1	0	0	1
Reliability centred maintenance		0	0	2	2	2	2	2	2	1
Risk breakdown structure		0	0	1	1	0	0	0	0	0
Risk indicators		0	0	2	0	0	0	0	0	0
Risk register/database		0	0	2	1	1	1	0	1	2
Risk taxonomy		0	0	2	0	0	0	0	0	0
Root cause analysis		0	0	2	0	0	0	0	1	0
Scenario analysis/ scenario planning/ horizon scanning		1	1	2	0	0	0	1	1	2
Stress testing		0	0	2	1	1	1	0	0	0
Structured what-if (SWIFT)		1	1	2	2	2	2	2	1	0
SWOT analysis		1	2	2	1	1	1	0	1	0
Visualisation techniques										
• Flowcharting/process mapping and documentation		0	1	2	1	1	1	0	1	1
Workshops										
• Brainstorming/"thought shower" events		2	2	2	0	0	0	0	2	0
• Delphi techniques		2	2	1	0	0	0	0	2	0
• HAZOP studies		2	1	1	0	1	0	0	1	0
• Focus groups		2	2	1	0	0	0	0	1	1

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