An Empirical Study of Risk Management & Control

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Abstract: Risk management is the process to ensure that all problems are discovered, analyzed and controlled within a cost and time. The risk is identified, assessed and resolved in risk management. Control mechanisms are used for feedback at correct time. The whole process of risk management is defined through 17 steps. These all steps are categorized into four parts: planning, resourcing, monitoring and controlling. Risk management is very important process for large projects. The main objective of risk management.

I.   Introduction

Risk management is the process of assuring that all problems are discovered early enough so that there is time to recover from the problems without missing schedules or overspending the budget. Control mechanisms are put in place in order for the feedback to occur at proper time.

Within a project there are 17 steps that can be taken to help to manage risk. These can be grouped into 4 categories.

1. **Planning:-** planning is to identify the type of response appropriate for each risk; developing a detailed plan of action; confirming its desirability and objectives and obtaining management approval.
    Step1:-
    Determine the risk indicators and pass information to risk evaluation. The level of acceptability of a risk or group of risk needs to be decided as part of planning process.
    Step2:-
    Using the ordered set of risks, assess each against its indicators.
    Step3:-
    Select the most appropriate means of reducing each risk. No further action, other than monitoring is required for risks that are below their risk indicator.
    Step4:-
    If the risk is to be accepted without trying to avert it, go to step 6. If the risk is to be eliminated, its likelihood or consequences reduced, then design appropriate course of action.
    Step5:-
    Ensure that the course of action selected does not produce any unintended consequences.
    Step6:-
    Create preliminary risk management plan and define the initial monitoring requirements.
    Step7:-
    Present plan to management for authority to proceed. This step ensures that staff or cost commitments are fully appreciated.

2. **Resourcing:-** Resourcing is to identifying and assigning the people and the resource (money and equipment) necessary to do the work; also confirming that the plan is feasible.
    Step8:-
    Allocate the resources to risk management plan.
    Step9:-
    Assigning responsibility for the activities identified in risk management plan.
    Step10:-
    Ensure that risk management plan is feasible and perform re-analysis of risk if necessary.
    Step11:-
    Finalize the risk management plans and begin its execution.

3. **Controlling:-** Controlling is to making sure that events on the plans are really happening. Once the risk management plan has finalized and execution begins, then the activities defined within the plans must be undertaken with suitable control being exercised.
   Step12:-
   Ensure progress against the risk management plan is within resource limits.
   Step13:-
   Coordinate the execution of risk management plan with existing organizational activities.
   Step14:-
   Resolve any conflicts over resource allocation.

4. **Monitoring:-**
   Monitoring is to make sure that execution of the plan is having the desired effect on the risk identified. Also ensuring that the management of risk process is applied effectively.
   Step15:-
   Capture lessons learned on the effectiveness of risk reduction measures.
   Step16:-
   Check that the risk indicators are not being exceeded and that reduction efforts are effective.
   Step17:-
   Discover the reasons for change in risk status.

II.   Entry and exit criteria

All distinct phases of all projects should have entry and exit criteria. These should be documented as part of the development plan. No phase should be started if the entry criteria have not been satisfied or reasons for exceptions to the criteria are not known and agreed upon. No phase is complete until the exit criteria are satisfied. For example, the coding of a module should not begin until the design of the module is complete. Exceptions are sometimes negotiated. The entry and exit criteria for various phases are discussed below:-

1. **Identify project risks:-**
   Purpose:- Name and describe the specific risks faced in this project, to be able to analyze those risks and decide on an approach to handle them.
   Entry criteria:-
   Project has been approved for work and team has been named.

Roles	Tasks
Project manager	Select risk identification team Potential participants include Project team, support group(SQA,CA, test etc) Representatives from other elements of a program Partner or supplier representative Customer and work representative General and specific risk factor chart
Risk identification team	Identify which risk factors are relevant to the project and rate their potential for indicating risk to the project For each high factor , identify the specific risks to a project, citing the condition that could rise and consequence to the project if it does rise Organize the specific risks into sets that support analysis of impact
Project manager	Determine which risks to analyze further

   Exit criteria:-
List of risk items is ready to be analyzed.

2. Analyze risks or risk exposure:-

Risk exposure is defined as the product of the likelihood that the risk will occur and magnitude of consequences of its occurrence.

Purpose:-

Determine the projected risk exposure for each identified risk item.

Entry criteria:-

Identification process is complete and there is a team that can revised the risks to estimate the impact.

Roles	Tasks
Risk identification team	Review each risk item and estimate Probability of occurrence of this risk item Loss if the risk occurs Calculate the risk exposure for each risk item Rank the identified risk in order of exposure
Project manager, senior management	Consider level of risk represented by project overall and work decide whether or not to proceed with the project

Exit criteria:-

The project team, project manager and other affected parties agree upon an acceptable level of risks for the project. If the project proceeds, a list of key risks is agreed upon by project manager.

3. Risk handling actions:-

Risk mitigation and contingency planning.

Risk may be handled a number of different ways.

- Accept the risk with no investment of effort or cost. This is good when the cost of mitigation exceeds the exposure and the exposure is acceptable.
- Transfer the risk to someone else or agree to share the risk.
- Fund and staff the efforts to reduce the risk.

Purpose:-

Establish the affordable set of actions to minimize the exposure from key risks identified and ensure project success.

Entry criteria:-

List of key risks has been prioritized.

Roles	Tasks
Project team and project manager	For each key risk, identify an approach to handle risk, estimate the effort or cost required for that action For risk that require them, identify contingency plans
Project manager	Incorporate the risk handling action into the project plan Document the required contingency plan and their anticipated cost and effort.

Exit criteria:-

All key risks have been addressed with actions or contingency plans which are cost justified against the benefits to the project.

4. Track and control risks:-

Throughout the project ,project team tracks the progress, handling the risk to ensure that:-

- Actions which should reduce the probability of occurrence are effective.
- Actions which should reduce the loss associated with risks are effective.

Entry criteria:-
Risk handling actions are staffed and funded. Contingency plans are defined where appropriate.

Roles	Tasks
Project manager	Regularly reviews and update the status for each key risk, to ensure risks are under control
	For any risk out of control, revise the mitigation action or get approval to proceed with associated contingency plan
	Prepare a risk status report
Project team	Be alert to other potential risk and communicate them to project team
	Identify new risk and analyze them
	Participate in regular review and updating of current risk list

Exit criteria:-
Risk exposure for risks to project are at or below the level agreed to as acceptable for the project.

III.   Conclusion

The risk management process is very useful in larger projects to control and manage the risks effectively. An effective planning plays an important role to control all type of risks but this is not effective to all types of risk. Time can be wasted if risks are improperly assessed and prioritized. Many of the failures were due to the fact that the risk were not identified and managed properly.

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