Managing Project Risks

The Project Reality

As per The Standish Group report released in 1994 only 16% of all IT projects attempted successfully occur within the "triple constraint" of cost, time, and user requirements. While the Project Management Institute (PMI) - the largest project management professional association in the world - had mentioned Risk Management as a critical success factor in 1987.

Even today, it is a common experience that on average, projects end up either late or over budget – not meeting overall project goals. There are many reasons for this phenomenon, which have to do with the lack of attention paid during a project's initial phases. Many working group tend to think that until they get to perform practical activities they are basically wasting time. But the fact remains that more time we spend analyzing the situation lesser time is wasted in subsequent stages in doing rework or re-planning.

Many organizations still do not identify risks at the beginning of a project, or review and update those risks throughout the course of the project lifecycle. Project planning is done as if all variables are known, and outcomes certain. Risk management is virtually ignored as an integral part of the project management process. We all recognize that risk is an important part of all projects and we would all acknowledge that the management of risk could be the most critical factor in project success. Yet if you look at the practices that have been put in place in most firms, and at the tools that are being used to support these practices, tools for risk analysis and management are most often missing.

People are aware that there is a possible downside but it is ignored assuming that it would never happen. Since the very term risk has negative connotation people tend to deny its existence thus exposing the project to unwanted surprises leading to difficulties and failures. Unfortunately, wishing that bad things wouldn't happen is almost a sure way of ensuring unwanted results and hiding the downside (risk) does not prevent it from happening.

On the positive side, most project risks are usually known to the project personnel and can be easily managed. But the communication of project risk is poor, incomplete and even non-

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existent. There are several reasons for this lack of communication. The most prevalent being reluctance on the part of stakeholders to accept that risk is neither bad nor good, but that risk is always present and can be effectively dealt with to increase the probability of project's success.

Risks

Risk is something with which we are all somewhat familiar. We know that it is risky to jump out of a running bus, or invest money in the stock market. But we don't always think of project as risky - particularly if our project is not mission-critical - that is, people's lives don't depend on it. While insurance companies and actuarial analysts spend most of their days dealing with risk, project teams often spend a mere fraction of their project schedule, analyzing risks.

Risk involves inconvenience or loss perceptible by given subjects, as the outcome of occurrence of situations that are possible but not certain. It is a potential occurrence that would be detrimental to plans or in a more in-depth sense, the probability of a performance. The term has two components: a negative impact that something causes, and the probability that that impact may occur. Both components are necessary for a risk to exist. When combined into a single indicator the risk can be judged relative to other risks as High, Moderate, or Low.

A risk, in a project, can be anything that may threaten the successful completion of a project: increased costs, delayed completion, or loss of quality. Some common risks include: the technical requirements of the product or system, constraints placed upon the project by the customer, project budget, or project schedule.

It's important to distinguish between direct and indirect risks. A direct risk is one on which some degree of control is possible whereas an indirect risk is one that cannot be controlled. While one should not be unaware of the indirect risks, they are of little consequence in a practical sense. Project cost over run risk due to low resource productivity is a direct risk. While project delay due to non-availability of project specific tool from a vendor due to a recent merger is an indirect risk.

Sometimes, an indirect risk may actually be a direct risk. For example, you may be dependent on an external supplier for a specific requirement of your project. This appears to be an indirect risk that cannot be controlled. But, by having contingency plans for those requirements it is

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possible to control this risk. This can be achieved by developing a relationship with the supplier so that they understand project requirements properly, by choosing alternate suppliers, or by choosing to meet requirements in-house.

The subjectivity of point of view is essential to identify the risk since a given situation may take on different connotations for different people. In a real life situation risk assessments differ since people have different perceptions, skills and ability to influence things. Thus the approach to risk management is also ad hoc and dependent on experience and risk orientation of key project personnel.

Risk Management Process

Risk Management is the process selected to manage risks to reduce impacts or the probability of risk. In a more in-depth sense, the process that identifies and assesses risks, determines their impacts and compares the impact levels, formulates plans for their mitigation and allocates resources to carry out these plans, and tracks progress against the plans to ensure that mitigation occurs. Risk Management is an iterative process performed throughout the project, although it takes particular importance at the project's initial stage. A clearly defined and mature risk management process helps make the factor on which the planning interventions' success depends clear, communicable and subject to influence.

