

FT PRESS PROJECT MANAGEMENT SERIES



MASTERING RISK AND PROCUREMENT IN PROJECT MANAGEMENT

A Guide to Planning, Controlling, and
Resolving Unexpected Problems

RANDAL WILSON, MBA, PMP

Mastering Risk and Procurement in Project Management

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Resolving Unexpected Problems

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*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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Contents

Introduction	1
Problems Are Inevitable	2
What Is Risk?	2
Bad Risk Versus Good Risk	3
Risk Versus Uncertainty	4
What Is Procurement?	4
Risks and Procurement Go Hand-in-Hand	6
Seeing Is Believing	8
Risk and Procurement—Planned?	8
Save the Project and Organization	8
Proactive Versus Reactive	9
Problem Management Versus Change Management	10
Is the Project Manager a Risk?	11
Organizational Culture of Risk Planning	12

Part I: Risk and Procurement Planning

Chapter 1 Risk Strategy and Planning	19
1.1 Introduction	19
Practical Application	20
1.2 Risk Strategy Versus Risk Planning	20
Strategic Risk Planning	21
Tactical Risk Planning	26
1.3 Develop Risk Management Plan (Process)	29
Risk Identification	30
Define Risk Tolerance	30
Risk Analysis	31
Contingency or Redesign Planning	31
Risk Monitoring Process	31
Develop Risk Controls	32
Change Management Process	32
Closer for Risk Events	33
Communicate Risk Event Results	33
Lessons Learned	34

	1.4 Summary	34
	1.5 Review Questions	35
	1.6 Key Terms	35
	1.7 PMBOK Connections (5 th Ed.)	36
	1.8 Case Study (Use for Chapters 1, 2, 3, and 4)	36
	1.9 Case Study Questions and Exercise	37
Chapter 2	Identifying Risk	39
	2.1 Introduction	39
	2.2 Information Gathering	40
	Who, What, and How	41
	Activity Information Checklist	45
	2.3 Identifying the Risks	46
	Resources to Help Identify Risks	47
	Types of Risks	52
	2.4 Categorizing Risks	60
	The Big Three (Triple Constraint)	61
	Change Management	65
	2.5 Documenting Risk Information	66
	Risk Register	66
	Risk Management Plan	67
	2.6 Summary	67
	2.7 Review Questions	69
	2.8 Key Terms	69
	2.9 PMBOK Connections (5 th Ed.)	69
	2.10 Case Study Questions (Use Case Study in Chapter 1)	70
Chapter 3	Risk Analysis	71
	3.1 Introduction	71
	Qualitative Analysis	74
	Simple and Fast	74
	Risk Assessment Matrix	75
	Diagramming Methods	76
	Decision Tree Analysis (Non-numerical)	78
	3.2 Quantitative Analysis	78
	Data Gathering	79
	Beta and Triangular Probability Distributions	80

	Sensitivity Analysis	83
	Monte Carlo Simulation	84
	Decision Tree Analysis (Numerical)	84
3.3	Risk Prioritizing	87
	What Is Sensitive on the Project?	87
	Separate by Probability and Severity	88
	Category Weighting	89
3.4	Summary	89
3.5	Review Questions	90
3.6	Key Terms	91
3.7	PMBOK Connections (5 th Ed.)	91
3.8	Case Study Questions (Use Case Study in Chapter 1)	91
Chapter 4	Plan Procurement Strategy	93
4.1	Introduction	93
4.2	Project Procurement Requirements	94
	Procurement Information Sources	94
	Special Customer Requirements	98
	Regulatory Requirements	99
4.3	Procurement Decision Processes	100
	Make or Buy Analysis	101
	Purchase Strategies	107
4.4	Contract Strategies	112
	What Is a Contract?	112
	Why Are Contracts Used?	114
	Contract Types	115
4.5	Risk Considerations	119
	Buyer Versus Seller	119
	Organizational Versus Project Level	120
	Triple Constraint	121
4.6	Summary	122
4.7	Review Questions	123
4.8	Key Terms	124
4.9	PMBOK Connections (5 th Ed.)	124
4.10	Case Study Questions (Use the Case Study in Chapter 1)	124

Part II: Project Execution

Chapter 5	Risk Response Strategies	127
	5.1 Introduction	127
	5.2 Strategy in Risk Response	128
	Reactive Response Mode	128
	Proactive Response Mode	129
	Negative Risks	130
	Benefits, Trade-Offs, and Pitfalls	131
	Positive Risks	133
	5.3 Contingency Response Strategy	133
	Contractual Response Strategy	134
	Organizational Process Response Planning	135
	5.4 Project Document Updates	137
	5.5 Summary	137
	5.6 Review Questions	139
	5.7 Key Terms	139
	5.8 PMBOK Connections (5 th Ed.)	139
	5.9 Case Study (Use for Chapters 5 and 6)	139
	5.10 Case Study Questions	140
Chapter 6	Procurement Execution Strategies	141
	6.1 Introduction	141
	6.2 Considerations Before Executing Procurements	143
	6.3 Executing Purchases	151
	6.4 Executing Contracts	161
	6.5 Results of Executing Procurements	175
	6.6 Summary	176
	6.7 Review Questions	177
	6.8 Key Terms	178
	6.9 PMBOK Connections (5 th Ed.)	178
	6.10 Case Study Questions (Use Case Study in Chapter 5)	178

