PM TUTORIAL

Notes On

Risk Management

"Manage project risks or those risks will manage the project"

THE BASIC BASICS

Projects have threats to being successful and these threats are risks to be managed. Some risks can be controlled, some not and some can have their threat reduced.

You can make a positive impact on your project through risk management actions.

Here are the basic things you can do to control project risks.

- Understand what project success means, risks are threats to these success factors (like meeting schedule, meeting all customer needs, …)
- Work with your team to list project success factors for your specific project and then list what threats exist for each
- Identify the biggest threats, you can't manage all threats, pick the ones most important to control
- Work with your team to discuss and decide what can be done to avoid each risk you will control and assign actions
- Periodically have a team discussion on the current set of threats (some go away and new ones show up), what is being done and not being done and what should happen in the future

Remember, with a little bit of effort to identify threats and to identify and implement a few risk controls, the probability of success for your project can be significantly increased.

RISK MANAGEMENT TUTORIAL

What is Project risk Management? – It is the management function project managers and teams use to reduce or eliminate threats to project success.

What are Project Risks? – Project risks are threats to project success factors. Project success factors are the way one would define a successful project, i.e. finish the

following sentence, "My project is successful if….." Often a project team will finish this sentence with success factors such as the attainment of all requirements for the project's deliverable, meeting schedule, staying within budget, meeting or exceeding all customer expectations and many other success factors that might include proving a new technology, building a foundation for future projects and growing team member skills. Risks are future problems, not problems that exist today. Risks have two attributes of the probability of occurrence and the impacts if the risk does materialize as a real problem.

Why Is Risk Management Important – The obvious reason, of course, is for the project to increase the probability of project success and this is such a valuable outcome, all projects should do it. Less obvious reasons also exist and include the fact that performing risk management on a project allows project teams to surface concerns and take actions to avoid or lessen the impacts of those concerns which refines the methods the project uses to manage work. These refinements extend the value of the function to future projects that can employ lessons learned by past projects.

If A Competent Plan Is In Place and Requirements, Cost and Schedule Management Are Being Performed, Is There a Need to Also Perform Risk Management? – Yes. Most management functions are addressing the recent status the project has been in, looking at the past. Risk management is looking in the other time dimension, in the future, and as such is a different type of management function that complements the other management areas.

What Risk Management Steps Are Accomplished? – The needed steps involve the following team actions.

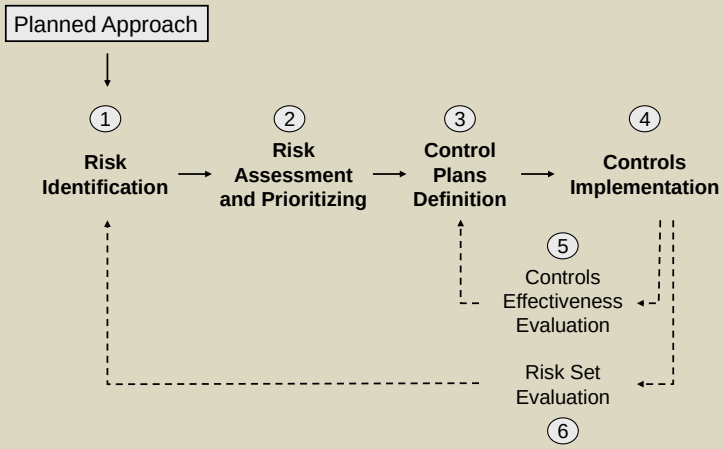
- Risk Identification – The team defines the success factors for the project. Using various methods, the project team identifies threats to those success factors without regards to controllability, probability, impact or other factors. A "risk owner" that is an individual on the team or working closely with the team can be identified and the this owner of the risk will take on the responsibility of managing and tracking the risk.

- Risk Assessment – The probability of occurrence and the impacts if the risk does materialize as a real problem are estimated.

- Risk Ranking / Risk Prioritizing / Risk Filtering – Typically a team will not want to try to control all risks identified and as such, needs to use the risk assessment information to determine which risks pose the greatest threat to the project. The action of ranking, prioritizing or filtering risks is accomplished to identify the most important risks.

- Risk Controls Identification – For the risks the team decides to manage, control actions are identified. Many different types of controls can be considered and some of these include probability reduction, impact reduction and contingency or backup plans.

Composite Risk Management Process



- Risk Controls Implementation – All controls are assigned and scheduled and control actions are tracked just as project work is tracked.

- Risk Set Updates – Periodically during the project, the team should review the set of risks, remove those that have been sufficiently controlled and those that no longer threaten the project and add new risks that have surfaced or previously identified risks that did not have control plans but that now pose a higher threat to the project and should be managed.

What Are Ways to Identify Risks? – Many methods can be used and some common methods are below. It is recommended that at least two methods be employed to result in a more complete view of threats to the project being defined.

