

The Essence of Risk Identification in Project Risk Management: An Overview

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Abstract: Risk identification is a challenging process in the management of project risks. Most project managers tend to spend less time in identifying risks and more time in risk mitigation, ignoring the fact that unidentified risks cannot be mitigated. However, it is worth noting that risk identification forms the bedrock in the development of a suitable risk management plan. Once the risk is identified proper planning process can be instituted to address it. The identification and management of risks can be a daunting task that requires the support of all project stakeholders. Moreover, the project manager does not have monopoly of knowledge and as such requires significant inputs from other stakeholders especially in identifying project risks. This paper delves into the meaning of risk, its significance and how it can be efficiently managed by the project team. In addition, it covers the techniques used to gather risk information, essence of the project risk register and categorization, analysis, response and monitoring of project risk. Considering the fact that a project is a risky venture; there is absolute need for the project manager and team to plan for it. Risks are uncertainties, that may or may not occur; but if it occurs and there is no plan to address it, can mess up the work of the project manager and thus, resulting in project failure. The planning for risks is inevitable in project management and as such should not be treated with levity. The rationale for having an effective risk management plan are thus; prevent waste of project resources, prevent the project from failing, timely delivering of the project, ability to meet client's requirements, serves as a source of learning for future projects.

Keywords: Risk management; Risk response; Risk mitigation; Risk planning; Risk register; Risk Monitoring

1. Introduction

The management of risk is such an important concept in project management, that all project managers should not ignore. Therefore, in project planning, project managers and team should ensure that more attention is given towards the identification and causes of risks, categories of risks and possible risks responses. The team should develop a document called risk management plan, that guides them in the management of risk. All project activities carry some element of risk, which are uncertainties that could affect the project for better or worse. It is important to understand the difference between business risks and project risks. Business risks are more general and relate to the organization, whereas project risks relate specifically to the project objectives. Risks are unexpected happenings that can damage or enhance projects objectives. Therefore, it is incumbent on the project team to identify and isolate all the possible risk factors surrounding the project.

Risk is an important concept that cuts across many disciplines and therefore requiring sufficient attention in order to minimize its impact when it occurs. In project management, the significance of having an effective risk plan cannot be over emphasized. However, project is a temporary endeavor defined by time, scope and resources undertaken to produce unique results (PMI, 2019). Therefore, organizations cannot afford to invest huge amount of resources on an endeavor that is marred with high level of vulnerabilities. Because projects have a stated timeline, much should be done to ensure that it achieves its objectives as planned. However, risk is by far the most feared challenger to project success. Thus, making it crucial for project personnel to understanding the meaning of risk and its effective management in project.

Risk is defined as an unexpected event or condition that might have either positive or negative effects on project objectives (Eldash, 2012). The objectives of the project are the set-out things project personnel want to achieve in implementing the project and as such serves as the yardstick to measure project success. Any event that might damage or enhance these objectives could be referred to as a risk. Although, risk and uncertainty are closely intertwined terminologies that are mostly used interchangeably in project management yet, they differ. Risk is a condition where possible events of a decision are known. In other words, risk actions can be predicted based on the chances and impact of occurrence. On the contrary, uncertainty refers to a situation where an individual is unsure of future outcomes. Decision makers are unable to determine the outcome of such event probably as a result of inadequate or no information thus, making uncertainty a difficult situation to address. Risk can be planned for as oppose to planning for uncertainty.