The Risk Management Process comprises of the following steps:

Step 1: Identify the Risk

This is the first step of the risk management process and it involves compilation of a list of potential occurrences that would be detrimental to the project. Important aspect here is not only identifying but also accepting risks. The risk identification step is only meant to compile top–level information on specific risks. The output would normally be a list of items, with only a brief description of each possible risk.

cost of the project. In general one would expect that the efficiency of the offshore supplier increases. The client should benefit from these effects, as is common in other industries.

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All projects have some risks; it's just a matter of how big or how small they are. Risk identification should be both formal and informal to be truly successful. Periodic risk surveys can be a part of the process of identifying risks. This may involve interviewing areas across the project with a formal checklist of questions to pry the information out of the people and get them thinking about risk.

A typical approach of identifying could be considering all of the project elements as defined by the WBS (Work Breakdown Structure) and then doing "what if?" analysis to each project element. These potential outcomes will then be used in the next phase of the risk management process - risk assessment - to help decide where resources and mitigation efforts must be directed.

Step2: Analyze the Risk

Risk analysis is the act of evaluating the potential risks to determine the probability of the events happening and fully defining the consequences should they occur. This includes in-depth analysis of given risks, and often involves modeling risks for better understanding. Detailed risk assessment analyses are performed in this step to fully describe a possible risk, especially including definition of impacts to the project and the probability that these impacts will occur. The key approaches for reducing or controlling the risk are also identified in this step. In a real life situation risk assessments differ since people have different perceptions, skills and ability to influence things.

There are two basic processes for performing risk assessment: qualitative and quantitative. Qualitative assessment techniques in general provide guidelines for rating the risk associated with different phases of the project development. When applied, these guidelines allow such qualitative assessments as high, medium, or low, or a numerical rating from 1 to 5 in some cases.

On the other hand, quantitative assessment techniques attempt to analyze the conditions around a potential risk and develop a probabilistic model to assess the impact of its occurrence. However, even if the resulting solution appears to be more definitive, it is based for the most part on subjective probability assignments, which are qualitative in nature.

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One way to combine both the qualitative impact of a risk with the probability of its occurrence can be seen in table below. The Table below shows how impact and probability of occurrence are linked together to yield a qualitative rating of high, medium or low. This technique is another way to normalize risk levels across the project so that resources can be allocated in a level playing field — necessary for effective risk mitigation.

	Probability of Occurrence:		
Impact:	Low (10-30%)	Medium (30-70%)	High (70-100%)
Low Impact	Risk is LOW	Risk is LOW	Risk is LOW
Medium Impact	Risk is LOW	Risk is MEDIUM	Risk is HIGH
High Impact	Risk is MEDIUM	Risk is MEDIUM	Risk is HIGH

The actual work of putting together a risk analysis is the responsibility of the person (say risk analyst). The risk analyst is involved in guiding the content of the analyses to ensure that all risks have equivalent data gathered and available for the next step of the process.

Step 3: Assess Risk Level

Risk Level Determination is the step that judges the severity (risk level) of a risk. This step of the process is a fairly methodical review of the data compiled for each risk. The goal of the step is to apply project–wide, consistent rating criteria against each risk to determine relative risk levels.

This ensures, at the project level, that the risks are properly rated to determine which risks truly have a detrimental effect on the project as a whole so that proper mitigation plan can be implemented to control risk and ensure project's success. A consistent rating criterion is mandatory for risk level determination.

Ranking risk items at the project level ensures that the parochialism known to exist in organizations will not hinder the real goal of risk management - to reduce overall project risk levels to an acceptable level.

Step 4: Prepare the Risk Mitigation Plan

Risk Mitigation Planning is the act of taking the general approach for risk mitigation defined during risk assessment and defining detailed plans to reduce or control each risk. Specific goals

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that will reduce the risk are set as part of the detailed timephased planning that defines the criteria necessary to consider the risk mitigated. Detailed plans include task plans, detailed schedules for overall task accomplishment, and resource plans.

