

Overview

Comprehensive Risk Register with Cost Analysis

CRRCA®



CVR/IT Consulting LLC

Introduction

Comprehensive Risk Register with Cost Analysis (CRRCA®) is a full featured risk analysis tool that takes “risk register” to a new level. Use this tool in any project where control of budget and schedule are of paramount importance, or to minimize threats to enterprise, populace or environment. CRRCA®:

- Supports all aspects of project risk management
- Includes advanced functions such as extended cost and time analysis, proactive and contingency response planning, development of contingency reserves, and analysis of risk plan effectiveness
- Includes separate registers for Threats and Opportunities
- Provides a level of analysis and reporting not found in any other Risk Register
- Is based on a spreadsheet format that is easy to use
- Is available at very low cost



CRRCA[®] Features (1)

1. Supports the full range of Risk Management activities described in the PMBOK[®]
2. Provides separate registers for threats and opportunities
3. Includes a Risk Ranking Matrix with customizable probability and impact values and dynamic risk priority thresholds
4. Provides PERT assistance for time and cost estimates
5. For threats, provides automatic calculation of response plan effectiveness, e.g. decrease in risk exposure; decrease in total risk cost in money and time
6. For opportunities, includes automatic calculation of net gain / loss
7. Automatically calculates total cost of proactive responses
8. Automatically calculates time and cost Contingency Reserves



CRRCA[®] Features (2)

9. Summary sheets provide an overview of Threat, Opportunity and overall Risk Management cost and effectiveness
10. Worksheet layout supports the natural flow of risk management work
11. Threat detectability chart reveals significant threats that could arrive without warning
12. Threat and Opportunity scores are color coded to indicate risk importance
13. Includes step by step instructions and extensive pop-up help
14. Customizable dropdown lists
15. Instructions are color-coded to relevant sections of the risk registers



Instructions

Instructions provide guidance on how to use CRRCA® as part of your risk management practice.

1. Separate instructions are provided for Threat and Opportunity Management
2. Instructions point out the primary questions to be answered during each step of risk management
3. Color and number of each instruction heading map to risk register headings
4. Instructions are preformatted for easy printing
5. You can modify the instructions to fit your specific risk management methodology



Instructions

In this slide the first 4 of 9 sections are shown for Threat Management. Colors and numbers map to the risk register headings.

Engage in Threat Management

1. Threat Identification - What threats exist in the project? Which aspect of the project could each threat affect?

- a. As threats are identified, enter information about them in the Risk Identification section of the Threat Register. Be certain to give every threat a unique I.D. as shown.
- b. Be certain to use many risk identification tools and techniques such as Risk brainstorming, Risk Breakdown Structure, Risk checklists, etc.
- c. Identify the Risk Type of each risk. By default a risk can be a project, business or business value risk, but you can modify that list.
- d. Identify Impact Areas for each threat. Select from a list of Triple Constraint factors, and then select from a list of sources of risk that you create. That list could be derived from your Risk Breakdown Structure and could include, for example, technology, budget, staff and more.

2. Qualitative Risk Analysis - How severe are the threats? Which threats warrant further analysis?

- a. For each threat fill in every field in the Qualitative Risk Analysis section
- b. Be very clear about the root cause of any threat. You may not be able to manage the threat effectively if you do not know root cause.
- c. When you finish this analysis unProtect the worksheet, select all rows with risk information, sort on the Status (e.g. Observe) and Threat Score columns, then reProtect the worksheet. This will put all of the most important threats at the top of the worksheet.

3. Extended Risk Analysis - For each risk, if you take no proactive action, what will the risk cost (e.g. in money, time, other)?

- a. Perform extended threat analysis on any threat whose Threat Score is above your predetermined threshold.
- b. Document the level of Risk Urgency and Risk Event Timing.
- c. Use the Threat_PERT-Calcs worksheet to determine the cost and time impact of reacting to an **unmanaged** risk event (i.e. where no proactive actions have been taken). Document any other impacts of a risk event unrelated to time or cost of a reactive response.

4. Proactive Threat Response Planning - How can you eliminate or minimize the threat? What will that cost?

- a. For each risk above your threshold, and for select High Impact / Very Low Probability events, document your preferred proactive response strategy (if you have one).
- b. Determine the monetary and time cost that the proactive action will take. For Threats, use the Threat_PERT-Calcs worksheet.
- c. Indicate the type of Response you will use, e.g. Avoid or Mitigate Impact.



