is important that you understand the traditional processes and Knowledge Areas in detail because they are the basis of the project management models that you will learn about in Part II. This book extends its treatment beyond those traditional practices into the contemporary world of project management.

Understanding the Fundamentals of Project Management

While the ancient Egyptians certainly followed some organized process to plan and build the pyramids, the history of modern project management dates from the 1950s. Several definitions have been put forward from PMI as well as others, and most of them are variations on the theme of managing projects so they are completed on-time, under-budget, and according to client specifications. That is all fine, but I have an even more fundamental definition to offer. My definition of project management is ''organized common sense,'' and indeed project management had better be organized common sense. If it's not, why are you doing it? Many project management processes fly in the face of common sense, and that makes no sense to me. This is a fair question to ask of many of the methodologies I have seen in practice. Many project management methodologies place undue burdens on the project manager and team without any good reason. There are plenty of management challenges without having to add what I call non-value-added work. Many of the old school ideas about project management carry that burden. While my definition may appear rather simple, it sends a strong message about project management.

However you choose to define your project management methodology, all valid project management methodologies must be reducible to answering the following six simple questions:

■ What business situation is being addressed?

■ What do you need to do?

■ What will you do?

■ How will you do it?

■ How will you know you did it?

■ How well did you do?

If your project management methodology doesn't embrace answering these six questions, it is incomplete. Go back to the drawing board. You will have to do better. Those of you who are new to project management, take heart. Project management boils down to answering these six questions and isn't all that difficult to master. The organized, common-sense definition embraces answers

to these six questions. You just need to take the time to stop and think about what you are about to do. Keep these six questions in mind and you will be well on your way to success as a project manager. Your organization's policies and procedures with respect to project management must allow room for you to exercise common sense. In this book, you will learn about common-sense project management processes and practices, and what the organization can do to support you. You will also learn a lot about making common-sense decisions in a variety of challenging project situations. The situations you learn how to deal with here are not all-inclusive, but they are complete enough that you will be able to deal with other situations with the confidence that you understand how to use and adapt the fundamentals to any project situation you may confront.

To get a clear understanding of the journey you're about to undertake, consider this analogy of my approach to teaching project management and learning to be a cook or chef. You can learn to be a cook and be able to follow recipes, or you can learn to be a chef and be able to create recipes for cooks to follow. Being able to follow recipes is essential to being a good cook, but being able to create recipes is the mark of a great chef. My girlfriend provides a great example. Late one evening, she asked if I would like her to bake us a cheesecake. She makes a really great cheesecake, so how could I turn down such an offer? A few minutes later, I heard a groan coming from the kitchen. ''What's wrong,'' I asked.

''We're all out of vanilla extract,'' she announced. The markets were all closed by now, so we would have to wait until the next day. A few minutes later, I heard a confident ''Yes!'' coming from the kitchen, and soon afterwards, I could smell a cheesecake being baked.

''Did you find the vanilla extract?'' I asked. She said that we had some vanilla frosting in the cupboard, and it had vanilla extract in it. So she figured out how much vanilla frosting she would have to use in order to substitute for the vanilla extract. That cheesecake was her best ever. She showed that she can create recipes, not just follow recipes.

I want to train you to be like a chef. The sign of a great project manager is one who can quickly adapt when a project does not meet the exact requirements of the approach being used or a surprise arises during the course of doing the project. I want to help you become that great project manager.

What Business Situation Is Being Addressed?

The project is being proposed to address a specific business situation. The situation may be either of the following:

- A project that corrects a problem. The problem may be that the company is experiencing less than acceptable process performance;

a system no longer meets the needs for which it was originally put in place; business conditions or requirements have changed, and the system needs to change as well; or legal requirements and regulations have changed, and systems need to be updated. The project being proposed may address all or some part of the problem.

■ A project that takes advantage of a heretofore untapped business opportunity. This could come about as a result of changing market conditions or the emergence of a new or improved technology.

At the initiation stage of the project, before it is even approved, a brief statement is needed to identify the problem or opportunity being addressed.

What Do You Need to Do?

What the client wants may not be what the client needs, and it is up to you, the project manager, to identify the client's true needs. I have found in over 40 years of practicing project management that clients will often express their wants as their attempt at proposing a solution to an unstated problem. In some instances, the client knows exactly what has to be done, and in other cases, they are making a guess. Their wants may be a correct statement of their needs, but you don't know that at the outset and they may not either. As part of the answer to the question ''What do you need to do?'' you will have to elicit a clear and complete statement of the problem to be solved and then provide a clear statement of how you intend to solve it.

