
Uncovering All Of The Risks On Your Projects¹

Paul Burek, PMP, CSM
Solutions Cube Group LLC

Abstract

Through my experience working with project teams, in many industries, on hundreds of projects, I have learned that although Project Managers (PMs) are expected to manage risk on their projects, many times they end up fighting fires and managing the problems that result from unmanaged or unknown risks. There are many reasons why Project Managers avoid Risk Management and resort to firefighting project problems. Common perceptions PMs have are:

- My project won't hurt anybody
- Our company has a "kill the messenger" syndrome, so it is best not to bring up risks
- Firefighting is rewarded, the more problems I can solve, the better I look
- Failure is not an option, so why focus on risks, our team won't allow them to impact the project
- Risk is inevitable, so why bother trying to avoid or manage it.

Another underlying reason for not managing risk on projects, or not managing it well, is because the Project Manager does not have the right tools and techniques for risk management. It all too common for PMs to understand risk management theory, but not be skilled in the transformation of this theory into practical application. Effective risk management includes engaging the project stakeholders throughout the entire risk management process: identifying, assessing, responding to and managing risks throughout the life of the project.

Several factors can stand in the way of an effective Risk Management effort including:

- Preparing a Risk Plan with insufficient project knowledge
- Risk Management is not an integral part of the organization's project methodology
- Too little time is invested in identifying and managing risk
- Too few risks are identified (10 – 20 risks versus hundreds of possible risks) and those that are identified are not fully understood or clearly defined

This paper will share techniques for enhancing the success of risk management efforts by uncovering a larger number of well written project risks which may need to be managed

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throughout the life of a project. It will explain and demonstrate the use of the Risk Meta-Language technique (Hillson, 2004, p73) enabling stakeholders to fully develop actionable risk statements. Additionally this paper will provide an overview of multiple sources which can be used to uncover risks on projects.

Overview of Risk and Risk Management

In order to identify project risks, it is necessary to first agree on the definition of what a project is. The PMI PMBOK defines a project as “A temporary endeavor undertaken to create a unique product or service” (PMBOK Fifth Edition, 2013, p3). Temporary meaning the project has an end, and unique meaning that the project is bringing about change, by providing an end result that is different from what an organization is currently experiencing. Uncertainty is directly associated with change being introduced by a project; however uncertainty on its own is not the same as project risk.

Project Risk is defined as any uncertainty, or SURPRISE, that if it occurs, would affect one or more Project Objectives negatively (a threat hurting the project’s cost, time, quality or scope) or positively (an opportunity enhancing the project’s cost, time, quality or scope). Project Risk arises from the interaction of objectives and uncertainty. There must be an impact (positive or negative) to one or more Project Objectives to have project risk. For example, the chance that it might rain this afternoon is an uncertainty – but why would we be concerned about this on our project? On the other hand, knowing that because rain has been forecasted for this afternoon, it might rain hard enough to prevent us from pouring the cement for our new home’s foundation, which would cause a delay in completing the foundation on time. This describes an uncertainty along with a statement of impact we can sense concern for. Problems and issues are also not project risk either since these have already occurred and the uncertainty surrounding them no longer exists.

Risk Management is the systematic process of identifying, analyzing, and responding to Project Risk. Risks often receive a “bad rap” when being considered during a project because they are most often viewed as having negative impacts if they were to become reality. Mature risk management practitioners recognize that risk uncertainties could produce positive or negative outcomes if the uncertainties occurred; therefore, they look for both types of outcomes when executing their risk management processes. Risk Management should focus on maximizing the probability and consequences of positive impacts to Project Objectives and minimizing the probability and consequences of negative impacts on Project Objectives.