Dynamic Priority Chart

The Priority Chart allows you to set the threshold for High and Medium risk to a level that fits the risk tolerance of your customer. Features include:

1. The default values for Impact (1 through 100) and Probability (.001 to 0.9) can be changed
2. The chart allows for very high impact and very low probability scores to account for rare but possible disastrous events (e.g. tsunami; reactor meltdown)
3. Threshold for Threat and Opportunity can be set independently
4. Threshold for High and Medium risk can be set independently
5. Scores in the priority grid change color to match thresholds
6. Settings in this chart determine numeric values and colors used in the Threat and Opportunity registers



Priority Chart - Overview

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Priority Chart

Project Name:

Threat Priority Thresholds

High	4.5
Medium	2

Opportunity Priority Thresholds

High	4.5
Medium	2

Instructions: You can customize your Risk Score values by doing the following:

1. Enter Impact and Probability Scores (or use default provided)
2. Enter Priority Threshold scores for Threats
3. Enter Priority Threshold scores for Opportunities

Color coding indicates priority of Risks and Opportunities.
When you enter risk impact and probability values on the ThreatRegister and OpportunityRegister tabs, the scores and colors shown in the Risk Score columns will reflect the values you set on this page.

Threats	Opportunities
 = High Priority	 = High Priority
 = Medium Priority	 = Medium Priority
 = Low Priority	 = Low Priority

		Threats							Opportunities				
Impact	100	0.1	1	10	30	50	70	90	8.1	6.3	4.5	2.7	0.9
	20	0.02	0.2	2	6	10	14	18	6.3	4.9	3.5	2.1	0.7
	9	0.009	0.09	0.9	2.7	4.5	6.3	8.1	4.5	3.5	2.5	1.5	0.5
	7	0.007	0.07	0.7	2.1	3.5	4.9	6.3	2.7	2.1	1.5	0.9	0.3
	5	0.005	0.05	0.5	1.5	2.5	3.5	4.5	0.9	0.7	0.5	0.3	0.1
	3	0.003	0.03	0.3	0.9	1.5	2.1	2.7	0.9	0.7	0.5	0.3	0.1
	1	0.001	0.01	0.1	0.3	0.5	0.7	0.9	0.9	0.7	0.5	0.3	0.1
			0.001	0.01	0.1	0.3	0.5	0.7	0.9	0.9	0.7	0.5	0.3
		Probability											

The Priority Chart allows separate High and Med risk thresholds for Threats and Opportunities.

Values entered here are used in the Risk Registers.



Settings for High Risk Tolerance

		Threats						
Impact	100	0.1	1	10	30	50	70	90
	20	0.02	0.2	2	6	10	14	18
	9	0.009	0.09	0.9	2.7	4.5	6.3	8.1
	7	0.007	0.07	0.7	2.1	3.5	4.9	6.3
	5	0.005	0.05	0.5	1.5	2.5	3.5	4.5
	3	0.003	0.03	0.3	0.9	1.5	2.1	2.7
	1	0.001	0.01	0.1	0.3	0.5	0.7	0.9
		0.001	0.01	0.1	0.3	0.5	0.7	0.9
		Probability						

Threat Chart with threshold values set for high risk tolerance:

High = 6.3 and above

Medium = 2.7 to 6.0

Settings for Low Risk Tolerance

		Threats						
Impact	100	0.1	1	10	30	50	70	90
	20	0.02	0.2	2	6	10	14	18
	9	0.009	0.09	0.9	2.7	4.5	6.3	8.1
	7	0.007	0.07	0.7	2.1	3.5	4.9	6.3
	5	0.005	0.05	0.5	1.5	2.5	3.5	4.5
	3	0.003	0.03	0.3	0.9	1.5	2.1	2.7
	1	0.001	0.01	0.1	0.3	0.5	0.7	0.9
		0.001	0.01	0.1	0.3	0.5	0.7	0.9
		Probability						

Threat Chart with threshold values set for low risk tolerance:

High = 2.7 and above

Medium = 0.7 to 2.5

Threat Register Features

1. A full complement of risk data can be recorded for each threat
2. Supports advanced functions (e.g. impact of risk planning on risk exposure)
3. Separate worksheet supports development of time and cost estimates
4. Drop down lists are fully customizable
5. Records change in Probability and Impact caused by proactive actions
6. Automatically calculated data appear in shaded cells
7. Every column heading provides mouse-over help
8. Cells with formulas are locked for protection. However, the spreadsheet can be unlocked as needed
9. Sections are color coded to match instructions