Part III: Integrated Monitoring and Control

Chapter 7	Risk Monitoring and Control	181
	7.1 Introduction	181
	7.2 Risk Monitoring Techniques	182

	7.3 Risk Control Techniques	188
	7.4 Manage Change Control	202
	7.5 Project Document Updates	209
	7.6 Summary	209
	7.7 Review Questions	211
	7.8 Key Terms	211
	7.9 PMBOK Connections (5 th Ed.)	212
	7.10 Case Study (Use for Chapters 7 and 8)	212
	7.11 Case Study Questions	212
Chapter 8	Procurement Monitoring and Control	213
	8.1 Introduction	213
	8.2 Procurement Monitoring Techniques	215
	8.3 Procurement Control Techniques	223
	8.4 Integrated Procurement Change Control	225
	8.5 Project Document Updates	228
	8.6 Summary	229
	8.7 Review Questions	230
	8.8 Key Terms	230
	8.9 PMBOK Connections (5 th Ed.)	231
	8.10 Case Study Questions (Use Case Study in Chapter 7)	231
 Part IV: Project Closer		
Chapter 9	Close Risk Events	235
	9.1 Introduction	235
	9.2 Evaluate Risks	236
	9.3 Close Risk Responses	238
	9.4 Claims and Disputes	241
	9.5 Documentation and Communication	243
	9.6 Summary	244
	9.7 Review Questions	245
	9.8 Key Terms	245
	9.9 PMBOK Connections (5 th Ed.)	246
	9.10 Case Study (Use for Chapters 9 and 10)	246
	9.11 Case Study Questions	247

Chapter 10	Close Procurements	249
	10.1 Introduction	249
	10.2 Evaluate Open Procurements	250
	10.3 Close Procurements	252
	10.4 Claims and Disputes	257
	Documentation	259
	10.5 Summary	260
	10.6 Review Questions	261
	10.7 Key Terms	262
	10.8 PMBOK Connections (5 th Ed.)	262
	10.9 Case Study Questions (Use Case Study from Chapter 9)	262
	Bibliography	263
	Index	265

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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 that 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 life-cycle. 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.

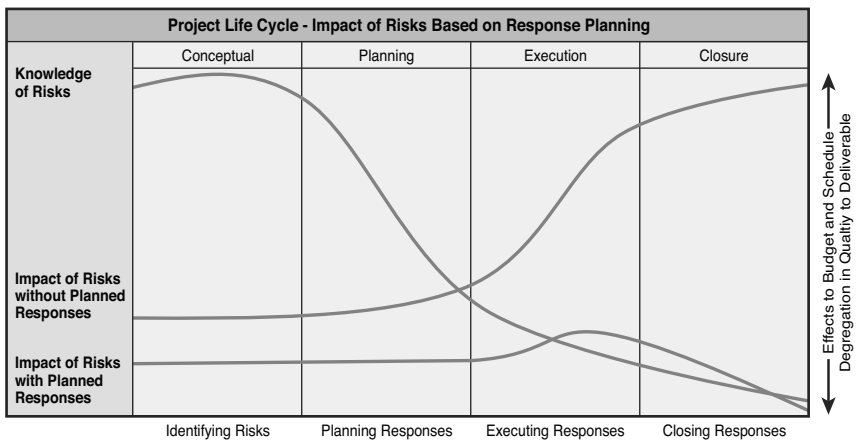


Figure I.1 Impact to Project with and without Risk Planning

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.

Index

A

- Accept response plan, 133
- accepting risk, 131
- accounting, 217, 225
- activity information checklist, 45-46, 96-97, 183, 216, 219
- activity-level monitoring tools, 188
- analysis
 - make or buy analysis, 101-106
 - internal versus external*, 104-106
 - lease or own*, 103-104
 - make or buy*, 101-106
 - risk analysis, 31
 - basic matrix*, 74-75
 - decision tree analysis*, 78-79, 84-85
 - diagramming methods*, 76-77
 - overview*, 71-73
 - qualitative analysis*, 74
 - qualitative risk assessment matrix*, 75
 - quantitative analysis*, 79-85
- approving contracts, 222, 224
- audits, 225, 252-253
- avoiding risk, 131
- award phase, 172-173

B

- bad risk, 3
- baselines, measuring against, 208
- basic matrix analysis, 74-75
- Beta and Triangular probability distributions, 80-83
- bibliography, 263
- bill of materials (BOM), 97-98
- BOM (bill of materials), 97-98