The Risk Management Process

The Risk Management Process (Exhibit 1: Risk Management Process) consists of five process steps:

- Risk Definition Process

- Risk Identification Process
- Risk Assessment Process
- Risk Response Identification Process
- Risk Monitoring / Reviewing Process

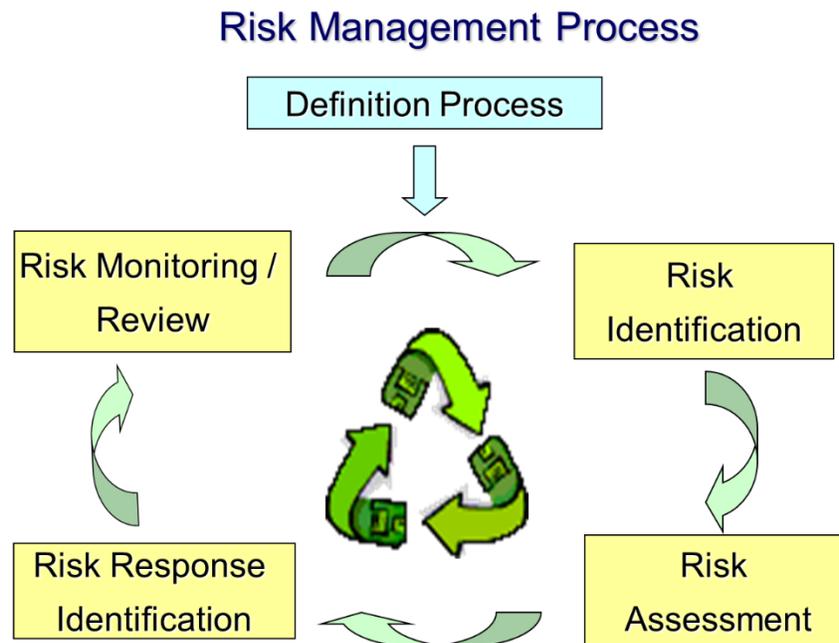


Exhibit 1: Risk Management Process

Risk Definition Process

The Risk Definition Process occurs one time during the project to create the Risk Management Plan. The other risk management processes are iterative and occur repeatedly throughout the project lifecycle. The Risk Definition Process defines the scope of a project's risk management effort. The Risk Management effort must be clearly defined and communicated to the project stakeholders. During this process, determinations are made as to which Project Objectives will be assessed for risk exposure. The objectives are categorized as Cost (cost to deliver the project within budget), Time (schedule for delivering the project in the agreed time frame) Quality (delivering the project to the specifications agreed to by the stakeholders) and Scope (delivering the expected requirements / functionality for the project).

The organization's risk tolerances and thresholds take into account how risk adverse or risk accepting the organization is. This refers to not wanting to take any risk versus balancing the risk occurrence with the negative impact or positive reward on the project. Understanding risk tolerances and thresholds influences the types of project risks which are identified and the risk responses assigned to these in the Risk Plan (e.g., reputational risks may not be tolerated at all,

schedule delays of 1 week or less may be acceptable, etc.).

Once the risk tolerances and thresholds are determined, the project stakeholders will be able to adjust, or create, a Probability / Impact Matrix (Exhibit 2: Probabilities – Impacts Matrix Example) which is used during the Risk Assessment Process to assess risk scores. Project teams can focus on the risks with scores which fall into the red zone on the Probabilities – Impacts Matrix and target these for developing responses and actively managing. Risks with scores in the yellow and green zones may have less aggressive responses or actions taken to manage them and are often put on a watch list.

	Risk Score (Probability x Impact)		
Probability Values			
3	3	6	9
2	2	4	6
1	1	2	3
	1	2	3
	Impact Values		

HIGH	MEDIUM	LOW
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Exhibit 2: Probabilities – Impacts Matrix Example

Risk Identification Process

The Risk Identification Phase begins the repeatable part of the Risk Management Process, and occurs after completing the Risk Definition activity. Risk Identification is the process of exposing and recording all foreseeable risks to the project objectives. The Risk Register is the key project output used to record and track risks, and is built in progressive elaboration waves while executing the Risk Management Process. This deliverable is initiated with the identification of project risks (see Example 3: Risk Identification Example). During the Risk Identification Process, I like to conduct a collaborative meeting with the project stakeholders combining brainstorming and clarification of risk ideas. As I lead them through an activity to document risk statements, I have them start with a list of risk uncertainties. These statements will be clarified further into full risk statements which distinguish between the cause of the risk, the risk uncertainty and the impact of the risk occurring (positive or negative) on the project objectives.