Threat Register - Overview

Threat Register										Project Name: Year Project	Supplemental Contingency Percent: 25%																
See instructions provided on the Information tab. Further instructions																											
1. Risk Identification			2. Qualitative Risk Analysis				3. Extended Risk Analysis				4. Prioritize Threat Response Planning				5. Residual Risk Analysis		6. Contingency Plan [Residual Response]										
Threat ID	Threat Description	Risk Type	Impact Score [Causal]	Impact Score [BSSE]	Threat Cause	Threat Probability	Threat Impact	Threat Score [P x I]	Threat Control	Defect or Issue	Description of Response to Residual Risk Event	Labor Hours needed for Residual Risk Event	Monetary Cost of Residual Risk	Impact on Project Budget	Other Impact Information	Timing	Threat Response	Description of Potential Action	Type of Response [Workshop]	Prevention Plan Hours [Workshop]	Prevention Plan Monetary Cost	Prevention Plan Budget Duration	Residual Threat Probability	Residual Threat Impact	Residual Threat Score [P x I]	Contingency Plan [Residual Response]	
Y12345	Example 1: Risk description with a detailed description of the threat and its potential impact on the project.	Project	Crit	Severe	High	Critical	High	High	High	Failure to complete the project on time due to resource constraints.	1,000	\$10,000.00	High	High	High	Q1 2012	High	High	High	High	High	High	High	High	High	High	High
Y12346	Example 2: Risk description with a detailed description of the threat and its potential impact on the project.	Project	Crit	Severe	High	Critical	High	High	High	Failure to complete the project on time due to resource constraints.	1,000	\$10,000.00	High	High	High	Q1 2012	High	High	High	High	High	High	High	High	High	High	High
Y12347	Example 3: Risk description with a detailed description of the threat and its potential impact on the project.	Business	Crit	Severe	High	Critical	High	High	High	Failure to complete the project on time due to resource constraints.	100	\$1,000.00	Low	Low	Low	Q1 2012	High	High	High	High	High	High	High	High	High	High	High

- This slide presents a bird's eye view of the Threat Register.
- The first 5 of 9 sections are shown. Each section will be described during this presentation
 - Column heading numbers and colors map to instructions
 - Data are entered into white cells
 - Color cells contain automatically calculated values

Control Block	
Do not remove any cells from the Control Block	
Threat Priority Threshold	High 4.5
High Score	2
White cells below red drop down list values	
Impact Score	100
Major Disaster	20
Critical	5
Very Serious	2
Serious	5
Minor	5
Threat Probability Values	
Very High	0.3
High	0.7

Tables located below the data area (partially shown) control content of drop down lists in the worksheet

Risk Identification Features

The Risk Identification section of the Threat Register is used to record basic information about each threat. It provides the following features:

1. Allows for each risk to have a unique ID
2. Provides guidance on how to write an effective risk description
3. Supports entry of Risk Type (e.g. Project risk, Business risk)
4. Supports entry of two views of Impact Area (i.e. impact on Triple Constraint; impact on aspects of the project)
5. Mouse over help is included in each column heading
6. Drop down lists are fully customizable
7. The color of column headings make clear which columns are used in Risk Identification



Risk Identification (1)

Threat Register				Project Name: Your Pr		
See instructions provided on the Introduction tab.				Further instructions are provided below.		
1. Risk Identification					2. C	
Threat ID	Threat Description	Risk Type	Impact Area (Triple Constraint)	Impact Area (RBS)	Impact Area (RBS) indicates the source of risk as defined by your Risk Breakdown Structure (RBS). Default values are provided but you can change these with your own by modifying the Control Block below the data area.	
Delete sample data before using this worksheet						
T120510a	If the project team has difficulty using the new technology, there could be a cost overrun due to extra work hours, plus a substantial delay in implementation which would result in a big financial penalty	Project	Cost	Resources	Staff do not have training or experience in this technology	High
T120615a	If vendor fails to deliver we will have to build it ourselves	Project	Schedule	Vendor	Vendor has a poor track record for delivering on time	Med
T120615b	Sample data	Business	Scope	Organization	Sample data	Very Hi

All risk identification data go here. Mouse over help for Impact Area is shown (upper right)

Risk Identification (2)

Threat Register					Project Name: Your Project	
See instructions provided on the Introduction tab.			Further instructions are provided below.			
1. Risk Identification					2. Risk Assessment	
Threat ID	Threat Description	Risk Type	Impact Area (Triple Constraint)	Impact Area (RBS)	Threat Cause	Threat Probability
Delete sample data before using this worksheet						
T120510a	If the project team has difficulty using the new technology, there could be a cost overrun due to extra work hours, plus a substantial delay in implementation which would result in a big financial penalty	Project	Cost	Resources	Staff do not have training or experience in this technology	High
T120615a	If vendor fails to deliver we will have to build it ourselves	Project	Schedule	Vendor	Vendor has a poor track record for delivering on time	Medium
T120615b	Sample data	Business	Scope	Organization	Sample data	Very High
				Organization		
				Technology		
				Vendor		
				Regulations		
				Resources		
				Requirements		
				General Population		
				Environment		

Drop list for Impact Area (RBS) can contain elements from your Risk Breakdown Structure

Qualitative Analysis Features

The Qualitative Analysis section of the Threat Register examines the approximate level of risk in each threat. It provides the following features:

1. Probability, Impact and Detectability are all supported
2. Verbal measures are used (e.g. High, Medium, Low) rather than numbers; this is more intuitive for many stakeholders
3. Verbal measures are converted to numeric scores for calculation of Threat Score
4. Threat Score value and color are based on Priority Chart threshold settings
5. Entry of Root Cause and Trigger data are supported
6. Threat ID and Description are shown at all times even as the view of the spreadsheet scrolls to the right



