



A Quote from Tom Lister

**Risk Management -
Program Management
for Adults**

Dr. Randy Walters



Overture

- ❖ What is Risk Management?
 - “There is only one risk: the project might fail...and we’re managing that by working like hell to assure it doesn’t happen.”
- ❖ “Everyone does risk management.”
- ❖ Why does it matter?
 - Building software is risky business
 - Ignoring risks is a no-win situation
 - With risk comes opportunity



Some Definitions

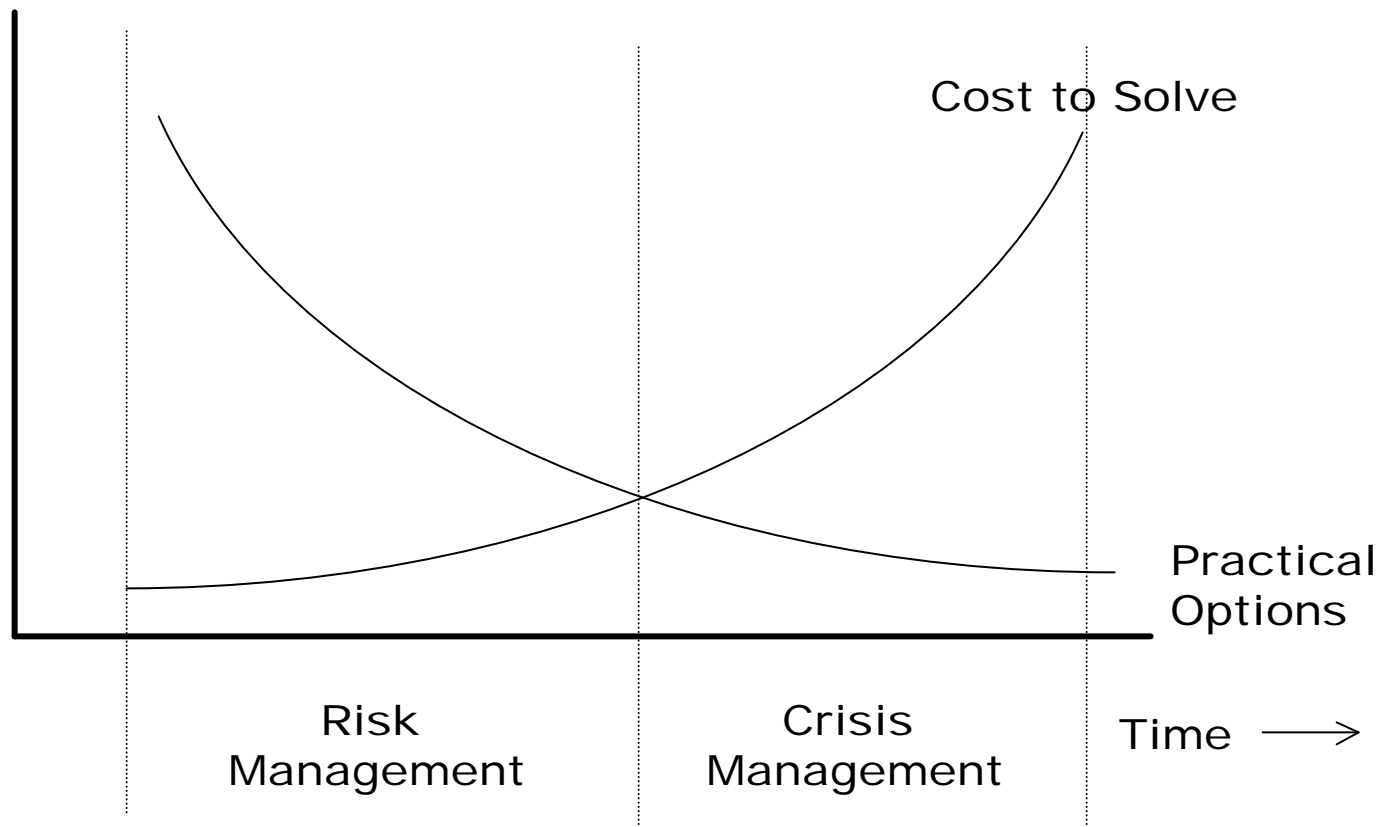
- ❖ Risk - A possibility of loss; or any characteristic, object or action that is associated with that possibility
- ❖ Risk is associated with
 - Probability - there is uncertainty
 - Loss - some harm, damage or consequence to goals or expectations, or stakeholder
- ❖ The *transition* of the risk is the moment of occurrence