When I conduct meetings to facilitate this activity, I have adopted the use of a Risk Meta-

Language technique enabling stakeholders to fully develop a risk statement. The elements of the Risk Meta-Language are:

As a result of <definite cause>, an <uncertain event> may occur, which would lead to <effect on the project objectives>.

The “definite cause” clause describes facts or conditions that exist in the project environment, which give rise to the uncertainty. Use present tense verbs to describe this part of the risk. The “uncertain event” clause describes uncertainties that may or may not occur, and if they do, they affect one or more of the project objectives. Use conditional verbs to describe the “uncertain event”. Lastly, the “effect on the project objectives” clause describes the unplanned variations from the Project Objectives of cost, schedule, quality, or scope. Use future tense verbs to describe this part of the risk.

Risk Identification										
ID	Risk	Prob. 3-Almost Cert. 2-Fairly Likely 1-Not Likely	Impact				Score Prob. x Impact	Risk Response Type (Avoid, Transfer, Mitigate, Accept) & Description	Contingent Action	Resp. Person
			C	T	Q	S				
RSK-001	<i>Because we cannot control the availability of our project resources, we may have to develop the critical data interfaces with less experienced staff which could affect our ability to deliver the complete interface solution.</i>							•	•	•

Exhibit 3: Risk Identification Example

Let’s step through an example of creating a risk statement by applying the elements of the Risk Meta Language technique. I’ll start with the uncertain event component of the risk meta-language using conditional words such as: may, might, could, possibly, etc.:

As a result of <definite cause>, **we might misunderstand the customer’s requirements**, which would lead to <effect on the project objectives>

At this point in time, we have not misunderstood the customers’ requirements, there is only uncertainty around this outcome occurring. This statement does not have enough information to begin planning risk responses so we will look at underlying reasons as to why we might misunderstand the customer’s requirements by adding the definite cause component of the risk meta-language. This clause uses present tense words such as: is, has, has not, are, etc. to state facts or conditions that exist in the project environment:

Because our organization has never done a project like this before, we might misunderstand the customer’s requirements, which would lead to <effect on the

project objectives>

We now have identified an existing condition contributing to the possibility of an uncertain event occurring. Although stakeholders may think they know enough at this point to identify risk response actions, we still have not substantiated why we need to care about the uncertainty occurring – uncertainty on its own is not the same as project risk. We need to document the impact to the project objective(s) clause to understand the positive or negative impact that would result if the uncertainty did occur. This clause uses future tense words such as: will, will not, would, etc. to clarify the impact on project objectives:

Because our organization has never done a project like this before, we might misunderstand the customer’s requirements, and our solution would lack functionality needed to increase the sales of the product.

After using the Risk Meta-Language technique to create a fully defined risk statement, we have enough information to assess the probability and impact of the uncertainty occurring, and identify appropriate responses for avoiding or exploiting the definite cause in order to encourage or discourage the impact to the project objectives. The Risk Meta-Language not only provides a powerful tool for the stakeholders to write a complete project risk statement, it also provides a mechanism to uncover many other project risks which may need to be managed during the project. Each of the three components of the Risk Meta-Language can be thought of as dials which can be turned or tweaked, enabling stakeholders to uncover other project risks. By separately modifying each component of the meta-language, new risks, which otherwise may be overlooked, come to light when considering:

- different uncertainties which may be triggered by the same definite cause
- different definite causes may contribute to the existence of the same uncertainty
- different project objective impacts which would result if an uncertainty becomes a reality.

The benefit of turning the dials, is many more risks will be identified and can be included in the risk register for assessing and, based on their risk scores, responded to and managed by the project stakeholders.

Let’s step through examples of turning the Risk Meta-Language dials to uncover additional risks. We will start with the initial project risk statement, shown below, which was defined for the home remodel.

As a result of using an unlicensed electrician for wiring on our home remodel project (**definite cause**), the new electrical system may not be up to city code (**uncertain event**), which would require wiring updates costing more than we budgeted for this project (**impact: negative affect on costs**).

First let’s turn the “definite cause” dial and look at other reasons why the electrical system may not be up to city code.