Qualitative Analysis

Project Name: Your Project

2. Qualitative Risk Analysis

Threat Cause	Threat Probability	Threat Impact	Threat Score (P x I)	Trigger Event	Detectability	
Staff do not have training or experience in this technology	High	Critical	6.3	Obvious trigger. If the team has difficulty with the new technology it will be apparent by failure to complete tasks and constant slippage of the schedule	High	Pr pr co
Vendor has a poor track record for delivering on time	Med	Serious	2.5	No trigger. We won't know they are late until they are late.	Low	Do lots of work we don't want to do
Sample data	Very High	Minor	0.9	None	Low	Sample data
			0			
			0			
			0			

Detectability is a measure of how much advance warning you will have when the threat actually happens. Threats with low detectability are inherently more dangerous. Detectability scores are numeric as follows:
 1 = High detectability
 3 = Medium detectability
 5 = Low detectability

All qualitative analysis data are entered here. Mouse over help for Detectability is shown (upper right)

Threat Detectability Chart (1)

This chart plots threat detectability against Threat Score. It provides a means of identifying the truly dangerous threats, i.e. those high probability, high impact threats that give no warning before they actually occur. Features include:

1. Low Risk Scores are on the left; High Risk Scores are on the right
2. Highly detectable risks are at the bottom; Poorly detectable risks are at the top
3. Threats in the top right quadrant are the most dangerous, i.e. significant threats with low detectability.
4. Dangerous scores in the Risk Score x Detectability column appear in red.
5. Chart data are updated automatically as data in the Threat Register is changed



Extended Analysis Features

The Extended Analysis section of the Threat Register focuses on the likely impact of unmanaged risk. It provides the following features:

1. A full description of the impact of the threat event is captured
2. Impact on monetary cost, labor hours and project delay (days) are entered separately
3. Estimates for Labor Hours and Monetary Cost are derived from detail entered into a companion worksheet
4. Description of non-quantitative impact is supported
5. Entry of risk urgency and timing is supported



Extended Analysis

3. Extended Risk Analysis

Quantitative Analysis: Impact of Unmanaged Risk

Description of Response to Unmanaged Risk Event	Labor Hours needed for Unmanaged Risk (Worksheet A)	Monetary Cost of Unmanaged Risk (Worksheet B)	Impact on Project Duration (Days)	Other Impact Information	Timing	Threat Urgency
Put more people on the work; provide training; bring in a consultant	1,000	\$100,000.00	10.0	The client might decide the assigned staff are not adequate and demand a new project team. Our reputation as a tech company could be damaged.	Build Phase	Low
Do lots of work we don't want to do	2,000	\$200,000.00	20.0	none	Execution phase	Med
Sample data	500	\$50,000.00	5.0	Sample data	Design phase	High
		\$0.00				
		\$0.00				
		\$0.00				

Extended analysis data are entered here. Estimates of monetary cost and labor hours are developed in a companion worksheet and copied here automatically.



Proactive Planning Features

The Proactive Threat Response section of the Threat Register records risk management actions that can be taken BEFORE the risk event occurs. It provides the following features:

1. Details of one or more proposed proactive action(s) are recorded
2. Type of response data (i.e. Avoidance; Mitigation; Transfer; Acceptance) are used in subsequent worksheet functions
3. Estimates for Labor Hours and Monetary Cost are derived from detail entered into a companion worksheet
4. Time and cost data are used in subsequent budget planning and risk plan effectiveness calculations



Proactive Planning

4. Proactive Threat Response Planning					
Threat Urgency	Description of Proactive Action	Type of Response	Proactive Plan Labor Hours (Worksheet C)	Proactive Plan Monetary Cost (Worksheet D)	Proactive Plan Project Duration Impact (Days)
Low	We must use the new technology - cannot Avoid Provide 3 days advanced training for 3 staff members. Allow time to gain experience with the new technology. Hire a consultant to provide guidance as needed	Mitigate P & I	100	\$10,000.00	1
Med	Negotiate terms in the contract that the vendor will pay for any late fee	Mitigate Impact	200	\$20,000.00	2
High	Sample data	Transfer	50	\$5,000.00	0.5
		Avoid		\$0.00	
		Mitigate Probability		\$0.00	
		Mitigate Impact		\$0.00	
		Mitigate P & I		\$0.00	
		Transfer		\$0.00	
		Accept		\$0.00	
				\$0.00	

Proactive Response Planning data are entered here. The drop list for Type of Response is shown.