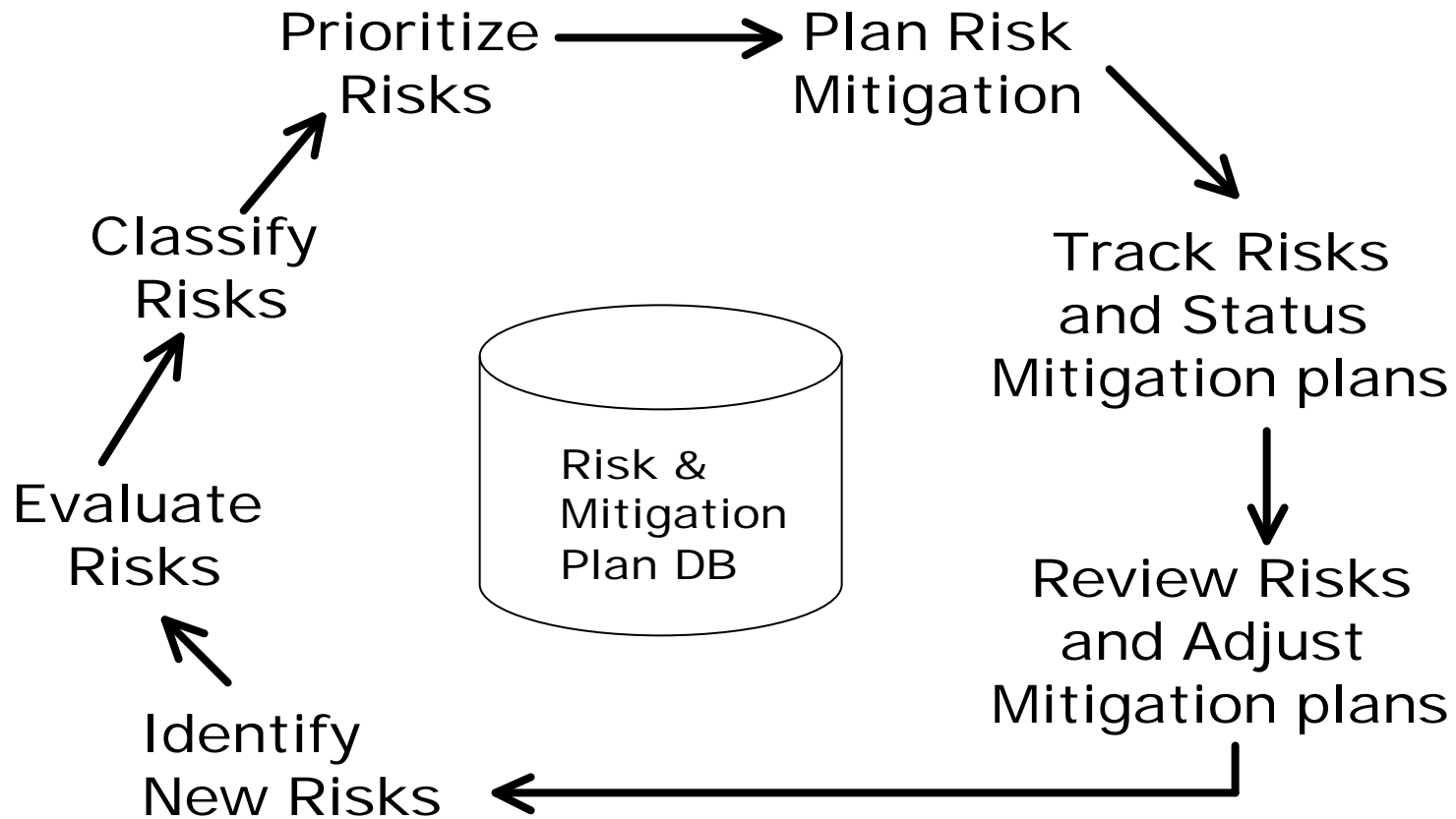
Risk Management

- ❖ A systematic and explicit approach used to identify, analyze, evaluate, plan, control and monitor risks
- ❖ A formal process for dealing with risks before the transitions occur
- ❖ Component activities include
 - Exposure analysis
 - Contingency planning
 - Transition monitoring