- brainstorming, 48
- budgetary risk, 54-56
- buyers
 - contract concerns, 174
 - responsibility, 6
 - risk, 119-120

C

- categorizing risks, 60-65
 - change management, 65
 - example, 60-61
 - Triple Constraint, 61-65
- category weighting, 89
- cause and effect diagrams, 49-50, 76-77
- CCM (critical chain method), 192-193
- change control, 202-208, 225-228
 - process, 226
 - reasons for change, 202-203
 - accepting risk*, 203-204
 - communicate step*, 207
 - implement step*, 206-207
 - measure step*, 208
 - propose step*, 204-206
 - subcontractor contracts, 227-228
 - supplier/vendor orders, 226-227
- change management, 65
 - versus problem management, 10-11
 - process, 32
- change order requests, verifying, 251-252
- change requirements review, 253
- checklists
 - activity information checklist, 96-97, 183, 216, 219
 - overview, 48-49

claims

- close procurements, 257-260
- close risk events, 241-242

close contract phase, 173-174**close procurements**

- change requirements review, 253
- claims and disputes, 257-260
- compliance of deliverable or service, verifying, 253-254
- early contract termination, 256-257
- early purchase termination, 255-256
- early termination, 254-255
- evaluating open procurements, 250-252
- overview, 249-250
- payment schedule, completing, 254
- performance reviews/audits, 252-253

close risk events, 235

- claims and disputes, 241-242
- close risk response, 238-241
- documentation and communication, 243
- risk evaluation, 236-238

close risk response, 238-241**closing work activities**

- close procurements
 - change requirements review*, 253
 - claims and disputes*, 257-260
 - compliance of deliverable or service, verifying*, 253-254
 - early contract termination*, 256-257
 - early purchase termination*, 255-256
 - early termination*, 254-255
 - evaluating open procurements*, 250-252
 - overview*, 249-250
 - payment schedule, completing*, 254
 - performance reviews/audits*, 252-253

close risk events, 33

- claims and disputes*, 241-242
- close risk response*, 238-241
- documentation and communication*, 243
- overview*, 235
- risk evaluation*, 236-238

contracts, 173-174**overview, 233-234****commitment correspondence, 160-161****communicate step (change control), 207****communication**

- change control, 207
- close risk events, 243
- poor communication, 53
- risk communication, 29
- risk event results, 33

compliance of deliverable or service, verifying, 253-254**conflicts**

- resource conflicts, 58
- schedule conflicts, 57-58

contingency planning, 31**contingency response strategy**

- contractual response strategy, 134-135
- organizational process response planning, 135-136
- overview, 133-134

contract pricing, 159-160**contractors' contract concerns, 174-175****contracts**

- contract agreements, 159-160
- contract pricing, 159-160
- contractual issues, 56
- cost-reimbursable contracts, 117-118
- definition of, 112-114
- early contract termination, 256-257
- executing
 - award phase*, 172-173
 - buyer concerns*, 174
 - close contract phase*, 173-174
 - contract structure and agreements*, 166-172
 - contractor concerns*, 174-175
 - execution phase*, 173
 - internal versus external resources*, 162-165
 - overview*, 161-162
 - pre-award phase*, 165-166
- fixed price contracts, 116-117
- and lease agreements, 219-220
- overview, 5, 112
- purchase and contract control, 223-225
- purchasing contracts, 159
- purpose of, 114-115

review and approval process, 222, 224
 subcontractor contracts, 227-228
 T&M (time and materials)
 contacts, 118
 types of, 224
 contractual response strategy, 134-135
control
 change control, 225-228
 process, 226
 subcontractor contracts, 227-228
 supplier/vendor orders, 226-227
 cost control, 195-197
 procurement control, 223-225
 quality control, 189-191
 design reviews, 191
 intended functionality, 189
 materials and workmanship standards, 189-190
 quality inspections, 190
 regulatory inspections, 190-191
 resource control, 199-201
 resource allocation control, 200
 resource leveling, 200-201
 schedule control, 191-194
 CCM (critical chain method), 192-193
 fast tracking, 194
 schedule crashing, 193-194
 scope control, 197-199
Cost Plus Award Fee (CPAF)
 contracts, 118
Cost Plus Fixed Fee (CPFF)
 contracts, 117-118
Cost Plus Incentive Fee (CPIF)
 contracts, 118
 cost-reimbursable contracts, 117-118
costs, 63
 cost control, 195-197
 cost-reimbursable contracts, 117-118
CPAF (Cost Plus Award Fee)
 contracts, 118
CPFF (Cost Plus Fixed Fee)
 contracts, 117-118
CPIF (Cost Plus Incentive Fee)
 contracts, 118
 critical chain method (CCM), 192-193
 customer relationship, 53