Residual Risk Analysis Features

The Residual Risk Analysis section of the Threat Register analyses any risk that remains after proactive actions have been taken. It provides the following features:

1. Measures of the risk that remains after proactive actions are taken are entered here
2. Revised estimates of Probability and Impact are used to calculate a Revised Threat Score
3. Revised Threat Score is one indicator of the effectiveness of proactive action (e.g. score is reduced from 6.3 to 3.5; color changes from red to yellow)
4. When available, specific probability after proactive action can be entered as a numeric value
5. Revised probability score is used in subsequent Contingency Reserve calculations



Residual Risk Analysis

See instructions provided on the Introduction tab.					
1. Risk Identification		5. Residual Risk Analysis			
Threat ID	Threat Description	Residual Threat - Probability	Probability after Proactive Action	Residual Threat - Impact	Revised Threat Score (P x I)
Delete sample data before using this worksheet					
120510a	If the project team has difficulty using the new technology, there could be a cost overrun due to extra work hours, plus a substantial delay in implementation which would result in a big financial penalty	Med	50%	Very Serious	3.5
120615a	If vendor fails to deliver we will have to build it ourselves	Med	50%	Moderate	1.5
120615b	Sample data	Med	50%	Minor	0.5
			0%	Major Disaster	0
			0%	Minor Disaster	0
			0%	Critical	0
			0%	Very Serious	0
			0%	Serious	0
			0%	Moderate	0
			0%	Minor	0

Residual Risk data are entered here. The drop list for Residual Threat Impact is shown (lower right)

Contingency Planning Features

The Contingency Planning section of the Threat Register focuses on development of plan that will be implemented if the threat event actually occurs. It provides the following features:

1. Details of contingency action(s) (i.e. actions taken after the threat event has occurred) are recorded
2. Estimates for the Labor Hours and Monetary Cost required to carry out the contingency actions are derived from detail entered into a companion worksheet
3. Time and cost estimates entered here are used in subsequent Contingency Reserve and Total Cost of Managed Risk calculations



Contingency Planning

Post - Proactive Response Planning & Analysis				
6. Contingency Planning (Reactive Response)				7a. Analysis
Contingency Plan (Reactive Response)	Contingency Plan Labor Hrs (Worksheet E)	Contingency Plan Monetary Cost (Worksheet F)	Contingency Plan Impact on Project Duration (Days)	Contingency Plan Impact on Project Duration
If the project team is still having trouble with the new technology, give the consultant additional time to do some of the work.	100	\$10,000.00	1.0	If it will delay delivery
Invoice vendor for amount of late fee	200	\$20,000.00	2.0	none
Sample data	50	\$5,000.00	0.5	Sample data
		\$0.00		
		\$0.00		
		\$0.00		

Contingency Plan Impact on Project Duration is an estimate of the number of work days (as elapsed time) that must be added to the Project Duration to carry out all Contingency actions. Note that additional work will only prolong the project if it falls on the Critical Path.

Contingency Planning data are entered here. Mouse over help for Contingency Plan Impact on Project Duration is shown (upper right)



Additional Response Planning

Additional Residual Risk Planning and Analysis is supported (columns not shown). This includes:

1. A description and estimate of any cost in time or money that cannot be avoided by proactive and contingency actions (e.g. you have mitigated the amount of delay and your contingency response minimized monetary cost, but there is still a delay)
2. A description and estimate of any cost in time or money associated with secondary risks (i.e. risks that arise as an unplanned consequence of proactive or contingency actions)
3. Unavoidable costs and the cost of secondary risks are included in subsequent calculations on the Total Cost of Managed Risk



Effectiveness of Risk Planning (1)

A large section of the Threat Register is devoted to an analysis of the effectiveness of Risk Planning. There are three parts, one each for monetary cost, labor hours and project delay. This section provides Contingency Reserves, and reveals the extent to which proactive and contingency plans are cost effective. The following values are calculated automatically:

1. Time and monetary cost of residual risk
2. Contingency Reserve for money, labor hours and project duration
3. The extent to which risk plans have reduced risk exposure to cost overruns, increased labor hours and project delays
4. When managed risk costs more than unmanaged risk, values appear in red



Effectiveness of Risk Planning (2)

8a. Analysis: Impact of Risk Planning on Monetary Cost

Complete Monetary Cost of Residual Risk	Monetary Contingency Reserve	Total Monetary Risk Exposure of UnManaged Threat	Total Monetary Risk Exposure of Managed Threat	Reduction in Monetary Risk Exposure	% Reduction in Monetary Risk Exposure	Total Monetary Cost of Managed Threat	Reduction in Total Monetary Cost	% Reduction in Total Monetary Cost
\$30,000.00	\$15,000.00	\$70,000.00	\$25,000.00	\$45,000.00	64.29%	\$40,000.00	\$60,000.00	60.00%
\$60,000.00	\$30,000.00	\$100,000.00	\$50,000.00	\$50,000.00	50.00%	\$80,000.00	\$120,000.00	60.00%
\$15,000.00	\$7,500.00	\$45,000.00	\$12,500.00	\$32,500.00	72.22%	\$20,000.00	\$30,000.00	60.00%
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	

All of these columns are automatically calculated. The impact that risk plans have on the monetary cost of threats is shown here. Impact on labor hours and project duration is also calculated (not shown here).