Therefore, every risk in project management is characterized by two important factors which are:

- The likelihood of the risk occurring
- The effect/impact of the risk when it does occur

The essence of planning for risks

Considering the extent to which risk can affect the objectives of project, it becomes imperative for project personnel to carefully plan for it. (Kloppenborg, Contemporary Project Management, Third Edition, 2014) refers to risk planning as the method of describing how to conduct the management of risk activities in a project. Understanding the objectives of the project is central to having an effective risk management plan. The project

manager should take the lead in this process, in order to let team members, understand project objectives and priorities of the various stakeholders of the project. Planning for risk is not a separate entity from the project plan but rather forms an integral component of the project plan. As such, maximum attention should be given to ensure that all possible risk events are identified in the document (risk management plan). It is difficult to plan for risk in a situation where the factors that are responsible to measure project success and stakeholder's priorities are unknown. According to (Kloppenborg, Tesch, & King, "21st Century Project Success Measures: Evolution, Interpretation and Direction", July 2012) the factors for project success are:

- a) Meeting agreements: this includes
 - Ensuring that the technical requirements of the project are met
 - Cost, schedule and specifications agreements are met
- b) Success of the project customer:
 - Ensuring that the needs of the customers are met in terms of product delivering and customer satisfaction
- c) The success of the performing organization:
- d) Success of the project team

Project stakeholder's priorities as stated by (Kloppenborg & Petrick, Managing Project Quality, 2002) are: schedule, scope, quality, budget, contribution to organization and contribution to society.

However, the assessment of risk plays an important role in the management of project; and project managers and team should endeavor to develop robust risk management plan that is adequate enough. Remember, projects are risky venture geared towards addressing a problem; maybe longstanding problem that is difficult to solve in a day. Having a project to address such, will definitely prone to vulnerabilities that amount to risk that must be dealt with in order to achieve the objectives of such project (Cooke, 2017). In essence, risk planning guides the project team in identifying, categorizing, analyzing and responding to risk in the project environment.

The role played by the project manager in risk management cannot be overemphasized. The project manager should lead the process of executing, updating and reviewing risk management activities so that adequate responses will be instituted to reduce its impact peradventure it occurs. Risk can be addressed using varied methods depending on its category and level of urgency. Some risks require immediate intervention by project personnel in order to save the project whereas others might not be as severe thus, requiring minimal or no intervention. Regardless of the severity of the risk, the project manager should ensure that all possible risks are identified. The following actions should be taken by the project manager to help the risk management process:

- Organize a risk management meeting, where project personnel are given the opportunity to identify all the risks associated with the project. This should be done in a fair and transparent manner, for all to make their inputs. No input should be disregarded and in fact, efforts should be made by the project manager to encourage brainstorming session; so as to bring out sufficient risks that might affect the project.

- The project manager should ensure that every risk mentioned in the meeting is documented for further analysis. This documentation informs the risk management plan.
- The project manager should endeavor to assign responsibilities to team members in the management of project risk.
- If possible, other stakeholders of the project should be invited in such deliberations. Risk is not only confined to the technical aspect of the project; but rather, administrative risk should also be identified going forward. It will interest project team, to know that most of the risks besetting projects are administrative; therefore, more attention should be given in that regard.
- Ensuring that there is an effective risk management plan in the implementation of the project.
- Monitor and update risks in the risk management plan
- Ensuring that the risk management plan document is approved by project stakeholders especially the project sponsors.

Risk Identification

The identification of risk is pivotal to the risk planning exercise and as such, the team should ensure that specific risks affecting project success are recognized. Therefore, risk identification is the procedure used by project personnel to document risks attributes and its possible effect on project outcome (Kloppenborg, Contemporary Project Management, Third Edition, 2014). However, this process is preceded by an effective brainstorming exercise usually spearheaded by the project manager.

The identification of risk enables one to understand its nature and gives an idea of how such risk should be handled. It influences project stakeholder's decisions in creating a sustainable project.