customer requirements
 (procurement), 98-99
 customer specifications, 95

D

data gathering, 79-80
decision processes (procurement)
 make or buy analysis, 101-106
 overview, 100-101
 purchase strategies, 107-111
decision tree analysis
 non-numerical, 78-79
 numerical, 84-85
 deliveries, verifying, 252
 delivery dates, establishing, 154-156
 delivery responsibility, 7
 Delphi method, 48
Design for Manufacturing (DFM), 20
 design reviews, 191
DFM (Design for Manufacturing), 20
diagramming methods, 49-51, 76-77
 cause and effect diagrams, 49-50, 76-77
 influence diagrams, 50-51, 77
 network diagrams, 51, 77, 97
 tornado diagram, 83
disputes
 close procurements, 257-260
 close risk events, 241-242
documentation, 13
 close risk events, 243
 documentation error, 54
 Lessons Learned document, 15, 218-219, 220-221
 procurement management plans, 14-15, 216-217, 220
 project document updates
 procurement monitoring, 228
 risk monitoring, 209
 risk response strategies, 137
 project management plans, 217
 risk management plans, 14, 29, 67, 184
 change management process, 32
 closure for risk events, 33
 contingency or redesign planning, 31
 risk analysis, 31
 risk controls, 32

- risk event results,*
 - communicating, 33*
 - risk identification, 30*
 - risk monitoring process, 31-32*
 - risk tolerance, defining, 30*
- risk monitoring, 184
- risk register, 66-67, 184, 216
- domestic versus imported purchases, 155-156
- down payments, 149-150

E

- early contract termination, 256-257
- early purchase termination, 255-256
- early termination, 254-255
- early warning sign triggers
 - procurement monitoring, 219-221
 - activity information checklist, 219*
 - contracts and lease agreements, 219-220*
 - Lessons Learned document, 220-221*
 - procurements management plan, 220*
 - WBS (work breakdown structure), 220*
 - risk monitoring, 185-186
- elimination (risk), 25
- EMV (Expected Monetary Value), 84-85
- Enhance response plan, 133
- evaluating open procurements, 250-252
- evaluating risk, 236-238
- executing procurements
 - contracts
 - award phase, 172-173*
 - buyer concerns, 174*
 - close contract phase, 173-174*
 - contract structure and agreements, 166-172*
 - contractor concerns, 174-175*
 - execution phase, 173*
 - internal versus external resources, 162-165*
 - overview, 161-162*
 - pre-award phase, 165-166*
 - purchases, 143-151
 - commitment correspondence, 160-161*

- establishing delivery dates, 154-156*
 - knowing your purchases, 151-153*
 - knowing your suppliers/vendors, 153-154*
 - pricing, 158-160*
 - special conditions, 156-158*
- results, 175-176
- execution phase (contracts), 173
- Expected cost (C_e) value, 81
- Expected Monetary Value (EMV), 84-85
- expedite options, 155
- Exploit response plan, 133
- external versus internal, 104-106
- external versus internal resources, 162-165

F

- fast tracking, 194
- fees, 150-151
- Firm Fixed Price contract (FFP), 116
- first article qualifications, 157
- fixed price contracts, 116-117
- Fixed Price Incentive Fee (FPIF) contract, 116-117
- Fixed Price with Economic Price Adjustment (FP-EPA) contracts, 117
- FP-EPA (Fixed Price with Economic Price Adjustment) contracts, 117
- FPIF (Fixed Price Incentive Fee) contract, 116-117
- FFP (Firm Fixed Price) contract, 116
- funding, lack of, 55

G

- gathering information, 79-80
 - activity information checklist, 45-46
 - example, 40-41
 - information to be collected, 43-44
 - resources, 41-42
 - sources for project activity information, 44-45
- good risk, 3
- guarantees, 146
- Guide to the Project Management Body of Knowledge (PMBOK Guide), 13

H

historical pricing, 158-159
 historical purchases, 154

I

identifying risk, 27
 importance of, 39-40
 information gathering
 activity information checklist, 45-46
 example, 40-41
 information to be collected, 43-44
 resources for gathering information, 41-42
 sources for project activity information, 44-45
 resources to help identify risks, 47-51
 brainstorming, 48
 checklist, 48-49
 Delphi method, 48
 diagramming methods, 49-51
 subject matter experts, 47
 SWOT, 48
 risk management plans, 67
 risk register, 66-67
 types of risks, 52-60
 budgetary risk, 54-56
 operations risk, 58-60
 project risk, 56-58
 specification risk, 52-54
 implement step (change control), 206-207
 imported versus domestic items, 155-156
 incentives, 149
 incoming inspection requirements, 157-158
 incorrect interpretation, 52
 inevitability of problems, 2
 influence diagrams, 50-51, 77
 information gathering
 activity information checklist, 45-46
 example, 40-41
 information to be collected, 43-44
 resources, 41-42
 sources for project activity information, 44-45

information sources

for procurement, 94-98
 activity information checklist, 96-97
 bill of materials (BOM), 97-98
 customer specifications, 95
 network diagrams, 97
 project charters, 95
 project statement of work (SOW), 96
 work breakdown structure (WBS), 96

