MASTERING RISK AND PROCUREMENT IN PROJECT MANAGEMENT
A Guide to Planning, Controlling, and Resolving Unexpected Problems

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Mastering Risk and Procurement in Project Management

A Guide to Planning, Controlling, and Resolving Unexpected Problems

Randal Wilson
I would like to dedicate this book to my wife Dusty and sons Nolan, Garrett, and Carlin for their support and patience through this project.
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Introduction

Manufacturing, distribution, sales, and service organizations have one thing in common: the requirement of resources. An organization’s success, in many cases, is a direct function of how it obtains and manages resources to carry out its strategic business objectives. The organization’s first and most important task is to obtain management personnel who are skilled and experienced in acquiring and managing resources, which may include:

- **Human resources**
- **Materials and supplies**
- **Equipment and facilities**
- **Transportation**
- **Finances**
- **Intellectual property**

In the process of obtaining resources within all organizations, either for daily operations or for special projects, there are two givens: Resources must be obtained, and they have the potential to be problematic. The challenge, then, is how to obtain the correct resources at the right time and for a cost equitable for the organization, as well as how to manage any potential problems that may occur with a given resource. *Mastering Risk and Procurement in Project Management* has been designed not only to explain basic concepts in risk and procurement management, but also to offer tools and techniques that can be used by a project manager, project staff, and supporting departments that would be associated with risk or procurement.
Problems Are Inevitable

As organizations utilize resources in daily operations and within projects, it becomes quickly evident that a variety of problems and issues can be associated with resources. Human resources are often the primary resources used across organizations. Given the potential of variability in skills, individualism, reliability, and work ethic, they can bring to the table an array of challenges and problems. An interesting component of human resources is that although people are often the source of a variety of problems, they also have the ability to solve them, which is typically not the case for other types of resources.

Problems can also be associated with other resources, such as materials and supplies. They can be incorrect, get damaged, or fail as a result of poor quality. Equipment and facilities can develop problems that can render them less effective or inoperable altogether. Some organizations can have financial challenges that make it difficult to fund projects, constraining project managers in their need to obtain and schedule resources for work activities.

Regardless of what type of resource is used, problems are inevitable, and the project manager must develop a system to deal with problems throughout the project lifecycle. As problems are not designed to happen on projects, they are typically characterized as having a potential to occur, which we commonly refer to as risk.

The second component of projects that inevitably develops problems is associated with purchasing items required for project work activities and acquiring subcontractors. The purchasing aspect of a project can itself introduce several types of problems and is in many cases connected to risk management. The area of purchasing and acquiring items for the project is commonly referred to as conducting procurement.

What Is Risk?

Risk is generally defined within project management as a potential influence producing a positive or negative outcome. We look at the definition of risk within the context of a project as any influence to a work activity that generates an outcome that was not expected.
EXAMPLE  A work activity is being performed outdoors, and poor weather is imminent.

Rain, in and of itself, is not necessarily bad; Earth requires rain, and on some days it can actually be relaxing. Rain becomes a problem if it impacts a work activity, such as damaging materials and supplies, rendering equipment inoperable, or simply forcing a shutdown, causing a schedule delay. The rain therefore has the potential to create an influence that can alter the outcome of a work activity, thus creating a problem. The rain is not designed as a normally scheduled part of work activity, so we consider it to be a potential “risk.”

**Bad Risk Versus Good Risk**

Events or circumstances that have a potential to influence work activity can result in either a negative or a positive outcome. As we saw in the example, relative to a specific work activity, rain can present a bad risk. Another form of potential risk is the use of external human resources that have been subcontracted to perform work activity. These individuals not being a part of the organization can present issues such as difficulty in team environments, ignorance of organizational processes and culture, or personality conflict with management and staff they work with directly—all typically risks associated with a negative outcome. However, over time the same external resource might exhibit a much higher level of ability and knowledge, therefore completing the assigned task much more quickly and allowing the work activity to be ahead of schedule. So, although there is a potential risk in using subcontractors, their influence can also create a positive outcome.