Sound project communications emanate from thorough risk identification process that usually guides project decisions (Dr. Brown, 2020). The following should be considered when identifying risks in a project:

- Broaden your information sources in order to capture sufficient risks that might endanger the project
- Be knowledgeable in identifying risks; this will help you to know the areas to consider in the risk identification process
- Explore all the readily available risk identification tools at your disposal and even seek for more tools and techniques that you deem necessary for the process
- Ensure the risk identification process is effective and efficient
- Document all identified risks; never rely on your memory for recollection

Techniques used to gather risk information

- Interview: This is a face to face meeting between the interviewer and interviewee that can help isolate many hidden risks in the project.
- Delphi method: This concept is based on an estimation method where structured group of subject experts are given the opportunity to answer questions in two or more rounds predetermined by a stop criterion. At the end of

each round, the coordinator will deliver anonymous questions to each panelist to make a determination or judgement. However, during this process the range of answers keep decreasing until the group meet at a particular answer, which is deemed to be the correct answer.

- SWOT analysis: SWOT is a planning tool used in the evaluation of organizational strengths, weaknesses, opportunities, and threats. It is used to classify the internal and external factors hinges on attaining project objectives. Strengths and weaknesses are considered from within the organization, and opportunities and threats are from without. Risks are the threats and opportunities facing the project.
- Group discussion
- Review of previous project documents
- Diagramming techniques
- Expert opinion

Each of these techniques can be used in identifying potential risks that might affect the objectives of the project. Risk identification is iterative in nature; because as the project progresses throughout its lifecycle, new risks might show up. Probably the previous risks would have been addressed while these new ones come up.

Everyone’s input is needed in the effective management of project risks hence, the more the merrier. It is always wise for the project manager and team to incorporate more people especially those with high technical skills in the management of project risk. With these people around, more risks will be identified and analyzed thus, improving the project. The management of risk as put forward by (Kloppenborg, Contemporary Project Management, Third Edition, 2014) involves the following activities:

- The decision on the risk premium that should be charged for the project. This decision is dictated by the nature and complexity of the project and technology that will be used. High risk projects should cost more thus, requiring executive approval.
- Lessen external risk through contract clauses and internal ones through agreements.
- Careful management of the risk through weekly meetings and reports

ID #	Risk identified	Risk category	Risk description	Risk causes	Risk response	Risk owner	Risk status/assumptions	Risk target

In identifying risks, the project team must be mindful of the following:

- Possible deviations from the risk management plan
- The impact to the objectives of the project if nothing is done about the risk
- Whether the assumptions made in the risk register are consistent with the project plan
- Alternative risk response strategies that will prove beneficial to the project

Categorizing risks

In order to properly address risks, it’s expedient for project personnel to quickly identify and categorize each risk. Risk

The risk register becomes the deliverable of the planning process. It is a tool used by project team to document risk and provide suitable addressing method to reduce its impact if it occurs. The risk register includes categories of risk, risk identified, risk causes and risk responses; thus, creating a comprehensive understanding of how to deal with risk in project management.

Uses of project risk register

- Easy flow of communication among project team with respect to objectives, cost, risk etc.
- Enables project stakeholders to better understand the impact of project risks identified
- Able to know the status of each risk as the project progresses
- Helps the team to better monitor and control risks
- Helps management in the review and update of project risks
- Serves as a reference document for future projects
- Helps project team in responding to each risk based on its level of severity
- Plays a strategic role in making project decisions. Depending on the type and attributes of risks captured in this document, management can decide to proceed with the project or not.
- Gives direction to the project team in the management of risks throughout the project.

In the identification of risks, it is a good practice to delve into the possible causes of risk. Most risks are tied to some obvious causes that can be easily identified and resolved; once that is done, the risk will dissipate. Dealing with ‘root causes of risk’ in risk planning is an essential component of addressing the challenges posed by project risks. In addition to the root causes of risk, the project team might want to establish risk relationships; situations that lead to the occurrence of risk. Such situations are referred to as triggering conditions; serves as warning call, that project manager and team should not treat lightly.

A diagrammatic illustration of the details captured by the project risk register. There might be slight variations from other registers depending on organizational specifics but, the main components are always included:

categorization can take varied format depending on several factors such as:

- When the risk occurs in the project lifecycle
- The project objectives impacted by the risk such as cost, schedule, scope and quality when it occurs
- The performing organization (Kloppenborg, Contemporary Project Management, Third Edition, 2014).