for procurement monitoring, 215-219

accounting, 217
 activity information checklist, 216
 Lessons Learned document, 218-219
 other project managers, 217-218

procurements management plan, 216-217

project management plan, 217
 risk register, 216

for risk monitoring, 183-185

activity information checklist, 183
 risk management plans, 184
 risk register, 184

inspections, 225

 design reviews, 191

 quality inspections, 190

 regulatory inspections, 190-191

insurance and performance bonds, 146-147

intended functionality, 189

internal versus external, 104-106

internal versus external resources, 162-165

J-K-L

knowing

 purchases, 151-153

 suppliers/vendors, 153-154

lack of funding, 55

leadership, lack of, 57

lease agreements, 219-220

lease or own, 103-104

legal issues, 56

Lessons Learned document, 15, 34, 218-221

liability (shipping), 144-146

M

make or buy analysis, 101-106

internal versus external, 104-106

lease or own, 103-104

make or buy, 101-103

managerial constraints, 59

materials and workmanship standards, 189-190

measure step (change control), 208

meetings, work activity status, 222

mitigation (risk), 25

monitoring

overview, 179-180

procurement

early warning sign triggers,
219-221

information sources, 215-219

monitoring tools, 221-222

overview, 213-215

project document updates, 228

risk

change control, 202-208

cost control, 195-197

early warning sign triggers,
185-186

information sources, 183-185

monitoring tools, 187-188

overview, 181-183

process, 31-32

project document updates, 209

quality control, 189-191

resource control, 199-201

schedule control, 191-194

scope control, 197-199

trigger examples, 186-187

monitoring tools

procurement monitoring, 221-222

risk monitoring, 187-188

Monte Carlo simulation, 84

Most likely (C_m) value, 81

N

negative risks, 130-131

network diagrams, 51, 77, 97

O

open procurements, evaluating,
250-252

operations risk, 58-60

Optimistic (C_p) value, 81

organizational culture, 12-16

organizational level, 108

organizational process response
planning, 135-136

organizational risk, 120-121

organizational structure, 22-24

own or lease, 103-104

P

payments

payment schedule, completing, 254

scheduled payments, 55

terms and options, 147-151

penalties, 149

performance reviews/audits, 252-253

PERT (Three-Point Estimating), 81

Pessimistic (C_p) value, 81

planned procurement monitor, 221,
223-224

planning

plan procurement strategy

contracts, 112-118

decision processes, 100-111

information sources, 94-98

overview, 93-94

regulatory requirements,
99-100

risk considerations, 119-122

special customer requirements,
98-99

procurement management plans,
14-15, 216-217, 220

project management plans, 217

risk management plans, 14, 25-26,
29

change management process, 32

closure for risk events, 33

*contingency or redesign
planning,* 31

Lessons Learned document, 34

overview, 19-20

practical application, 20

risk analysis, 31

risk controls, 32

risk event results,

communicating, 33

- risk identification*, 30, 67
- risk monitoring*, 184
- risk monitoring process*, 31-32
- risk tolerance, defining*, 30
- strategic risk planning*, 21-26
- strategy versus planning*, 20-21
- tactical risk planning*, 26-29
- PMBOK Guide**, 13
- policies, return**, 144
- poor communication**, 53
- positive risks**, 133
- pre-award phase**, 165-166
- preferred supplier/vendor list**, 109-110, 153-154
- pricing**, 158-160
 - contract pricing, 159-160
 - historical pricing, 158-159
 - volume pricing, 158
- prioritizing risk**
 - category weighting, 89
 - overview, 87
 - probability and severity, 88
 - sensitivity to risk, 87-88
- proactive response mode**, 129-130
- proactive response planning**, 9-10
- probability**, 88
- problem management**, 8-11
 - versus change management, 10-11
 - inevitability of problems, 2
 - proactive versus reactive response planning, 9-10
- procurement**
 - buyer's responsibility, 6
 - change control, 225-228
 - process*, 226
 - subcontractor contracts*, 227-228
 - supplier/vendor orders*, 226-227
 - close procurements
 - change requirements review*, 253
 - claims and disputes*, 257-260
 - compliance of deliverable or service, verifying*, 253-254
 - early contract termination*, 256-257
 - early purchase termination*, 255-256
 - early termination*, 254-255
 - evaluating open procurements*, 250-252
 - overview, 249-250
 - payment schedule, completing*, 254
 - performance reviews/audits*, 252-253
- contracts**
 - cost-reimbursable contracts*, 117-118
 - definition of*, 112-114
 - fixed price contracts*, 116-117
 - overview, 5, 112
 - purpose of*, 114-115
 - T&M (time and materials) contracts*, 117-118
- decision processes**
 - make or buy analysis*, 101-106
 - overview, 100-101
 - purchase strategies*, 107-111
- definition of purchases**, 5
- delivery responsibility**, 7
- execution strategies**
 - contract execution*, 161-175
 - overview, 141-142
 - purchase considerations*, 143-151
 - purchase execution*, 151-161
 - results*, 175-176
- information sources**, 94-98
 - activity information checklist*, 96-97
 - bill of materials (BOM)*, 97-98
 - customer specifications*, 95
 - network diagrams*, 97
 - project charters*, 95
 - project statement of work (SOW)*, 96
 - work breakdown structure (WBS)*, 96
- monitoring**
 - early warning sign triggers*, 219-221
 - information sources*, 215-219
 - monitoring tools*, 221-222
 - overview, 213-215
 - project document updates*, 228
- overview, 4-5, 93-94
- procurement control**, 223-225
- procurement management plans**, 14-15
- procurement performance reviews**, 224-225
- regulatory requirements**, 99-100