Project managers should always have a conceptual understanding of risk—that although risks can generate negative outcomes, there are occasions where positive things come out of what was thought to be a potential negative risk. The project manager would then seek to exploit these positive outcomes to yield the maximum benefit for the project.
Risk Versus Uncertainty

As the project manager plans work activities and evaluates all the resources that are required, he begins to see where potential problems might insert themselves. This is where the project manager can begin to identify risks and possibly plan responses. As we have seen, some influences can be identified as “potential” problems and therefore can be planned for and worked around, but there are also issues and influences that cannot be anticipated and were nowhere on the radar. These are called uncertainties. Risks are influences that can be identified as having a potential to create a problem, whereas uncertainties are problems that happen that could not have been identified prior to the work activity.

EXAMPLE

An uncertainty might be in the case of an earthquake that could potentially damage a construction project. Although rain, tornadoes, lightning, mudslides, and earthquakes are often called acts of God and are the very definition of uncertainty, they can also be considered risks because our current technology can predict the potential of inclement weather, and thus they can be planned for to some degree. Uncertainty would be an influence that cannot be foreseen and that occurs without notice. In the case of a construction project, an uncertainty could be a massive earthquake that happens without notice, resulting in a negative outcome.

What Is Procurement?

Most projects require resources that are obtained through purchasing or subcontracting; this is called conducting procurement. Most organizations have individuals or entire departments dedicated to the task of purchasing what the organization needs to run its daily operations. When a project manager has outlined all of the work activities and resources required to complete each activity, she submits a
list of all items that need to be purchased and/or contracted throughout the project lifecycle. Procurements can be classified into two general categories: items that need to be purchased and resources that must be managed through a contract agreement.

• **Purchases**

  Items that need to be obtained for project activities are simply purchased through suppliers or vendors. This can be accomplished by the purchasing agent selecting items through a catalog or website, contacting the supplier/vendor, placing the order, establishing delivery requirements, and agreeing on payment terms and conditions. As soon as the item has been delivered and it is confirmed that it meets expectations, payment can be made and the transaction closed.

• **Contracts**

  Another form of obtaining resources is the use of a contract agreement. In many cases, contracts are used to acquire external human resources needed for special tasks on work activities or perhaps the lease of equipment or facilities that will be used on work activities. As there is a certain amount of risk for both the buyer and seller in acquiring these type of resources, outlining the conditions of the contract is important and must cover the following:
  
  • Scope of work to be performed
  • Specific identification of a piece of equipment or facility
  • Terms of its use or environment
  • Duration that the buyer plans to have the resource
  • Agreed upon price
  • Special terms or conditions that would address risk for the buyer or seller

  An agreement signed by both parties forms a legal binding contract requiring both parties to fulfill their responsibilities identified in the document(s).
Risks and Procurement Go Hand-in-Hand

Risks associated with various aspects of the project might include correctly interpreting the customer’s requirements for a deliverable, selecting projects that are appropriate for the organization, and availability of resources within the organization to carry out project work activities, but there are also risks associated in the process of conducting procurement. Most projects require items to be purchased and/or some form of contract agreement that will have the potential of introducing risk. This being the case, why are risks associated with things that have to be purchased?

- **Risk Is a Threshold Within Procurement**—The fundamental philosophy regarding risk is the identification of a potential problem that might or might not happen. When the purchasing agent is tasked with obtaining an item from a supplier/vendor, there are three primary components that determine the transaction’s success:
  
  - **Buyer’s Responsibility**—To start the transaction, the purchasing agent must ensure he has all the information required to correctly identify what needs to be purchased. He must also identify a seller that can provide the item in the correct form, fit, and function; at a reasonable price; and within time constraints. If the purchasing agent has correctly identified a seller that can fulfill these requirements, the transaction can be initiated. The purchasing agent, project manager, or other staff must confirm delivery of the item and that it has met all identified requirements. The purchasing agent must then ensure that full payment has been made, and the transaction can be closed.
  
  - **Seller’s Responsibility**—In response to an inquiry by a purchasing agent, the seller is responsible for ensuring she understands all of the requirements of the item that is intended to be purchased. The seller must inform the buyer of any special options associated with a particular item that the company offers as well as verify her ability to get it to the buyer. The seller must be truthful that the offered item meets all requirements communicated by the buyer and not
mislead for purposes of making the sale. The seller must also verify pricing is correct and be upfront about any extra fees or costs applied—such as shipping and handling, and/or tax—to give the buyer the full actual cost of the item. The seller must also be diligent in ensuring the item is delivered to the intended location by the date she committed to and packaged in such a way that the item will not be damaged during shipment.