Because our home was built in 1955 (definite cause), the new electrical system may not be up to city code (uncertain event), which would require wiring updates costing more than we budgeted for this project (impact: negative affect on costs).

The uncertain event of the new electrical system not being up to city code still exists and so does the impact to the project cost of exceeding the budget. However; these are now driven by the definite cause of the home being built 60 years ago. The value of recognizing this fact, is if the stakeholders decided to respond to the initial risk statement and staff the project in a different manner - not using an unlicensed electrician, we can now see this action alone does not remove the uncertainty of the electrical system not being up to city code. Different risk responses may be necessary to manage this new project risk.

Now let's turn the "impact dial" to see if there are other project objectives which would be impacted, beyond the cost impact, even if the same definite cause conditions and uncertain event did not change.

As a result of using an unlicensed electrician for wiring on our home remodel project (definite cause), the new electrical system may not be up to city code (uncertain event), which would require additional wiring work that adds an extra week beyond what is planned to the project (impact: negative affect on schedule).

The same uncertainty of the new electrical system not being up to code exists as a result of using an unlicensed electrician, but now we see that a negative schedule impact would result in addition to the budget impact. This project risk may have a different risk score than the original project risk and it may warrant a different type of response, but if it had not been uncovered and documented in the Risk Register, the project stakeholders would not have been able to manage it.

Continuing with the turn of the Risk Meta-Language dials, we can tweak the "uncertain event" dial and discover other uncertainties which are triggered from the same definite cause and would produce the same project impact if the uncertainty occurred.

As a result of using an unlicensed electrician for wiring on our home remodel project (definite cause), the new electrical system may work as expected (uncertain event), which would require wiring updates costing more than we budgeted for this project (impact: negative affect on costs).

In this example, the uncertainty about the electrical system isn't focused on not meeting the required city code, but that the electrical system may not work as it was designed to work. If this uncertainty became reality, there would still be wiring updates driving costs higher than what has been budgeted for the project. It becomes apparent how many additional project risks can now be uncovered, as the dials are turned, and these risks will be added to the Risk Register to be assessed and consideration given to actively managing or place the risk on the Risk Watch List.

Finally, let's look at an example of turning the Risk Meta-Language dials and discovering a positive opportunity project risk evolving out of a prior threat project risk statement.

As a result of using an unlicensed electrician for wiring on our home remodel project (**definite cause**), we may be able to have her perform most of the work and use a licensed electrician just to inspect the work (**uncertain event**), which would reduce the labor costs of the project. (**impact: positive affect on costs**).

In this example, a new uncertainty is identified which, if it occurred, would provide a benefit for the project. Depending on the probability of this uncertainty occurring and the amount of costs savings, this could be an opportunity which would be unfortunate to overlook during the project. Missing out on this benefit would likely occur, if the project risk was never identified, assessed and managed.

As a best practice, keep each variation of the project risk statements separate from each other - do not to start combining the risk statements into one long statement with multiple definite causes, uncertainties and impacts. Remember, although the number of risk statements in the Risk Register will increase significantly when we leverage the Risk Meta-Language technique, not every project risk needs to be managed. Every project risk needs to be independently assessed and scored so that the project stakeholders can be make the appropriate decisions for which project risks they will define responses for and actively manage.

Sources and Methods For Identifying Project Risk

Sources For Identifying Project Risk

There is no reason for a project team to start from a blank slate when identifying their project risks. There are multiple project deliverables which are available to the project stakeholders to help them identify project risks. During different stages of the project lifecycle, when I lead teams through a risk identification collaborative meetings, we look at these deliverables:

- Project Objectives
- Context Diagram (Level 0 process model)
- Project Assumptions
- Critical Success Factors
- Project Constraints
- Project SWOT Analysis
- Business Requirements
- Technical Requirements
- Architectural Designs
- Lessons Learned (current and prior projects)
- Risk Breakdown Structure
- Work Breakdown Structure
- Organizational Breakdown Structure

Basically, most project milestone deliverables provide new information about the project which can be analyzed to uncover new or changing project risk statements. We will look at several of these in more detail to understand how they are used to identify project risk.

