

Project Risk Management

See Chapter 11 in the PMBOK® Guide.

Project Management, A Systems Approach to Planning, Scheduling, and Controlling, Seventh Edition by Harold Kerzner, PHD. See Risk in the index.

Kepner-Tregoe's work on Problem Analysis, Potential Problem Analysis and Decision Analysis, etc. See their web site at www.kepner-tregoe.com.

The WBS on Page 128 of the PMBOK® Guide has changed dramatically from the previous edition and is now as follows:

1. Risk Management Planning
2. Risk Identification
3. Qualitative Risk Analysis
4. Quantitative Risk Analysis
5. Risk Response Planning
6. Risk Monitoring and Control

Comments:

We have always admired the entrepreneurial, risk taking approach in the PMBOK® Guide. The second sentence on page 127 states "It includes maximizing the probability and consequences of positive events and minimizing the consequences of adverse events to project objectives."

Projects are inherently risky because they are unique. If you don't like risk, don't do projects. Your boss has to remember that the person who never made a mistake, never made anything! "Management by Exception" (MBE) discussed above, only works if there is sufficient trust in the organization to concentrate on the things that went wrong and how they will be fixed. We have seen first hand the dramatic difference that MBE can make. Companies that adopt it generally have great morale, team spirit and productivity, less bureaucracy and thinner reports, successful projects, etc. It is very difficult to change a culture that unduly punishes honest mistakes. It may be better to leave and find a company with more potential.

You can easily customize Microsoft Project to do much of the arithmetic on pages 136 and 137 of the PMBOK® Guide for you. E.g. you use one of the Number fields to put in the Impacts for each activity. We generally just put in Moderate 0.2, High 0.4 and Very High 0.8. Use the next Number field to enter Probability. We generally just enter 0.5, 0.7 or 0.9. Use a third number field to calculate the product or Risk Score e.g. 0.8 Impact * 0.9 Probability gives a Risk Score of 0.72 shown in the top right hand corner on Fig 11-3. We can then use the Microsoft Project filters to find just the activities with Total Float less than 5 days and Risk Score greater than 0.18. The software can also turn on a colored flag to highlight risky activities.

Decision Tree Analysis as shown in Figure 11-6 can be great for brain storming. "Solving the decision tree indicates which decision yields the greatest expected value ... when all the uncertain implications, costs, rewards, and subsequent decisions are quantified." Don't take these solutions at face value though. Look for solutions that can make a huge difference to the expected value.

In the example, the cost of building a new plant is \$120 (million?) vs. \$50 to upgrade the existing plant. If there is a strong product demand, the payoff will be \$200 for a new plant vs. \$120 for the

upgraded plant. If there is a weak product demand, the payoff will be \$90 for a new plant vs. \$60 for the upgraded plant. At face value, the pay offs are as shown in Scenario A and you should choose to upgrade the existing plant. However, note the sensitivity of the calculation. If it costs \$70 to upgrade the existing plant instead of \$50 the decision is reversed as shown in Scenario B below. It is so easy to look at different scenarios in project management or spread sheet software.

DECISION	COST	PAYOFF	PAYOFF - COST	PROB	PRODUCT	NET PATH VALUE
SCENARIO A						
Build New Plant	120	200	80	0.65	52	
Upgrade Existing Plant	50	120	70	0.65	45.5	
	50	60	10	0.35	3.5	49
						Choose
SCENARIO B						
Build New Plant	120	200	80	0.65	52	
	120	90	-30	0.35	-10.5	41.5
						Choose
Upgrade Existing Plant	70	120	50	0.65	32.5	
	70	60	-10	0.35	-3.5	29
						Choose

We became great believers in Kepner Tregoe’s Potential Problem Analysis years ago when a brain storming session revealed a risk that could be avoided for a cost of \$7,000. This decision saved us \$3 million a few weeks later.

Litigation has become a huge risk in the USA for many industries e.g. construction in public agency work. See our comments on Mediation under Claims Resolution support.

The PMBOK ® Guide talks about Avoidance, Transference, Mitigation and Acceptance on pages 142 and 143.

One example of transference is to contract the work to others which is covered in the following Project Procurement Management Chapter.