Risk Monitoring and Control (1)

The Risk Monitoring section of the Threat Register focuses on recording metadata about identified risks (e.g. date recorded; assigned to) and tracking risk actions actually taken. It provides the following features:

1. Date that each risk plan is approved is recorded
2. Each risk can be assigned to an individual
3. The status of the risk can change over time. Default statuses include Observe, Active, Closed and Workaround
4. Risk actions can be recorded as they are taken
5. Additional information can be included in the Comments section



Risk Monitoring and Control (2)

9. Risk Monitoring and Control				
Date of Plan Approval	Assigned to	Status	Record of Risk Actions	Comments
03-Jun-12	Joe Smith	Active	6/15/08: Team attended training	5/11/08: Customer is satisfied that the team will be adequate with the training to be provided. They will also cover the cost of a consultant.
10-Jul-12	Laura Jones	Observe	Sample data	Sample data
15-Jul-12	Sample data	Observe	Sample data	Sample data
		<div style="border: 1px solid black; padding: 2px;"> <ul style="list-style-type: none"> Active <li style="background-color: #e0e0e0;">Observe Closed Workaround blank blank </div>		

All Risk Monitoring information is recorded here. The drop down list for risk Status is shown.

Support for Estimation Features

A companion worksheet is used to support development of the time and cost estimates used in the Threat Register. Features include:

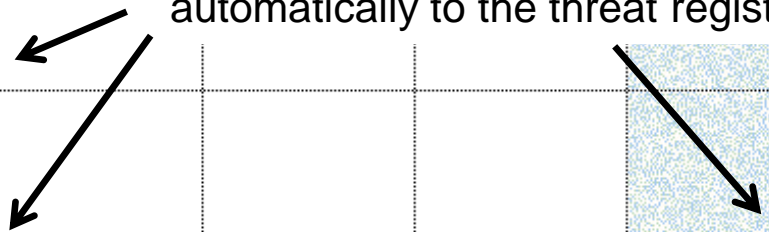
1. Threat information (e.g. ID, description) is carried over from the Threat Register to the companion worksheet. This information is displayed at all times.
2. A description of where the monetary cost and/or labor hours come from can be entered
3. A guestimate or calculated value of cost or time can be entered
4. As an alternative, the PERT tool can be used for time estimates, or a breakdown of costs can be used for estimates of monetary impact
5. The value generated in the companion worksheet is automatically transferred to the Risk Register
6. Extensive mouse-over help is provided in the companion worksheet



Support for Estimation

A - Time Impact of Unmanaged Threat (Labor Hrs)					
Either use Guestimate or PERT Estimate, but not both					
Describe all sources of labor for Unmanaged Threats	Guestimate or Calculated Value	PERT Estimate for Unmanaged Threat Labor Hours			
		Optimistic	Most Likely	Pessimistic	PERT Estimate
We expect the team to spend time learning the technology and building numerous proof of concept prototypes					
Design, build and test	1,000				
Sample data	500	1,200	1,500	3,200	2,067

These values are transferred automatically to the threat register



This is the portion of the companion worksheet that supports development of estimates of the Labor Hours impact of Unmanaged Threats (Worksheet A). A guestimate is provided for the first and third threats; PERT is used for the second estimate.



Overview of Threat Management (1)

This function provides an overview of the impact of risk planning on the monetary cost, labor hours and project delay associated with all managed project threats. Features include:

1. 14 numeric measures for each of monetary cost, labor hours and project delay
2. An explanation of each measure is provided
3. Mouse over help explains how the value was derived

Measures include:

1. The total monetary cost of proactive actions (This amount should be included in the project budget.)
2. The total labor hours and project delay caused by proactive actions (This should be included in the schedule)
3. Total Contingency Reserves in money and time for all threats
4. Overall impact of risk planning (e.g. reduction in risk exposure to threats)



Overview of Threat Management (2)

Monetary Cost		
Maximum Increase in Project Monetary Cost from Unmanaged Threats:	\$350,000.00	This is the estimated total increase in project monetary cost if all threats materialized and no proactive actions were taken in advance to manage them.
Likely Increase in Project Monetary Cost from Unmanaged Threats:	\$215,000.00	This is how much project cost is likely to increase due to unmanaged threats, taking the probability of each threat into account. It is your total monetary risk exposure to all identified unmanaged threats.
Total Monetary Cost of Proactive Actions - Threats:	\$35,000.00	This is the total cost of all planned proactive threat management actions. Since it is certain that these actions will be taken, this amount should be included in the project budget.
Total Monetary Cost of Contingency Actions - Threats:	\$35,000.00	This is the estimated cost of all planned contingency (i.e. reactive) threat management actions, assuming that ALL threats happen. This does NOT include the cost of secondary risks or other residual risks.
Total Monetary Cost of Secondary Risks - Threats:	\$35,000.00	This is the estimated cost of managing secondary risks that could occur as a result of proactive and contingency threat management activities for all managed threats.
Total of Unavoidable Monetary Costs - Threats:	\$35,000.00	This is the estimated total unavoidable monetary cost from all threats even though risk management actions, both proactive and reactive, have been taken. For example, there could be a penalty for late delivery that could not be avoided.
Total Estimated Monetary Cost of all Residual Risk - Threats:	\$105,000.00	This is the estimated monetary cost of all risk that remains after all proactive threat management actions have been taken. This includes the estimated cost of contingency actions, secondary risks and unavoidable costs for all managed threats.
Monetary Contingency Reserve for Threats:	\$65,625.00	This is the amount of money that should be set aside in the Monetary Contingency Reserve. This amount adds to but is separate from the planned project budget. It includes ALL threat costs that remain after proactive threat management actions have been taken, and adds an additional amount for unmanaged threats (i.e. threats in the threat register with low Threat Scores) and unanticipated threats (i.e. unknown threats that are not in the threat register).