In addition, some risks are referred to as major or minor based on their possibility and impact of occurring. Nevertheless, whether major or minor, all risks should be isolated and treated accordingly. Every risk should be catered for. All risks considered major should have an appropriate contingency plan for addressing it. Minor risk

does not need such plans but rather should be monitored and assessed regularly to see how it evolves. Be watchful as some risks can be minor at the time of identification but later progresses to become a major risk, that requires intervention.

2. Analyzing Risks

Risk analysis forms the backbone of an effective risk management plan. It informs the project team as to what intervention should be employed in tackling both major and minor risks. Minor risks are relatively easy to handle and most do not actually require contingency plans; rather informal intervention such as careful observation can suffice. However, with major risks; the project team would have to probe further in its assessment. Risk analysis involves both qualitative and quantitative analysis.

Qualitative risk analysis involves the prioritization of known risks for further action. In doing this, the risk probability and impact are central and thus should be evaluated to predict the possible effect of each risk on the project. Below is a diagrammatic illustration of how such parameters are used in the qualitative analysis of risks:

		Impact				
		Very Low	Low	Medium	High	Very High
Likelihood	Very High	Yellow	Yellow	Red	Red	Red
	High	Green	Yellow	Yellow	Red	Red
	Medium	Green	Yellow	Yellow	Yellow	Red
	Low	Green	Green	Yellow	Yellow	Red
	Very Low	Green	Green	Green	Green	Yellow

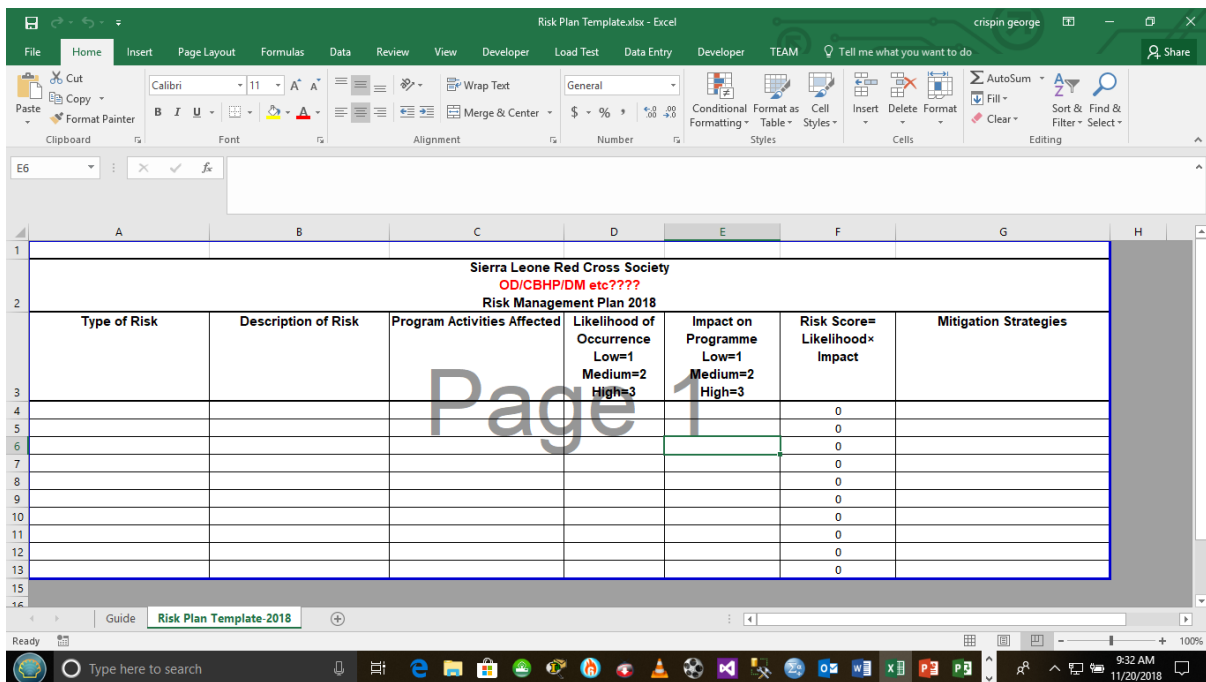
Source: <https://www.google.com/search?q=project+risk+matrix&tbm=isch&source=iu&ictx=1&fir=u0MQ3WyWkTVX>

