

# White Paper

## Enterprise Risk Management Program (ERMP)

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*The ideas and findings in this document are documented as a guideline for Risk Practitioners to use as a guide in an Enterprise Risk Management Program (ERMP) engagement.*

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## Introduction

The goal of this paper is to identify a general comprehensive approach for Risk Practitioners to use as a guide in implementing an Enterprise Risk Management Program (ERMP). Because the subject area of Risk Management is diverse and complex, this paper can not cover all the material in detail. Instead, it should serve as a general guide for Risk Practitioners.

## Acknowledgement

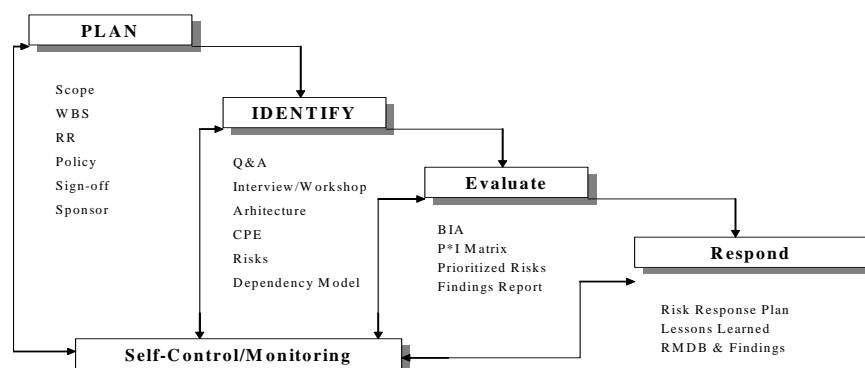
It should be noted that this is a living document that uses training materials and work experiences from well established companies such as JP Morgan Chase, PriceWaterhouseCoopers, NASDAQ Stock Market, and Northrop Grumman. The paper also references publications from PMBOK and J. Davidson Frame's "Managing Risk in Organizations".

## What is ERMP?

Enterprise Risk Management Program (ERMP) is a systematic way of collecting and managing risks, also known as uncertainties, in an organization. These risks are classified into various categories such as Strategic, Systems and Processes, Compliance, Financial, Political, and Project. All of these risk categories can be affected by internal and external events and each risk usually comes with its own unique level of probability and impact. At an enterprise level, Risk Practitioners can expect to find many concatenation risks and interdependency risks as well.

## How Does the Process Work?

The ERMP process generally can be covered using a PIER model. PIER represents Planning – Identifying – Evaluating – and Responding. Figure 1.00 below depicts the model and its related attributes.



Within the PIER model, a Risk Practitioner can choose to target a category to PIER away or to attack all categories together at an enterprise level. The important thing is to agree to a framework during the planning stage so that each party clearly understands the risk and its related categories to go after.

Each process within the PIER model should have its own entry and exit points. These entry and exit points must state in detail what the Risk Practitioner will need and what he or she will deliver. At an enterprise level, some companies have gone to great lengths in adding finer details to each entry and exit points to include Activities, Responsibilities, Ownership, Tasks by RACI model, and Lessons Learned. Under this guide, Risk Practitioners are encouraged to make their own judgment as to how detail your ERMP Pier model should be. Two examples are provided below as general guidelines. Figure 1.10 is a general model for Projects as outlined in the PMBOK.