In the early of phase of the project, the Project Charter and the Project Scope Statement will already be created and can be used as a source for risk identification. They provide information about Business Objectives and Project Objectives, Project Constraints, Critical Success Factors and Project Assumptions. Remember, for a project risk to be relevant to a project, it must have an impact on one or more of its Project Objectives. As risks are being identified, the Project Objectives are reviewed to assess which objective(s) would be impacted. Additionally, as the project progresses through Scope Definition and Design Phases, the team will be able to utilize the Business Requirements and the Technical Requirements as a source for more project risks. These deliverables describe the specific needs to be satisfied by the project (Business Requirements) and solutions for how each need will be met (Technical Requirements). Project stakeholders should be asking themselves if there are any uncertainties related to being able to meet a project need or related to the type of solutions which are being proposed.

These next three deliverables are components of the Project Scope Statement and also sources to be considered when identify project risk. Project Assumptions are initially created as part of the Project Scope Statement and continually adjusted as the project progresses. They communicate expectations about decisions which are outside the control of the project team, but the project team is basing their project actions on these decisions as if they are valid. Critical Success Factors communicate the mandatory project accomplishments which the project team has control over meeting and must be met for the project to be considered a success. Project Constraints define the limitations imposed on the project – limits for how the project is executed or limits related to the type of solution which can be implemented. When reviewing these deliverables, the stakeholders perform an instability test and sensitivity test to uncover new project risks.

When reviewing Project Assumptions, Critical Success Factors, and Project Constraints the project stakeholders will review each statement, test them for instability by asking and answering “How likely is it:

- This assumption is going to false?
- The decisions we make and actions we take will enable us to meet a specific Critical Success Factor?
- This Critical Success Factor will be removed from the project?
- This Constraint will be relaxed or removed from the project?

Based on the answers to these questions, the stakeholders may uncover uncertainties which they need to evaluate for impacts to the project objectives using the sensitivity test and answering the question, “What is the impact to the project objective(s), if any, if:

- This assumption turns out to be false?
- This Critical Success Factor cannot be met?

- This Critical Success is removed from the expected outcomes of the project?
- This Project Constraint was changed in some manner (an increase or reduction of the limitation)?

If uncertainty does exist (which it likely will) and resulting impacts to project objectives are evident, these statements can be transformed to fully defined project risk statements using the Risk Meta-Language.

Another source for identifying project risks is the project's SWOT Analysis - the current assessment of the project's Strengths, Weaknesses, Opportunities and Threats (SWOT). The SWOT Analysis is ideally created for a project during the Project Scope Definition phase. Because project risks can have either positive impacts on the Project Objectives (opportunity risk) or negative impacts on the Project Objectives (threat risk), the stakeholders will need to evaluate the Opportunity and Threat components of the SWOT. These components can be fully developed into project risk statements using the Risk Meta-Language. While the strengths and weaknesses may not have a direct tie to a project risk, they will provide insight to the project team's influence on exploiting or missing out on opportunities, as well as eliminating or reducing the exposure to threats. When the project stakeholders review the strengths and weaknesses included in the SWOT analysis they should consider these influencing points as they assess the probabilities of the defined project risks occurring:

- Because of this strength, it may be easier to exploit a specific opportunity
- Because of this strength, we may be able to reduce exposure to a specific threat
- Because of this weakness, it may be harder to exploit a specific opportunity
- Because off this weakness, we may increase our exposure to a specific threat

Methods For Identifying Project Risk

Multiple techniques can be considered when identifying project risk statements. Brainstorming, is one of the most frequently used techniques, to identify other project risks. The brainstorm activity can be structured to control or provide a focus for the type of ideas shared during brainstorm. Structuring the idea gathering will help to minimize overlooking related risks.