- risk considerations, 6-7
 - buyer versus seller, 119-120*
 - organizational versus project level, 120-121*
 - overview, 119*
 - triple constraint, 121-122*
 - seller's responsibility, 6-7
 - special customer requirements, 98-99
 - procurement management plans, 14-15, 216-217, 220
 - procurement performance reviews, 224-225
 - product scope, 198-199
 - project activity information, sources for, 44-45
 - project charters, 95
 - project document updates
 - procurement monitoring, 228
 - risk monitoring, 209
 - risk response strategies, 137
 - project execution
 - overview, 125-126
 - procurement execution strategies
 - contract execution, 161-175*
 - overview, 141-142*
 - purchase considerations, 143-151*
 - purchase execution, 151-161*
 - results, 175-176*
 - risk response strategies
 - benefits, trade-offs, and pitfalls, 131-132*
 - contingency response strategy, 133-136*
 - negative risks, 130-131*
 - overview, 127-128*
 - positive risks, 133*
 - proactive response mode, 129-130*
 - project document updates, 137*
 - reactive response mode, 128-129*
 - project level, 108-109
 - project management plan, 217
 - project risk, 56-58, 120-121
 - project scope, 198
 - project statement of work (SOW), 96
 - project-level monitoring tools, 188
 - propose step (change control), 204-206
 - publicizing changes, 206-207
 - purchase control, 223-225
 - purchase strategies, 107-111
 - organizational level, 108
 - preferred supplier/vendor list, 109-110
 - project level, 108-109
 - source selection, 111
 - purchases, 143-151
 - definition of, 5
 - early purchase termination, 255-256
 - executing, 143-151
 - commitment correspondence, 160-161*
 - establishing delivery dates, 154-156*
 - knowing your purchases, 151-153*
 - knowing your suppliers/vendors, 153-154*
 - pricing, 158-160*
 - special conditions, 156-158*
 - guarantees, 146
 - insurance and performance bonds, 146-147
 - payment terms and options, 147-151
 - purchase strategies, 107-111
 - organizational level, 108*
 - preferred supplier/vendor list, 109-110*
 - project level, 108-109*
 - source selection, 111*
 - return policy, 144
 - shipping liability, 144-146
 - warranties, 146
 - purchasing contracts, 159
- ## Q
- qualitative analysis, 74
 - qualitative risk assessment matrix, 75
 - quality control, 62, 189-191
 - design reviews, 191
 - intended functionality, 189
 - materials and workmanship standards, 189-190
 - quality inspections, 190
 - regulatory inspections, 190-191
 - quality inspections, 190
 - quantitative analysis
 - Beta and Triangular probability distributions, 80-83
 - data gathering, 79-80
 - decision tree analysis, 84-85

Monte Carlo simulation, 84
 overview, 79
 sensitivity analysis, 83

R

- Rand Corporation Delphi method, 48
 reactive response mode, 9-10, 128-129
 redesign planning, 31
 reducing risk, 131
 regulatory inspections, 190-191
 regulatory requirements, 99-100
 resources, 63
 allocation control, 200
 conflicts, 58
 for gathering information, 41-42
 lack of, 58
 resource control, 199-201
 resource allocation control, 200
 resource leveling, 200-201
 resource leveling, 200-201
 response planning, 28
 response strategies
 benefits, trade-offs, and pitfalls,
 131-132
 close risk response, 238-241
 contingency response strategy
 contractual response strategy,
 134-135
 *organizational process response
 planning*, 135-136
 overview, 133-134
 negative risks, 130-131
 overview, 127-128
 positive risks, 133
 proactive response mode, 129-130
 project document updates, 137
 reactive response mode, 128-129
 retainers, 150-151
 return policy, 144
 reviewing contracts, 222, 224
 reviews
 change requirements review, 253
 performance reviews/audits,
 252-253
 risk analysis, 31
 basic matrix, 74-75
 decision tree analysis
 non-numerical, 78-79
 numerical, 84-85
 diagramming methods, 76-77
 overview, 71-73
 qualitative analysis, 74
 qualitative risk assessment matrix, 75
 quantitative analysis
 *Beta and Triangular probability
 distributions*, 80-83
 data gathering, 79-80
 decision tree analysis, 84-85
 Monte Carlo simulation, 84
 overview, 79
 sensitivity analysis, 83
 risk communication, 29
 risk controls, 32
 risk identification, 27
 categorizing risks, 60-65
 change management, 65
 example, 60-61
 Triple Constraint, 61-65
 importance of, 39-40
 information gathering
 activity information checklist,
 45-46
 example, 40-41
 information to be collected,
 43-44
 *resources for gathering
 information*, 41-42
 *sources for project activity
 information*, 44-45
 resources to help identify
 risks, 47-51
 brainstorming, 48
 checklist, 48-49
 Delphi method, 48
 diagramming methods, 49-51
 subject matter experts, 47
 SWOT, 48
 risk management plans, 67
 risk register, 66-67
 types of risks, 52-60
 budgetary risk, 54-56
 operations risk, 58-60
 project risk, 56-58
 specification risk, 52-54
 risk management. *See also* risk
 response strategies
 bad risk versus good risk, 3
 close risk events
 claims and disputes, 241-242
 close risk response, 238-241
 *documentation and
 communication*, 243
 overview, 235
 risk evaluation, 236-238
 definition of risk, 2-3
 organizational culture, 12-16
 overview, 17-18