Risk Identification Methods

- **Unstructured**
  - Ask your team "What are risks to our project?"
  - "What are we worried about on this project?"
- **Measures of Success**
- **Structured Methods**
  - Technical Risks – Fault Tree Analysis
  - Review project elements, work outline (WBS), teams and products
  - Review the parts of a project
  - Review "Lessons Learned", review risks of similar past projects
  - Use a risk identification checklist
  - Review common causes of project problems
  - Review your agreement and requirements from your customer

What Are Some Methods to Perform Risk Assessment? – Most assessment information is estimates made by the project team, sometimes with advice from experts external to the project. In some cases sophisticated tooling can be employed, but this is typically only done in specialized situations.

Risk Probability
Can be expressed in qualitative or quantitative terms
- **High / Med / Low, 1 – 5 or**
- **A 30% chance of occurrence**

How:
- Experience Based Estimate
- Monte Carlo Tools (for special situations)

Risk Impacts
Quantitative is recommended
- **2 month schedule slip**
- **$100,000 cost impact**
- **10% increase in response time**

How:
- Experience Based Estimate
- Cost, schedule and technical information usually available to support impact estimates

Consider addressing impacts for a given risk and then asking about the probability

What Types of Risk Controls Should Be Considered? – A variety of views on risk control types exist, the following is one view of seven control types. The initial control types are first reviewed for applicability and where these do not apply or cannot sufficiently control the risk, the more aggressive controls are employed. Few risks will have all controls, usually a risk will only have a few or might have only one control type.

INITIAL CONTROLS

Remove	**– Do Something to Eliminate the Threat**
Accept	**– Plan for This Risk to Materialize**
Wait and Watch	**– Too Early to Act, Watch This Risk**
Transfer	**– Best Handled by Another Party**

If Initial Controls Do Not Work, Then More Aggressive Controls May Be Needed

AGGRESSIVE CONTROLS

Mitigate the Probability	**– "Make Less Probable"**
Mitigate the Impact	**– "Reduce the Effect"**
Contingency or Backup Plan	**– "What to Do If All Else Fails"**

How Should Risks and Their Status Be Reviewed During the Project? – Several options exist. For larger projects, the team may decide to have dedicated risk management meetings where risks, their control actions, current probability and impact estimates and other information is periodically reviewed and changes made as needed. Another option (which is usually best for smaller efforts) is to integrate the risk management status review with the normal team reviews of technical work status and project cost and schedule status as those apply.

How Should Risk Information Be Captured and Communicated? – Many tools exist to support risk management information capture and dissemination. Often the simplest approach can be the best and using MSOffice products being a workable approach. A PowerPoint file with one slide per risk, a Word file with one page per risk or an Excel file can provide fully sufficient risk information collection and communication functions.

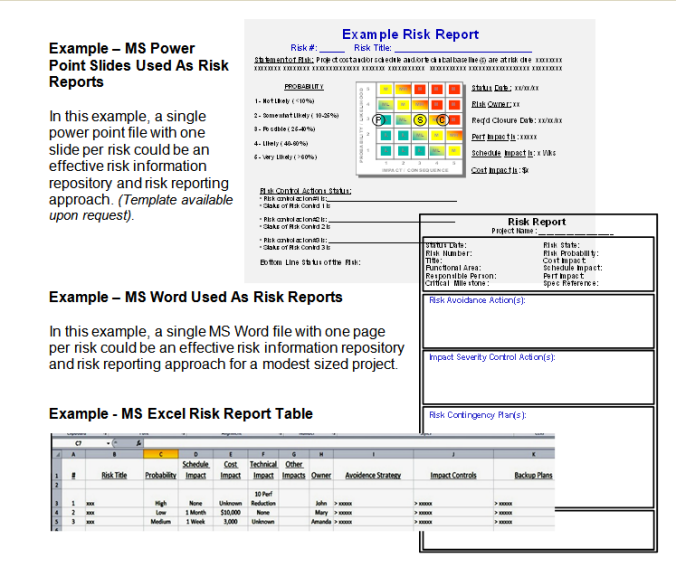


Figure - **Example Report Formats**

Who Is Responsible for Risk Management on the Project? – In essence, the entire team is responsible for managing project risks as a team but is it also of value to have someone identified as the "Risk Manager" on the project. The "Risk Manager" manages the risk management process and is not generally responsible for manages all risks on the project. On a modest effort, the project manager can be the risk manager. For larger efforts, the project manager may assign an individual to handle the

In General, What Are Some Common Overall Steps for Project Teams to Consider Performing to Implement Risk Management? – The following is a summary of common steps important to a productive risk management approach for a project.

What to Do On Your Project To Implement Risk Management

Preface any risk management effort with:
- Known project requirements
- Known project deliverable
- Project Plan

Educate your team
- Teach a short seminar, this course contains the key thoughts
- Stress the "Why" with the "What" and "How"

Define your approach
- Process, roles, schedule for risk planning, risk management task assignments, data repository approach, ...