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The above diagram is known as a risk matrix and this helps the project team to identify which risks should be concentrated on. This matrix uses colour codes to depict major risks from minor ones that require minimal or no intervention. The impact and likelihood of risk in the diagram ranges from very low to very high

- Red colour = major risks
- Yellow = medium risks
- Green = minor risks

However, the researcher has been able to use the contents of the risk register to estimate the value of a risk. This is done by multiplying the values of both probability and impact of occurrence.



Source: developed by researcher

Risk value = probability * likelihood of occurrence
On the other hand, quantitative risk analysis focuses on the numerical estimation of the likelihood of project meeting its

cost and time objectives. Some of the quantitative risk analysis techniques are thus:

- Decision tree analysis: a technique used to evaluate several options including projects in the midst of uncertainties.
- Sensitivity analysis: this technique is used to estimate the impact of risk on the project. It inspects the extent to which risk in each project affects project objectives.
- Simulation: a method that uses project model in ascertaining the potential impact on project objectives.

How to respond to risk

There is no use having a risk management plan document that cannot provide risk response strategies. Thus, making risk response a significant phase in the process of managing risks. Risk response refers to the mechanisms employed by the project team to provide options and determinations in the enhancement of opportunities and significant reduction in threats to the project. The responses slated for a risk are managed by the risk owner¹. There are several risk response strategies used in project management including:

- Avoid: This involves taking action to either reduce the probability of the risk and/or its impact to zero. In either case, this response enables the risk to be circumvented entirely.
- Transfer: This involves shifting the risk to a third party so that they are responsible for its management and impact. It does not eliminate the risk it simply transfers the liability to someone else. This can be done by either taking out insurance (the insurance company is now liable) or having the work done under a fixed-price contract (the contractor is now liable).
- Mitigate: Steps taking to reduce the likelihood and impact of risk occurring. In addition, the necessary measures to patch-up the damage caused by the risk, peradventure it occurred.
- Accept: A strategy usually employed when the risk is minor/low with respect to its impact and probability, or when it is not practically feasible to respond to it. Such risk can be accepted to continue with the project.
- Research: This refers to learning more about the risk. This enables the project team to have better understanding of the risk and find possible solutions.
- Exploit: Using more organizational resources in order to get the project completed on time with reduced cost.
- Share: Bringing in a third party to take ownership of the project in order to capture opportunities for the benefits of the project.
- Enhance: The addition of resources into the project to speed up the process.

This is a continuous process throughout the life of the project; that requires adequate monitoring exercise in order to detect new and changing risks that might crop up. It constantly evaluates the response strategies used in dealing with identified risks in the risk register. Therefore, risk monitoring benefits the project in the following ways:

- Timely identification of risks
- Ensuring that the project risk register is updated frequently

¹ Someone with the responsibility to monitor and manage project risk

- Ensuring that risk response strategies are adequate and effective enough
- Helps in providing regular updates on risk status
- Put the project team in a position to handle unforeseen risks that might arise during project implementation
- Helps in the effective planning of project risks

3. Conclusion

In the development of a robust risk management plan; senior management, project team and other project stakeholders should be deeply involved in order to ensure that all possible risks are identified and responded to. In essence, the risk management plan provides the required direction needed by project personnel to guide the project in achieving its objectives.

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