A Graphic Definition



Risk Management





Risk Activities

❖ Risk Identification

- Use postmortem analysis and industry data to classify each project-specific risk
- “Yesterday’s problem is today’s risk” - Tom DeMarco

❖ Risk estimation and evaluation

- Risk exposure = *consequence * probability*
- A problem is a risk whose likelihood has reached 100%



SEI Risk Taxonomy Questions

❖ Product Engineering

– Design

◆ Performance

- Any problems with performance?
 - Throughput
 - Real-time response
 - Database response, contention or access
- Has a performance analysis been done?
 - Yes: Confidence level of the performance
 - No: Do you have a model to track performance design and implementation?



Risk Activities

- ❖ Determine major risks by prioritizing
- ❖ For each major risk
 - Identify alternatives for reducing risk
 - Associate plan for risk reduction
 - Establish risk thresholds curves
 - Establish a contingency plan and fund
 - Identify a trigger for the contingency plan
- ❖ May also establish a system risk level



Typical Information to Record

- ❖ Description, date identified
- ❖ External or internal control
- ❖ Responsible person
- ❖ Status and history of events
contributing to reduction or elimination
of risk, or re-assessment of risk



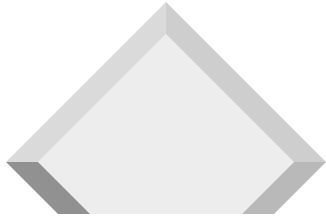
Risk Information to Record

- ❖ Impact and date of evaluation(s)
 - Impact Area (e.g., to Cost, Schedule, Management, Process, Product, Technical)
 - Exposure, area of program impacted
 - First date for impact (transition point)
 - Size and horizon of impact
 - Days remaining before impact materializes
- ❖ Mitigation plan status monitoring



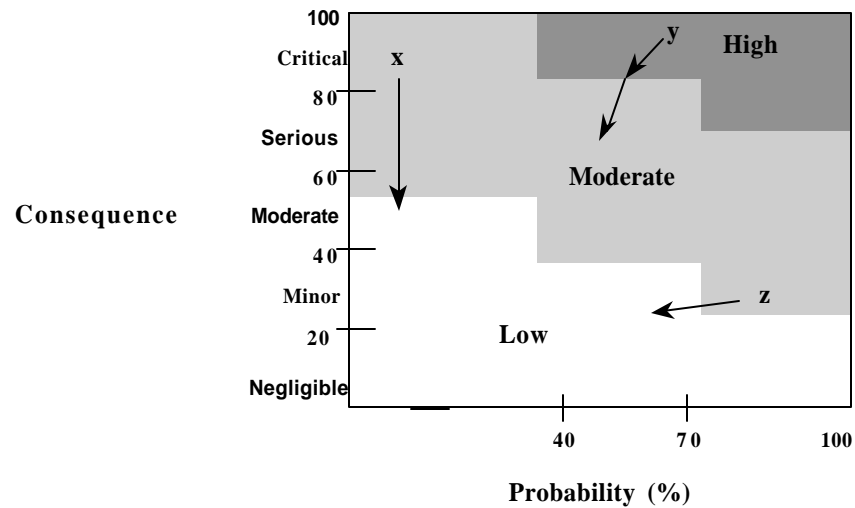
Risk Activities (Cont'd)

- ❖ Risk tracking and controlling
 - Periodically re-evaluate risk parameters
 - Be proactive in identifying new risk
 - Frequently status progress of mitigation plans relative to existing thresholds
 - Be willing to adjust or replan if actual progress does not match expected progress
 - Follow up on risk resolution and closure