Several ways to provide structure is to focus brainstorming on the components of various project break down structures such as:

- Work Breakdown Structure – provides focus on the outputs which will be produced as part of the project effort and outputs of the resulting project solution
- Project Lifecycle – provides focus on the phases of the project and the activities being performed during the project
- Risk Breakdown Structure (see Exhibit 4: Risk Breakdown Structure) – provides focus on common areas of risk associated with projects
- Organizational Breakdown Structure – provides focus on the human resources and their areas of responsibility on the project



Exhibit 4: Risk Identification Example

A risk identification brainstorming activity provides value to the project beyond identifying a large number of project risks. When conducted correctly, brainstorming is great team building activity and encourages high team buy-in of the ideas which come out of the brainstorm session. Keep in mind that there are also shortcomings associated with a brainstorming activity. The most natural result of a risk identification brainstorming session is a long list of threat related risks. Stakeholders often view project risks as negative things to control or manage and when we pull a team of multiple stakeholders together it is easy for the negative aspect to drive the contribution of ideas. During the brainstorm, I like to remind the participants of the definition of risk presented early in this paper and provide examples of both positive (Opportunity Risk) and negative (Threat Risk).

Another shortcoming of a brainstorming session is that the ideas shared are likely to be limited due to limited experience and or perceptions of the participants. It is beneficial to invite a cross section of stakeholder representatives from all areas affected by or involved in the project. Consider using the Organizational Breakdown Structure as a tool for identifying appropriate brainstorm participants.

Working through a Project Risk Checklist is another method of identifying project risks. This checklist should be part of the organizational assets created for every project. The checklist is a list of closed ended questions which are reviewed and answered to promote thought about areas of the current project which may have uncertainty associated with them. Example questions may include:

- Are all of the requirements documented for the project?

- Are all of the requirements stated in an unambiguous manner and understood the same way by all stakeholders?
- Are all of the project interfaces defined?
- Are the resources listed in the Organizational Breakdown Structure available to the project as needed?

Benefits of using a Project Risk Checklist is that it is already developed / evolved from other projects it is fairly quick to access and easy to use. Questions just need to be assessed for relevance to the current project and then considered and answered if they are relevant.

A short coming of the Project Risk Checklist is since the checklist has evolved over time from other projects, the stakeholders might avoid overlooking common risks which have not yet been identified and managed on other projects. Another shortcoming of using a Project Risk Checklist is that group input is not required to use the checklist. A Project Manager or project team member could be expected to work through the entire checklist on their own and identify the risks they feel are applicable.

Summary

Utilization of the Risk Meta-Language technique will ensure that a clear tie is established between the existing conditions in the project environment which give way to uncertainties which, if they were to occur, would have a definite impact on the project objectives. The number of risk statements which can be identified will increase significantly if each risk statement is analyzed from multiple perspectives. These perspectives are achieved by turning the dials of the meta-language components and looking for additional drivers contributing to the same uncertainties as well as multiple uncertainties triggered by a single definite cause. The most important risks to focus on will be based on the decisions made during the Risk Definition Phase regarding sensitivities to impacts on each Project Objective. Most importantly, remember, risks which are not identified cannot be managed.

By combining multiple risk collection methods, the Project Manager will reduce the likelihood of the team overlooking risks which would impact the project if they were to occur. This approach also provides an opportunity for the project stakeholders to look for project impacts from multiple perspectives. The use of multiple methods for identifying project risk will also drive higher stakeholder buy-in to the risk management process and promote a broader understanding of the risks which are identified which in return enhances the overall quality of the risk management effort.

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About the Author



Paul Burek, PMP, CSM

Texas, USA



Paul Burek, PMP, CSM, COO of Solutions Cube Group LLC, brings his thirty plus years in project management, meeting facilitation and course development to his project management practice. Paul is a pioneer and leader in the field of collaborative meeting facilitation. He has planned, created and conducted meetings leveraging joint application design (JAD) techniques to engage project stakeholders in idea generation, decision making and interactive real time deliverable creation covering all aspects of the project lifecycle.

Paul has designed and implemented a training program in which he bases his training concepts on experiences and lessons learned throughout his expansive project management career. This perspective has resulted in training which closes the gap between project management theory – “What should be done on projects” and techniques for workable project practices – “How to actually do it”. His training has a global reach featuring more than 100 project management course topics presented to students virtually and /or face to face in more than 20 countries. He has been invited to deliver training at the local, regional, and national levels for the Project Management Institute, other professional organizations, Fortune 100 and 500 companies and organizations in the private and government sectors.

Paul can be contacted at paul.burek@solutionscubegroup.com