Decide if management, customers and suppliers will be directly involved and in what way

Perform your defined management steps
- Identification – Team meeting with follow on work
- Assessment – Risk owner prepares this info
- Control Plans – Team meets to discuss and decide
- Implement Controls – Add the controls to your schedules
- Track – Review top risks at team meetings
- Keep Current – Periodic review of the risk set and control actions, make changes as needed
- KEEP DOING ALL OF THE ABOVE AS NEEDED

Additional FAQs Related to Risk Management

Question: What are some common reasons a project might fail to accomplish effective risk management, what would you do to offset these shortcomings?

Answer: Most Projects fail to consistently perform risk management. A team may start out on the right track but soon gets side tracked on many issues and allows risk meetings to fall by the wayside. Others reasons include the failure to identify the root cause of risk and the team identifies risk controls focused on controlling risk symptoms vs the real risk and other failures include too few or ineffective risk controls. Following established risk management steps with guidance appropriate for a given project environment and making sure the project team continues to perform risk management throughout the project are important ways to keep risk management a productive effort.

Question: What are some common risk identification methods?

Answer: On a smaller Project, the team may simply meet and brainstorm the top risks, problems from past similar projects can be a source of risk identification as can lesson learned data bases. On larger efforts, use of the work outline (or WBS) to discuss threats, schedule reviews to identify concerns, have each part of the project first identify risks at their level which are later combined at the project level are a few of many approaches.

Question: How is risk assessment actually accomplished?

Answer: Probability assessments are primarily expert estimates except in the not so common situations where Monte Carlo probability (or uncertainty) assessment tools can be applied. For risk impacts, significant information should exist in project work information and cost and schedule plans to support calculations or estimates of risk impacts. For each risk, the method(s) to complete risk assessment should be identified and each risk may have a different method of assessment. Lack of detailed risk assessment should not slow down risk management, if a risk is known and is judged to be a real threat to a project then the project team should move to identify common sense risk controls. Assessment information can be of real value in ranking risks, but the lack of detail assessment information should not delay identification and implementation of risk controls.

Question: Many Project teams focus on risk mitigation, are there other categories of risk controls that should be addressed?

Answer: There are many avenues to handling project risks. One approach is to identify risk strategies such as “watch it’ as it is not time to take action, “transfer it” as someone else as they are best position to control it or “get rid of it” by doing something that completely removes the risk altogether. If all of these are not possible, then risk controls that reduce the probability and controls that reduce the impact should be identified. Finally a backup plan should be defined to be used in case all else fails to control the

stated risk. Any given risk usually will have on a few risk controls, not all of the control types noted above.

Question: What would be a no-frills approach to implementing risk management on a Project?

Answer: Meet with your team, brainstorm the top risks, decide which ones can be controlled, brainstorm what common sense risk controls should be implemented, assign the controls and track their progress weekly and get back to work.

Question: Some Project teams confuse current problems with project risks, what would you do to head your team in a constructive direction?

Answer: Risks are future problems that have yet to occur and as such have a different character than current project problems that require immediate action. Different lists for different things should assist the project team in keeping the nature of these project issues separate. In many cases risks and problems can be closely intertwined and having them on some list and having them all being managed is the top priority. Have two lists and allow that one topic might be on them both as any given topic could be an immediate problem that also has additional future potential problems associated with it.

Question: Several members of your project team are excited to buy and implement a new risk management tool (it's a "point and click" world you know) how will you handle this situation and what is the best thing to do?

Answer: Set the priorities for risk management with the first priority being sound risk identification and the definition of effective risk controls. With that being established virtually any tool including a white wall to write on will support effective risk management. Capturing all the risk data in a tool is of value, but installing a tool is not risk management. Known risk tools are only data repositories capturing the set of risks, assessment information and the controls the project team brainstorms in a meeting. Known tools do not have any "artificial intelligence" to assess risks or to define controls plans and as such should be viewed as a communication vehicle to accept and disseminate risk information only. Human thinking and work is required to perform real risk management.

Question: How do the existing cost, schedule and requirements management systems support risk management in both the areas of risk planning and risk controls?

Answer: These other management systems can support risk identification and risk assessment steps as the setup of these system will surface these types of risks as the project is started and planned. During project performance, these management systems can assist in providing measures of the effectiveness of risk controls.

Question: What is the PM's role in risk management?

Answer: The PM is often responsible for everything on the project and this includes risk management. On smaller projects the PM maybe the risk manager and on larger projects, the PM might identify another team member to manage the risk management process.

Question: You are working on a contract where your customer is strong on risk management, at Project startup you and your customer identified ten top risks to be tracked and reported on, what is the good news and bad news about this situation?

Answer: The good news is that you have a customer interested in risk management where this insight into project risks may allow the customer to be a constructive part of effective management of these risks. The challenge will be not to allow this risk management reporting to the customer prevent real risk management from occurring on the Project. Some Projects will want to paint a "rosy" image of risks with the result that serious risks may not be characterized as such and needed risk controls may be absent as a result.

END of RISK MANAGEMENT TUTORIAL