This is part of the summary for Monetary Cost (8 of 14 values)

Opportunity Register Features

The Opportunity Register is specifically designed to support the management of opportunities. It complies fully with PMBOK response strategies for opportunity, but takes the concept much further.

Features of the Opportunity Register include:

1. A full complement of risk data can be recorded for each opportunity
2. The language of all column headings, mouse-over help, etc. is focused on management of opportunity, rather than threat
3. Provides automatic calculation of Contingency Reserve for money and time (i.e. resources needed if an opportunity becomes available)
4. Provides automatic calculation of Net Benefit, i.e. the gain (or loss) that results when cost of opportunity management is taken into account
5. Allows for loss in one area in order to gain elsewhere (e.g. add to project cost in order to save time)



Opportunity Register

For a summary of Opportunity costs and benefits, see the Opportunity Overview tab

4. Risk Response Planning (Proactive Response)

Proactive Action (Response Strategy)	Proactive Plan Monetary Cost	Proactive Plan Labor Hrs	Proactive Plan Impact on Project Duration (Days)	Potential Financial Benefit	Potential Labor Hours Benefit	Potential Beneficial Impact on Project Duration (Days)	Other Beneficial Impact
Get approval from the manager of the other department to use the software. Get approval from the vendor.	\$10,000.00	100	1.0	\$100,000.00	1000	10.0	Could improve collaboration with the other department
Sign agreement with vendor to be an "early adopter". This will allow a substantial discount.	\$20,000.00	200	2.0	\$200,000.00	2000	20.0	Test
Sample data	\$5,000.00	50	0.5	\$50,000.00	500	5.0	Sample data

This screen shot highlights the difference in Proactive Response planning between threat and opportunity. Compare this with the earlier slide for Threat Proactive Planning.



Overview of Opportunity Mgt (1)

This function provides an overview of the impact of risk planning on the monetary, labor hours and project duration benefits associated with project opportunities. Features include:

1. All managed opportunities are included in this summary.
2. 9 numeric measures specific to opportunity are provided for each of monetary cost, labor hours and project duration
3. An explanation of each measure is provided

Measures include:

1. The total monetary cost of proactive actions (this amount should be included in the project budget)
2. The total labor hours and project delay required for proactive actions (this should be included in the schedule)
3. Contingency Reserves in money and time for all opportunities
4. Net benefit considering both cost of managing opportunities and gains derived from them



Overview of Opportunity Mgt (2)

Monetary Cost		
Maximum Monetary Gain from all Opportunities:	\$350,000.00	This is an estimate of monetary gain if all known opportunities were realized. This is strictly a measure of benefit, and it assumes that all proactive and contingency actions have been taken. However, funds required to implement proactive and contingency plans are ignored. Monetary gains (profits) and cost reductions can all be used to reduce overall project cost.
Likely Monetary Gain from all Opportunities:	\$225,000.00	This is how much monetary gain you are likely to obtain from opportunities, given their probability of realization. It is calculated as the Expected Monetary Value of the Maximum Reduction in Project Cost. This is strictly a measure of benefit; the cost of risk management is ignored.
Total Monetary Cost of Proactive Actions - Opportunities:	\$35,000.00	This is the total cost of all planned proactive actions for all managed opportunities. Since it is certain that these actions will be taken, this amount should be included in the project budget.
Total Monetary Cost of Contingency Actions - Opportunities:	\$35,000.00	This is the estimated cost of all planned contingency actions in support of all managed opportunities. This does NOT include the cost of secondary risks.
Total Monetary Cost of Secondary Risks - Opportunities:	\$35,000.00	This is the estimated cost of managing secondary risks that could occur as a result of proactive and contingency opportunity management activities for all opportunities.
Total Estimated Monetary Cost of all Residual Risk - Opportunities:	\$70,000.00	This is the estimated monetary cost to manage contingency plans and secondary risks after proactive actions are completed for all managed opportunities.
Monetary Contingency Reserve for Opportunity:	\$45,000.00	This is the amount of money that should be set aside in the Project Monetary Contingency Reserve. It includes all opportunity realization costs that remain after proactive actions have been taken, and takes into consideration the new probability of the opportunity becoming available (i.e. proactive actions can affect risk probability). This figure does not consider any possible monetary gain that could result from opportunities.