**Figure 1.10 – PMBOK’s Project Management Overview**

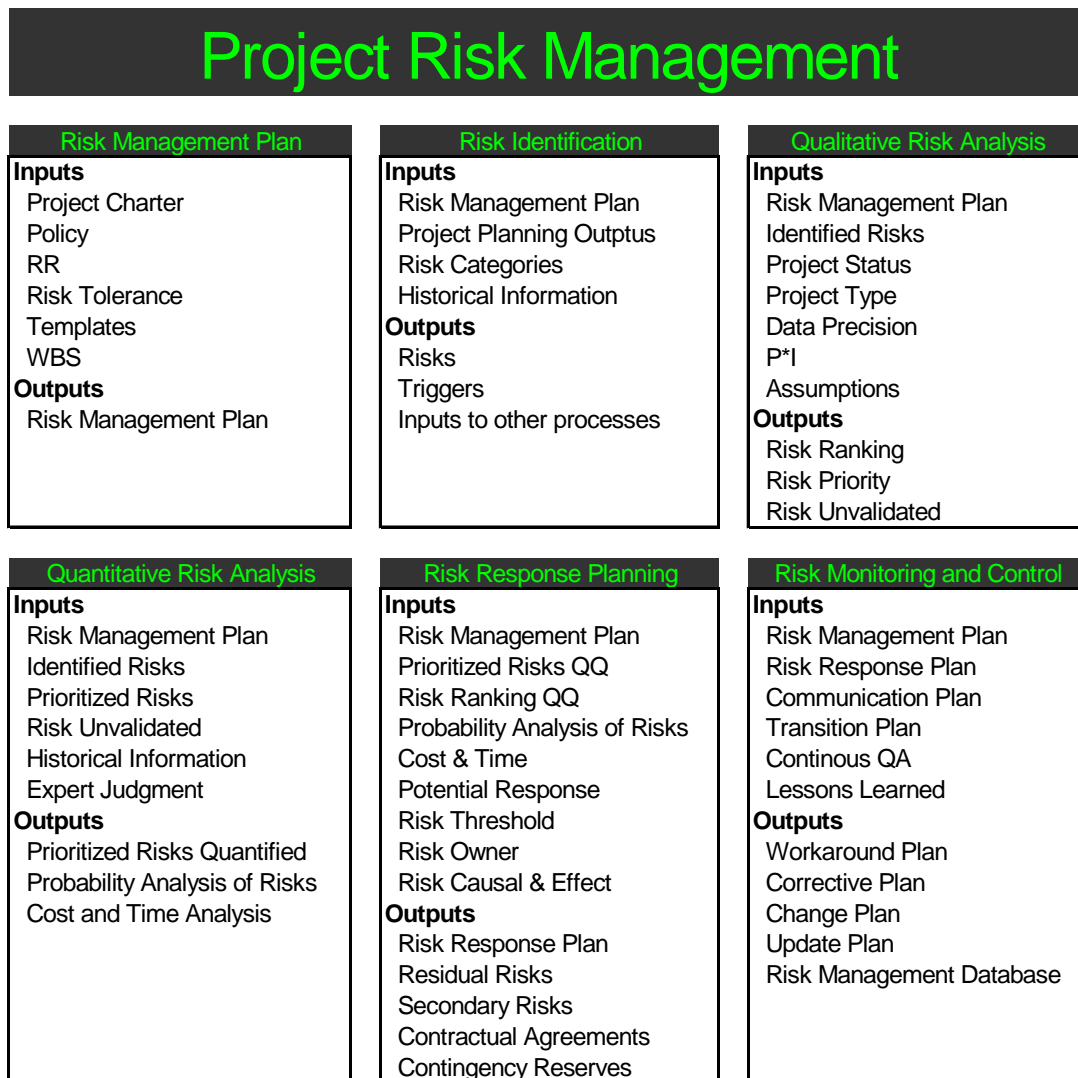


Figure 1.20 is a general model for the Analysis Phase of an ERMP modeled after TRW.

**Figure 1.20 – TRW’s RMCP Overview – Analysis Phase**

<p><b>Analyze Process Description:</b>          The Analyze Process is an integral, pivotal part of the Identify-Analyze-Plan Contingencies Cycle. The Analyze Process analyzes the technical, schedule, and cost impacts of an identified risk and determines the resulting risks in the criticality matrix, initial Operational Dependency Model, and business impacts. The first pass through this cycle begins with initial information from the Identify Process (RMDB, corporate goals, objectives, business areas and major business functions). The Analyze Process in this Cycle examines each risk in more detail and analyzes the business impacts of the identified risk. A Criticality Matrix is developed as part of this process to serve as a guide in prioritizing the risks. Insights gained from the Analyze Process are used in the Plan Contingencies Process to identify potential new risks and refine contingencies. This information is fed back into the Identify Process and the Cycle continues. Successive iterations of the Cycle focus on those risks that pose the greatest impacts to the business and the analysis typically becomes more quantitative in nature. The Cycle continues until an adequate degree of information and insight is achieved to make the optimal decisions regarding the risks. The Business Analyst under the direction of the Program Manager manages the Analyze Process.</p>		
<p><b>Roles</b></p>		
<p><b>Primary Responsibility:</b>          Business Analyst</p>	<p><b>Support:</b>          Project Team          Client Team          Risk Analyst          Risk Mgmt. Development Team</p>	<p><b>Recipient(s) of Output:</b>          Program Manager          Client Team</p>
<p><b>Inputs: [Identify Entry Criteria]</b></p> <ul style="list-style-type: none"> <li>• TRW process and Handbook [EC]</li> <li>• Scope of Work [EC]</li> <li>• Initial Criticality Matrix [EC]</li> <li>• Initial Operational Dependency Model [EC]</li> <li>• Enterprise Profile</li> <li>• RMDB Risks Updated</li> <li>•</li> </ul>		<p><b>Outputs: [Identify Exit Criteria]</b></p> <ul style="list-style-type: none"> <li>• Refined Criticality Matrix [XC]</li> <li>• Refined Operational Dependency Model [XC]</li> <li>• Business Impact Analysis [XC]</li> <li>• Risk Footprint</li> <li>• Prioritized Risks</li> <li>• Findings Report and Initial Recommendations based on Business Impact Analysis [XC]</li> <li>• Costs of Risks and Contingencies</li> <li>• Analyzed Checklist</li> <li>•</li> </ul>
<p><b>Activities:</b></p> <ol style="list-style-type: none"> <li>1. Refine Operational Dependency Model</li> <li>2. Determine Risk Impact on Operational Dependency Model</li> <li>3. Evaluate Risks and Associated Contingencies</li> <li>4. Prioritize Risks and Present Findings</li> </ol>		
<p><b>Tools:</b>          Business modeling software (e.g. <i>FlowCharter 7</i>)          RMDB          Decision tree software (e.g., <i>PrecisionTree</i>)          Simulation software (e.g., <i>@Risk</i>, <i>Top Rank</i>, <i>Best Fit</i>, <i>Risk View</i>, <i>Risk +</i>, <i>Crystal Ball Pro</i>, <i>Q-Sim</i>)</p>		<p><b>Templates, Checklists, etc.:</b>          Analyze Process Checklist          Analyze Process Findings Report          Criticality Matrix</p>
<p><b>Training:</b></p>		<p><b>Metrics:</b></p> <ul style="list-style-type: none"> <li>• Determination and client acceptance of optimal contingencies/risk.</li> </ul>
<p><b>Linkages to other TRW services:</b>          The general analysis may point to processes that TRW might introduce such as a Program Management Office, QA, change control, and document management.</p>		
<p><b>Lessons Learned:</b>          The key to a successful Analyze Process is to understand the basis for decision making in the client's organization. If key decisions are based on subjective judgements that require little documentation, then the Process and resulting BIA model may be relatively qualitative. On the other hand, if key decisions typically are based on more quantitative analysis, or require detailed documentation, then the Process and BIA model should be more structured and analytical.</p>		