• Delivery Responsibility—As the purchased item leaves the seller’s location and is in transit to the buyer’s location, the responsibility lies with the organization contracted to deliver it. As the seller has a responsibility to correctly package an item for delivery, it is the delivery company’s responsibility to ensure the item is not damaged in transit, regardless if the item’s destination is a third party, the buyer, or the seller.

As we have seen in these primary components of successfully managing the transaction of procuring an item and having it successfully delivered and being correct in form, fit, and function, we can see that risk is associated with every aspect of conducting procurement. We can look at procurement as having a level, or threshold, of risk associated with it, and this is why risk and procurement go hand-in-hand.

In the case where the purchasing agent is using a contract agreement to obtain an external resource, there will also be a buyer/seller relationship, and in some cases a delivery component required. The same buyer/seller responsibilities exist within a contract and can even include the complication of special terms and conditions the can add even more risk in using contracted resources.

We know procurement is part of every project to some degree, and given the nature of things that have to be purchased or contracted, procurement can introduce a large component of risk throughout the project lifecycle. The project manager must be aware that the procurement process can generate potential problems and that he must work closely with those involved in procurement to manage risks associated with it.
Seeing Is Believing

As the project manager begins to develop the project plan, which includes breaking down the project deliverables into their smallest components, understanding all resources that are required, estimating costs, and scheduling, she begins to see where potential problems may occur that could have impact on the project. The most important tool a project manager could have in managing projects is seeing problems ahead of time and being prepared with responses. When the project manager can see areas of potential problems and can plan for these problems, she becomes a believer that risk can be managed if planned for correctly.

Risk and Procurement—Planned?

Most project managers will agree that certain responses that were planned ahead of time saved or protected not only a project activity, but also the schedule or perhaps even the project’s budget. Planning for risks allows for the project manager and staff to have a response ready in case a problem occurs. This can mean the difference between having the time to design the best response possible versus having no time and making knee-jerk reactions that will simply put a Band-Aid on the problem and generally be a more expensive solution. Project managers, in planning for risk with well-designed responses, can actually be one of the project’s biggest assets in protecting not only the project but also the organization from problems that could be anywhere from minor to having a catastrophic impact.

Save the Project and Organization

A project manager has a responsibility to ensure the completion of all work activities that produce the project deliverable, which in turn meets the expectations of the project objective. He also has the authority to plan and manage all of the work activities, as well as the responsibility to plan for and manage risk throughout the project lifecycle. If the project manager is seen as the individual who ensures the outcome of the project deliverable, he can also be seen as the
individual who might ultimately save the project from its own problems through *risk management*.

In some cases the project manager has not only saved the project budget, schedule, and quality of the deliverable, but has protected the organization from legal action that might have been a possibility through certain contract agreements but was managed in a risk response. Project managers and purchasing agents within the procurement department know that the use of contracts and how they are negotiated can be used as a risk management tool—and can accordingly mitigate or eliminate risks associated with a bigger picture regarding the entire organization in regard to potential legal actions.

**Proactive Versus Reactive**

As we’ve stated, one of the most powerful tools the project manager can have is visibility of all potential risks and a best-case-scenario risk response planned for each of them ahead of time. Unfortunately, as projects are developed, project managers can find themselves very busy, and identifying and planning risk responses will either be a lesser priority or will not be completed at all. This is unfortunate, as we can see in Figure I.1. Failing to plan for risks can ultimately have an impact on the project deliverable, budget, and schedule.

![Project Life Cycle - Impact of Risks Based on Response Planning](image)

**Figure I.1** Impact to Project with and without Risk Planning
When project managers are trying to manage work activities, issues arise on a regular basis that he must deal with. Some are minor, simply just making the decision of one thing over another, while in other cases a problem has actually occurred and needs a response and corrective action. When the project manager has no time to think of a best-case scenario response, “reacting” to a problem indicates the problem has already occurred and the project manager is simply performing damage control.

Project managers discipline themselves to allocate time before a project starts to identify potential problems, predict the probability of occurrence, analyze potential impact to the project, and use resources available to identify best case scenario responses. This is an example of working in a “proactive” response mode. When project managers are proactive in response planning, they have a roadmap of potential problems and are almost waiting for them to occur. From this position, in some cases the project manager and project staff can actually make alterations to a work activity prior to a potential risk to simply eliminate it. Being proactive in risk identification and response planning gives the project manager confidence throughout the project lifecycle that they can not only see problems before they happen, but they have an opportunity to eliminate them, or, at worst, have a response for a best-case scenario outcome that is in the best interest of the project in the organization.