- procurement
 - buyer versus seller, 119-120*
 - organizational versus project level, 120-121*
 - overview, 119*
 - triple constraint, 121-122*
- project managers, 11-12
- relationship with procurement, 6-7
- risk analysis
 - basic matrix, 74-75*
 - decision tree analysis, 78-79*
 - diagramming methods, 76-77*
 - overview, 71-73*
 - qualitative analysis, 74*
 - qualitative risk assessment matrix, 75*
 - quantitative analysis, 79-85*
- risk identification
 - categorizing risks, 60-65*
 - importance of, 39-40*
 - information gathering, 40-46*
 - resources to help identify risks, 47-51*
 - risk management plans, 67*
 - risk register, 66-67*
 - types of risks, 52-60*
- risk management plans, 14, 25-26, 29
 - change management process, 32*
 - closure for risk events, 33*
 - contingency or redesign planning, 31*
 - Lessons Learned document, 34*
 - overview, 19-20*
 - practical application, 20*
 - risk analysis, 31*
 - risk controls, 32*
 - risk event results, communicating, 33*
 - risk identification, 30*
 - risk monitoring process, 31-32*
 - risk tolerance, defining, 30*
 - strategic risk planning, 21-26*
 - strategy versus planning, 20-21*
 - tactical risk planning, 26-29*
- risk monitoring
 - change control, 202-208*
 - cost control, 195-199*
 - early warning sign triggers, 185-186*
 - information sources, 183-185*
 - monitoring tools, 187-188*
 - overview, 181-183*
 - process, 31-32*
 - project document updates, 209*
 - quality control, 189-191*
 - design reviews, 191*
 - intended functionality, 189*
 - materials and workmanship standards, 189-190*
 - quality inspections, 190*
 - regulatory inspections, 190-191*
 - resource control, 199-201*
 - resource allocation control, 200*
 - resource leveling, 200-201*
 - project document updates, 209*
 - quality control, 189-191*
 - resource control, 199-201*
 - schedule control, 191-194*
 - trigger examples, 186-187*
- risk prioritization
 - category weighting, 89*
 - overview, 87*
 - probability and severity, 88*
 - sensitivity to risk, 87-88*
 - risk versus uncertainty, 4*
- risk management plans, 14, 29**
 - change management process, 32*
 - closure for risk events, 33*
 - contingency or redesign planning, 31*
 - risk analysis, 31*
 - risk controls, 32*
 - risk event results, communicating, 33*
 - risk identification, 30*
 - risk monitoring process, 31-32*
 - risk tolerance, defining, 30*
- risk monitoring**
 - change control, 202-208*
 - accepting risk, 203-204*
 - communicate step, 207*
 - implement step, 206-207*
 - measure step, 208*
 - propose step, 204-206*
 - reasons for change, 202-203*
 - cost control, 195-197*
 - early warning sign triggers, 185-186*
 - information sources, 183-185*
 - activity information checklist, 183*
 - risk management plans, 184*
 - risk register, 184*
 - monitoring tools, 187-188*
 - overview, 181-183*
 - process, 31-32*
 - project document updates, 209*
 - quality control, 189-191*
 - design reviews, 191*
 - intended functionality, 189*
 - materials and workmanship standards, 189-190*
 - quality inspections, 190*
 - regulatory inspections, 190-191*
 - resource control, 199-201*
 - resource allocation control, 200*
 - resource leveling, 200-201*