This is part of the summary for Monetary Cost (7 of 9 values)

Overview of Risk Management (1)

This function presents an overview of the impact of all threat **and** opportunity management, i.e. the net result of reduction in threat risk exposure and likely gains from managed opportunities.

You can use this summary as the basis for negotiation with management when requesting the funds and time needed to carry out risk management plans.

The overall effect is that active management of Opportunities can help to reduce the cost of Threat management.



Overview of Risk Management (2)

Features of the Risk Management Overview include:

1. All managed threats **and** opportunities are included in this summary
2. 9 numeric measures that summarize the impact of threat and opportunity management are provided for each of monetary cost, labor hours and project duration
3. An explanation of each measure is provided

Measures include:

1. Likely Net Change in Project Monetary Cost from Threats and Opportunities
2. Total Monetary Cost of all Proactive Actions - Threats and Opportunities:
3. Total Monetary Contingency Reserve for Project - Threats and Opportunities



Overview of Risk Management (3)

Monetary Cost		
Maximum Net Reduction in Project Monetary Cost from all Managed Opportunities:	\$245,000.00	This is the maximum estimated reduction in project cost that could result from all managed opportunities. It is the monetary benefit provided by the opportunities minus the cost of realizing them. Note: it is possible that the gain from opportunities will more than offset the cost of managing them, resulting in a net profit. When that occurs, that net profit can reduce overall project costs. However, it is possible to have a net increase in project monetary cost here (a Negative Gain seen here as a negative number) in order to realize a gain elsewhere (e.g. in time or quality).
Likely Net Reduction in Project Monetary Cost from Managed Opportunities:	\$145,000.00	This is the likely reduction in project cost that could result from all managed opportunities taking into account the probability that each opportunity will occur. It considers both financial benefit from opportunities and the cost to manage them. If this figure is positive there is a net profit and the cost of your project should decrease. If this figure is negative (a Negative Gain), there is a net loss and the cost of your project should increase. It is possible to plan for a net increase in project monetary cost here in order to realize a gain elsewhere (e.g. in time or quality).
Maximum Increase in Project Monetary Cost from Unmanaged Threats:	\$350,000.00	This is the estimated total increase in project monetary cost if all threats materialized and no proactive actions were taken in advance to manage them.
Maximum Increase in Project Monetary Cost from Managed Threats:	\$140,000.00	This is your total expected increase in project monetary cost if all threats were to materialize and you used your risk management plans to manage them.
Benefit from Threat Management: % Reduction in Total Threat Monetary Cost:	60.0%	This is the percent decrease in potential monetary cost across the entire portfolio of managed risks, i.e. the total savings possible if all threats were to materialize and you used your risk management plans to manage them.
Likely Increase in Project Monetary Cost from Managed Threats:	\$87,500.00	This is the likely increase in project monetary cost from all managed threats. It is the sum of proactive, reactive, unavoidable and secondary costs, taking into account revised threat probability after proactive responses have been completed. It is your total risk exposure to increased project cost.
Likely Net Change in Project Monetary Cost from Threats and Opportunities	-\$57,500.00	This is the likely net impact of all managed threats and opportunities on the overall monetary cost of the project. This cell is calculated as Cost of Threats minus Savings from Opportunities. If this cell is dark blue (negative number), there is a net cost savings and project cost should decrease. If this cell is red (positive number), you could expect an increase in project cost.

This is part of the summary for Monetary Cost. The blue cell indicates net gain.

Summary

The Comprehensive Risk Register with Cost Analysis (CRRCA®) is a full featured risk management tool. It can be used to:

1. Manage both Threats and Opportunities
2. Perform extensive analysis of identified risks
3. Understand the budget and time requirements of planned proactive risk management actions
4. Determine a reasonable figure for project Contingency Reserves
5. Establish effective management of your entire risk portfolio

CRRCA® is part of a package of risk management tools available at very low cost from this source:

http://www.cvr-it.com/PM_Templates/TemplateDetails2.html



About CVR/IT Consulting LLC

CVR/IT Consulting, established in 2002, provides guidance and support in the effective use of Project, Program, Portfolio Management and Business Analysis Technologies. The company provides professional consultation, training and tools in all matters related to Project Management and Business Analysis, such as:

- Implementation of governance structures and processes essential to effective Portfolio Management
- Establishment of a PMO that finds its own success solely in the success of its customers
- Delivery of flexible, customized PM and BA Methodologies and tools
- Assessment of organizational project, program, portfolio management and business analysis practice
- Training (or re-training) of the project workforce
- Implementation of Organizational Change to make it all work



Overview

Comprehensive Risk Register with Cost Analysis

CRRCA®



CVR/IT Consulting LLC