**Problem Management Versus Change Management**

Although project managers do the best they can in identifying potential “problems” that may occur throughout the project lifecycle, the one uncertainty project managers cannot plan for are any changes that will be required throughout the project lifecycle. As we have seen, when the project manager operates in a proactive mode, it is because she has developed a process that outlines steps to take in certain scenarios. As we have seen, developing a risk management plan is a process the project manager can follow to consistently deal with potential problems. Another process the project manager can use is to address changes required throughout the project lifecycle.
Some project managers view change as a problem—and therefore a risk—that should be mitigated or eliminated. A customer might make a request to alter something on the project deliverable before it is completed so it will meet newly discovered conditions. As much as we would love to have the customer understand “all” specifications required for their deliverable at the beginning of a project, in some situations the customer may be working within a developing environment, and alterations to the deliverable might have to be made in order for it to work correctly in what the customer is developing. In this case, allowing for a project deliverable to be changed on the fly would be seen as good customer service.

In other cases, items that are procured might have to be altered slightly depending on availability or work required by an externally subcontracted resource. These types of changes are also inevitable but should be seen as opportunities to perfect what the project is trying to accomplish, rather than as an obstacle. Like any other aspect of the project, the project manager should develop a *change management process* to ensure changes are conducted correctly and efficiently and are implemented with minimal impact to the project. A detailed change management process is introduced later in this book. Project managers can use this powerful tool to control how change is managed on projects.

**Is the Project Manager a Risk?**

As we have seen throughout this introduction, there are several aspects regarding the management of project risk and procurement that the project manager either has direct responsibility for or will be involved in to some degree. Because the project manager has several responsibilities, such as the development of the project work breakdown structure, estimating a budget, and developing a project schedule, we can see that the project manager can pose a risk to the project based on his own knowledge, experience, and skill set—yes, a project manager himself can be a risk!

In some cases, the organization does not employ professional project managers to oversee projects but simply chooses a functional
manager or someone else within the organization to oversee project activities. In this condition, the manager selected to oversee a project can cause several problems as a result of mismanagement. Even professional project managers hired within the organization to officially develop and manage projects have a wide variety of experience and skill sets, and they can introduce potential problems throughout the project lifecycle.

As more organizations see how the benefits of properly managed projects far outweighs the damage control resulting from projects with budget overruns, delayed schedules, and incorrectly developed project deliverables, they realize how important it is to select a project manager with the skills and experience to properly develop and manage a project. And when an organization understands that successes and failures on a project are not only the result of the project manager’s abilities and work ethic, but is a result of everyone’s efforts, including the project staff and supporting departments, a culture of effective risk management can be felt throughout the organization. This culture of risk awareness, with everyone considering risk management a part of his or her job, can be one of the strongest assets the project can have.

Organizational Culture of Risk Planning

Organizations in which projects are a large component of the business strategy have an understanding of the potential impact risks can have on not only projects, but throughout the organization—and so they often have a strong risk awareness culture. Organizations that are structured with functional departments that carry out day-to-day operations that do not necessarily function on a project basis and are not intimately associated with the organization’s business on the whole, can struggle with the concept of risk management in how problems on a project can affect an organization.

Regardless of the organization structure, a project manager assigned to oversee a project must ensure certain project processes are developed and will be used throughout the project lifecycle. This is important, as processes are used to outline what is required as well
as to ensure consistency in the process. As the project manager is addressing the area of risk and procurement on a project, she must also ensure processes are in place to manage these items.

- **Risk and Procurement as a Process**—As an organization matures with the use of projects, hopefully staff within the organization is also seeing the benefit of processes used to manage risk and procurement throughout a project lifecycle. The benefit of developing a process is it provides a step-by-step instruction to conduct items, which is important to effectively manage what the process is developed for. This book includes processes that can be used in managing all aspects of risk, as well as procurement on most types of projects. Although these can be simple processes, they can be used on complex projects and in their simplicity can be easily understood by not only a project manager but by other project staff that may be assisting with project tasks. It is important that the development of a process remain simple, as the fundamental steps can be used on either simple projects or complex projects, but those using the process will not lose sight of the overall concept of what the process is trying to accomplish.