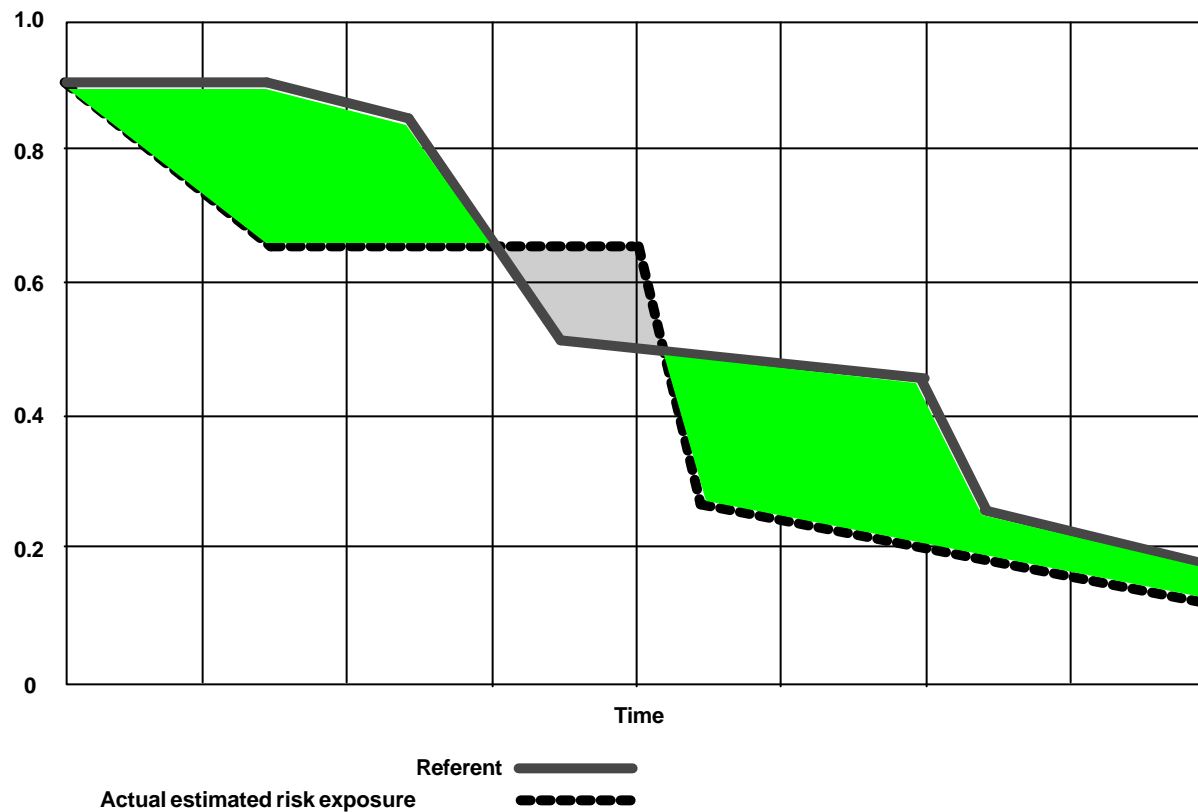


Risk Exposure Graph

Risk Exposure - Reduction



Risk Threshold Graph





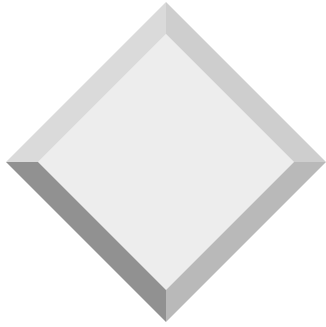
Risk Management Barriers

- ❖ Culture is risk averse
 - Executive management effectively “shoots the messenger” thereby relying on heroics
 - In aerospace contracting, programs with significant risks are subject to cancellation. Therefore, risks diminish the closer one gets to Congress
- ❖ There is almost no way to resolve Risk Management with “Can Do” mgt.



Risk Barriers

- ❖ Deficient management infrastructure
 - Managing the top-ten problems rather than looking to the future to determine the risks they are facing
- ❖ Doing anything sensible about risks costs money
- ❖ Risk identification can make you look like a whiner



Principles for Effective Risk Management

- ❖ Global and Integrated Mgt. Perspective
 - Recognize potential value of opportunity and potential impact of adverse effects
 - Risk management is vital to project mgt.
- ❖ Forward-looking view and rear-view
 - Managing project resources and activities while anticipating uncertainties and potential outcomes, using from past successes and failures.