schedule control, 191-194
 CCM (critical chain method),
 192-193
 fast tracking, 194
 schedule crashing, 193-194
 scope control, 197-199
 trigger examples, 186-187
risk planning, 19-20
 practical application, 20
 risk management plans, 29
 change management process, 32
 closure for risk events, 33
 *contingency or redesign
 planning*, 31
 Lessons Learned document, 34
 risk analysis, 31
 risk controls, 32
 risk event results,
 communicating, 33
 risk identification, 30
 risk monitoring process, 31-32
 risk tolerance, defining, 30
 strategic risk planning, 21-26
 mitigation or elimination, 25
 organizational structure, 22-24
 risk management plans, 25-26
 risk tolerance, 24-25
 strategy versus planning, 20-21
 tactical risk planning, 26-29
 risk communication, 29
 *risk for different types of
 projects*, 26-27
 risk identification, 27
 risk response planning, 28
 risk trigger planning, 27-28
risk prioritization
 category weighting, 89
 overview, 87
 probability and severity, 88
 sensitivity to risk, 87-88
risk register, 32, 66-67, 136, 184, 216
risk response strategies
 benefits, trade-offs, and pitfalls,
 131-132
 close risk response, 238-241
 contingency response strategy
 contractual response strategy,
 134-135
 *organizational process response
 planning*, 135-136
 overview, 133-134
 negative risks, 130-131
 overview, 127-128
 positive risks, 133

proactive response mode, 129-130
 project document updates, 137
 reactive response mode, 128-129
 risk response planning, 28
risk tolerance, 24-25, 30
risk trigger planning, 27-28

S

scheduled payments, 55
schedules
 overview, 62-63
 schedule control, 191-194
 CCM (critical chain method),
 192-193
 fast tracking, 194
 schedule conflicts, 57-58
 schedule crashing, 193-194
 schedule crashing, 193-194
scope, 62
 product scope, 198-199
 project scope, 198
 scope control, 197-199
sellers
 responsibility, 6-7
 risk, 119-120
 sensitivity analysis, 83
 sensitivity to risk, 87-88
 severity, 88
Share response plan, 133
shipping liability, 144-146
shipping requirements, 156-157
 source selection, 111
SOW (statement of work), 96
specification risk, 52-54
statement of work (SOW), 96
strategy
 contracts
 cost-reimbursable contracts,
 117-118
 definition of, 112-114
 fixed price contracts, 116-117
 overview, 112
 purpose of, 114-115
 *T&M (time and materials)
 contracts*, 118
 plan procurement strategy
 contracts, 112-118
 decision processes, 100-111
 information sources, 94-98
 overview, 93-94
 regulatory requirements,
 99-100

- risk considerations, 119-122*
- special customer requirements, 98-99*
- procurement execution
 - contract execution, 161-175*
 - overview, 141-142*
 - purchase considerations, 143-151*
 - purchase execution, 151-161*
 - results, 175-176*
- purchase strategies, 107-111
 - organizational level, 108*
 - preferred supplier/vendor list, 109-110*
 - project level, 108-109*
 - source selection, 111*
- risk strategy
 - overview, 19-20*
 - practical application, 20*
 - strategy versus planning, 20-21*
- strategic level process response, 135
- strategic risk planning, 21-26
 - mitigation or elimination, 25*
 - organizational structure, 22-24*
 - risk management plans, 25-26*
 - risk tolerance, 24-25*
- structure of contacts, 166-172
- subcontractors
 - claims and disputes, 258-259
 - contracts, 227-228
- subject matter experts, 47
- suppliers
 - change control, 226-227
 - claims and disputes, 257-258
 - definition of, 109-110
 - historical purchases, 154
 - knowing, 153-154
 - preferred supplier/vendor list, 109-110, 153-154
- sustainability, 208
- SWOT, 48

T

- T&M (time and materials)
 - contacts, 118
- tactical level process response, 136
- tactical risk planning, 26-29
 - risk communication, 29
 - risk for different types of projects, 26-27
 - risk identification, 27
 - risk response planning, 28
 - risk trigger planning, 27-28

- technical ability, 59
- Three-Point Estimating (PERT), 81
- time, 62-63
- time and materials (T&M)
 - contracts, 118
- tolerance for risk, 24-25, 30
- tornado diagram, 83
- transferring risk, 131
- Triangular probability distribution, 80-83
- triggers
 - early sign triggers, 185-186
 - examples, 186-187
 - trigger planning, 27-28
- Triple Constraint, 61-65, 121-122

U

- uncertainty versus risk, 4
- updating project documents
 - procurement monitoring, 228
 - risk monitoring, 209
 - risk response strategies, 137

V

- vendors
 - change control, 226-227
 - claims and disputes, 257-258
 - definition of, 110
 - historical purchases, 154
 - knowing, 153-154
 - preferred supplier/vendor list, 109-110, 153-154
- verifying
 - change order requests, 251-252
 - compliance of deliverable or service, 253-254
 - deliveries, 252
- volume pricing, 158

W-X-Y-Z

- warranties, 146
- WBS (work breakdown structure), 96, 219-220
- weighting factors for risk
 - prioritization, 89
- work activities, closing. *See* closing work activities
- work activity status meetings, 222
- work breakdown structure (WBS), 96, 219-220
- workmanship standards, 189-190