- **PMBOK Processes**—The Project Management Institute (PMI) has published a book called *A Guide to the Project Management Body of Knowledge* (PMBOK Guide) that is used worldwide as a standard project managers can follow that will assist in the understanding of processes used throughout all aspects of managing projects. Several processes regarding risk and procurement management called out in the PMBOK are used in this text for general conceptual understanding of risk and procurement management and, in many cases, are explained in further detail and with the use of examples in regard to specific applications.

- **Documentation**—As the project manager develops the overall project management plan, there are several individual plans included that outline all of the process steps required for each aspect of the overall project. Other documents used in the organization that will house information regarding project activities
may include documents within the Accounting department, Procurement department, Project Management Office (PMO), and Human Resources, as well as general documents such as a Lessons Learned document included with the completion of each project. With regard to risk management and procurement management, there are two primary documents used in the project management plan that outline all specific steps required for each of these two areas, which include:

- **Risk Management Plan**—Houses all of the information regarding how risk is to be managed throughout the project lifecycle. This includes identification of risk, analysis of risk, response plans, documentation of risk and responses, and any staff identified to assist in managing risk throughout the project lifecycle. The risk management plan also includes all of the processes used and specific steps required to correctly and effectively carry out each aspect of managing risk. The project manager is typically the owner and manager of the risk management plan for each project and would be the individual responsible for developing the plan and/or any modifications or additions to the plan throughout the project lifecycle.

- **Procurement Management Plan**—Houses all of the information regarding how procurement should be conducted throughout the project lifecycle. This plan is typically developed as a joint effort between the project manager, the Procurement department, and sometimes the Accounting department. It houses all of the processes required to correctly and effectively carry out procurement throughout the project lifecycle. This can include conducting purchases, negotiating contracts, any specific pricing schedules that might be required, as well as roles and responsibilities required to negotiate contracts and effectively conduct procurement. This document can be developed by either the project manager or the procurement manager, and both of these individuals will need to have a clear understanding of the development of processes within the procurement management plan; roles and responsibilities of management overseeing aspects of procurement; and the management of
human resources that will be conducting procurement and accounting functions. The important aspect here is that all processes required are included in the procurement management plan, and that everyone involved in this plan is on the same page as to the understanding of the processes included.

- Lessons Learned—Another important document that is used throughout project management is the Lessons Learned document used to record not only problems relative to risk management and/or procurement, but successes due to processes that were designed and implemented, resulting in a positive outcome. The Lessons Learned document is typically regarded as an important document within project management, as project managers use this document at the beginning stages of developing a project to avoid problems that have occurred on prior projects.

Project managers can use valuable information from prior projects in the development of the risk management plan in identifying potential problems and successful responses of problems that occurred on prior projects. This can save the project manager a great deal of time (and in some cases, guesswork) as to what a successful response to a particular risk might be. Project managers can also use the Lessons Learned document to gain valuable information on prior purchases or the use of subcontractors to avoid problems or issues seen on past projects. This can, in some cases, save the organization a great deal of money and time in selecting a more appropriate response to a risk over a response that might have made more sense if other details of the risk had been unknown. Lessons Learned documents have proven to be a valuable source of information for the project manager in developing the project management plan and should always be a document every project manager develops and uses throughout the project lifecycle to record information that would be valuable for later use.

In many ways, the success of a project manager can be boiled down to the simple fact of how much information he has and how
he uses that information to develop and manage a project. Project managers are the first to admit that *knowledge is power*, and the more they know about their projects at the beginning stages, the better they can plan. The two key components in planning are to correctly identify what has to be accomplished in work activities to complete a project deliverable, and how to effectively address and manage problems that occur throughout the project lifecycle that could impact budget and schedule.

Project managers are generally tasked with the development of a project management plan, and how the project manager develops this plan largely dictates its success. It is incumbent on the project manager to view the project in a best-case scenario where simply planning all of the activities and resources required to accomplish an objective should be sufficient, but planning for problems is equally as important, given their potential to destroy or delay a project. All too often the project manager gets wrapped up at the beginning of the project in ensuring that all of the normal activities, resources, and purchases are in place but does not leave time to identify and plan responses for potential problems. If the project manager has allocated time to design a project that will be conducted correctly, ensuring a project deliverable is completed on budget and on schedule, it is also the project manager’s responsibility to plan for risks and responses that will also ensure the project deliverable is completed on schedule and on budget. The project manager, in planning risk responses and procurement in advance of the project, is actually being proactive in protecting the project from its own resources and activities.
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