The risk list should be reviewed regularly to keep it up to date and to evaluate the effectiveness of risk mitigation strategies. The results of these reviews can drive revisions to the mitigation plan itself.

A prevention approach can be adopted where plan is implemented to control the risk from initial stages. A typical technique for prevention is to plan more than one approach to accomplishing the task related to the risk area and defining the fall back positions should a risk impact occur. Research and analysis enables risk reductions through both probability and consequence modification. This means reduction of probability of occurrence of a risk, or the reduction of a risk area impact. This makes sense since risk involves the probability of occurrence in addition to the negative effects of the risk occurring. By detailed analysis and research one can reduce the overall risk to the project because you really understand the risk impacts early on and therefore can deal with them. One can also acknowledge that there's nothing to be done about a risk if mitigating the risk is too costly. When the risk is highly improbable then also trying to mitigate it doesn't make any sense.

Step 5: Implement and track Plan

Risk Mitigation Plan Implementation and Tracking is the actual implementation of the plan, i.e., the execution of activities and application of resources according to plan. Tracking of the progress on various project parameters is necessary to provide information to give confidence that risk mitigation goals will be met.

Once the decision has been made on what general approach to take in mitigating risks, it will be time to actually plan the tasks necessary to fulfill the objectives. Before the plan is implemented the risk analysts must first come up with the detailed task plans.

Tracking of plan implementation can actually assist the Project Manager in determining whether or not the activity is performing to plan and if the project is going to get the risk

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mitigated. Continuous reassessment of those risks either initially judged to be low or not requiring mitigation or those that have been mitigated is required.

It is extremely important to realize that risk management is only effective if it is an on-going activity. All too often a project team will produce the initial risk list, update it once, and then put it on the shelf and forget about it, becoming embroiled in fighting the fire of the day. The Risk Mitigation Plan should outline a schedule for regular risk status reports and risk review meetings. The process step of planning risk mitigation activities probably should be iterative.

Summary

Risk management can be defined as creating and maintaining plans for controlling real and perceived risks paired with monitoring the effectiveness of those plans. A project contains many elements of uncertainty that manifest themselves as risks. And in most cases it will be too late to do anything about them if they become reality. Risk management allows you to be active in attempting to predict what could go wrong and in addressing those potential problems as early in the project as possible.

The process of risk analysis and mitigation is comprised of various phases that allow one to identify the risks, judge their potential impact, and plan to avoid or minimize the risks. Identifying risks allows you to evaluate and plan for them, and to be prepared to respond when mitigation strategies fail.

Risk management needs to start at the beginning of a project to be of benefit. Risks feed into the project plan and help determine how you run your project while trying to address the risks in order of priority. Managing risk early is always less costly and painful than cleaning-up later. However, introducing risk management at any point in your project will give you some benefit; it is better late than never.

The risk management process should include tools to support the risk management process, training in the process and use of the tools. Clear support for the process at all levels of management is also essential for an effective risk management process. The

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senior management must strive to see the complete picture and must play the role of the devil's advocate until the entire picture is presented with all possible outcomes.

Nagarro Risk Tracker

Risk Tracker is a scalable, client/server solution, offering customizable fields, email notification, high scalability, and server support for Windows and access from Web browser-based clients. Risk Tracker is the solution offering the best mix of features, architecture, support, and scalability. Communication is placed at the center of paradigm since it is both conduit through which all information flows and is the major obstacle to risk management.

The Risk Tracker module allows project team to identify and log risks in the system. Using pre defined rules the next steps of risk can be implemented. By using roles and permissions module of Risk Tracker permissions for performing all steps of risk management process can be given to various roles. Rule based notifications and alerts are used to implement process steps and business rules.

Risk Tracker automates the tracking and management of risks through the project stages in your risk management process. Risk stages are defined based on which risk changes its state automatically and e-mail notifications to manage the workflow and information takes place based on pre-defined roles.

Risk Tracker is built on assumption that a disciplined and systematic method of managing risks is necessary and feasible to control project and meet project objectives.

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