## What are some COTS tools for ERMP?

There are too many COTS tools available in the market today to be able to cover within this guide. Some sample tools that were evaluated in TRW, NASDAQ, and PriceWaterhouseCoopers are provided here as a reference.

Figure 2.00 shows how each vendor were evaluated and categorized within the PIER model.

**Figure 2.00 – COTS tools available by PIER model**

Vendor	Product	Usage by PIER
Decisioneering	Crystal Ball	Evaluate
InfoHarvest	Criterion Decision Plus	Evaluate
Investment & Risk Analytics	Q-Sim	Evaluate
KWI	PaR	Evaluate
Palisade	@Risk, PrecisionTree	Evaluate
MicroGrafx	FlowCharter 7	Identify-Evaluate
Remedy	CRS	Identify-Evaluate-Respond
PMS, Inc.	Risk+	Plan
Strategic Thought	Active Risk Manager	Plan-Identify-Evaluate-Respond
Ascent Logic	RDD-100	Plan-Identify-Respond
Gartner Group	Risk Manager	Plan-Identify-Respond
STG	RiskTrak	Plan-Identify-Respond
Strohl Systems	LDRPS, BIA Pro DOOR	Plan-Identify-Respond

Within the framework of ERMP, most organizations tend to use proprietary tools customized during the planning phase of the ERMP. The best choice would be a COTS tool that is customizable to your business today and scalable for your business in the future, at a reasonable price.

Figure 2.10 shows how tmmsi's RAT Technologies can be combined with COTS tools to design a web-based tool for collecting and visualizing requirements related to ERMP.

**Figure 2.00 – tmmsi's RAT Technologies is under development**

## **What happens after the PIER model is in place?**

The results of any ERMP after the completion of a PIER model should have a post-implementation plan of action that helps the organization transition into a place of continuous self-monitoring and self-control. An ERMP is not worth the paper it was printed on if it simply sits on a shelf somewhere. This is where senior management and the key sponsors of the ERMP must sign-off on the results of the plan and put together the right resource to sustain self-monitoring and self-control. The idea is to ensure that the post-implementation stages of the ERMP have the right resource and the right support to continuously improve.

## **Conclusion**

ERMP was a hot ticket item during the 1990's leading up to the Y2K phenomena. Unfortunately, once the Y2K scare was over, we as a nation and particularly in the business area went back to a reactive mode. With the advent of 9/11 and widespread corporate corruption, we are once again being pushed into a proactive mode.

The 21<sup>st</sup> Century will propel government and businesses to be proactive in all aspects of their work. This is best seen by the creation of the Homeland Security office and the passing of the Sarbanes-Oxley (SOX) act. In this new era, ERMP and Risk Practitioners will become "movers and shakers" leading the charge. Risk Management as a whole will become a business like no other and those that have the foresight to be proactive will reap the lasting benefits.