Gathering and documenting client requirements is usually how the solution is defined. The solution should address the client's real needs, and you must convince them that it is the needs not the wants that you will address. As you will discover, forming the solution is often very difficult to do, especially at the beginning of the project. If you can provide a clear and complete requirements list, you will most likely use some type of traditional approach to managing the project. If you can't identify a complete solution, you have a very different kind of management problem. If you find yourself in this kind of situation, welcome to the world of complex and uncertain projects. They occur far more frequently than any other type of project — they are the rule, not the exception. Solving the management problem for these complex and uncertain projects is the primary focus of this book. And I promise you that by following my lead, you will be able to effectively manage even the most complex and uncertain of projects. I speak to you from over 40 years of managing projects using organized, common-sense approaches, and what I am sharing with you in this book is my recorded history of successfully managing projects often marked by complexity and uncertainty.

What Will You Do?

Once you understand what is needed, you and the client have to decide what can be done to meet that need. Of course you would like to meet all client requirements, but that may not be possible. A partial solution may be all that you can provide, and others will have to pick up the pieces and provide additional parts of the solution. There can be a number of reasons for only being able to provide a partial solution that are outside the client's, the enterprise's, or your capabilities and resources. You will explore these situations in Part II, where you will learn how to determine the best project management model to follow. Even after you have made a choice to use what you believe to be the best-fit model, you will have to modify it at the beginning of the project or at points along the way. After all, each project is unique, so wouldn't you expect your management approach to it to also be unique? And projects change, so wouldn't you expect your approach to them to also change?

How Will You Do It?

This is your plan for delivering an acceptable solution. The ideal plan will be the cradle-to-grave description of the work to be done, how long it will take, what resources will be needed, and how much the solution will cost. Whatever you may have been taught elsewhere, the reality is that developing such a complete plan is seldom possible. There are many situations that prevent the complete plan from being written and attained. These will be covered in Part II. When you can't build that ideal plan, you will have to use some variant of a just-in-time planning model. There are several such models that you will learn about in Part II. A just-in-time plan actually evolves over the course of doing the project. Plan a little, do a little, and continue in that repetitive fashion until the project is completed. I will identify the different situations that arise and provide alternative approaches to planning and executing such projects. Here is where organized common sense makes its initial stand.

How Will You Know You Did It?

Business reasons (success criteria) were put forth for justifying doing the project. An acceptable solution will meet both client requirements and those business success criteria. Client requirements are what the client believes define the best way to meet those business success criteria. If satisfying client requirements does result in the best solution, then those business success criteria will have been met as well. These will be quantified metrics with specific values that define project success. Either you met them and the project

was a success, or you didn't and the project was to some degree a failure. The success criteria should be stated at the beginning of the project in such a way that it is obvious that by the end of the project they have or have not been met. This is not a debate that takes place at the end of the project. It is a quantified statement made with the client during the very early stages of the project.

How Well Did You Do?

The project work is complete, and the solution has been implemented. It's time for the post-mortem. There are two different things to consider in analyzing how well you did. The first is the quality of the product that was produced by the project. Did it meet the client requirements, and did it achieve the business success criteria that justified doing the project in the first place? Both you and the client assume that by satisfying requirements, the desired business value was achieved. The cause-and-effect relationship that you identified may or may not be the dominating factor. Perhaps there are other confounding factors that were not considered in the original requirements list. The requirements definition is complex. Most project management gurus would agree that in all but the most trivial projects, a complete requirements definition cannot be done at the beginning of the project. Instead, the requirements list is a changing and expanding list that evolves over the life of the project. Requirements are learned and discovered during the course of executing the project plan. Planning and managing such a project becomes a real challenge but is not insurmountable. Part II explores these situations in great detail.

The second thing to consider is the process that was followed to produce the product. The correct analysis of the process that was followed will answer these four questions:

- How well defined and documented were the project management processes you chose to use?
- How well did the chosen processes fit the needs of the project?
- How well did the team follow the chosen processes?
- How well did the chosen processes produce the expected results?

Answers to the first two questions provide input to needed project management process improvements, and answers to the last two questions will provide input to needed practice improvement efforts (for example, training needs or improved processes for making project assignments).

CROSS-REF **Chapter 15 describes how to establish and conduct continuous process and practice improvement programs.**

Defining the Five Process Groups

In addition to answering the six questions that a valid project management methodology must answer, whatever project management life cycle model you use must contain all of the following Process Groups:

- Scoping Process Group (which PMI calls the Initiating Process Group)
- Planning Process Group
- Launching Process Group (which PMI calls the Executing Process Group)
- Monitoring and Controlling Process Group
- Closing Process Group

These five Process Groups are the building blocks of every PMLC. In the simplest of cases, the Process Groups will each be completed once and in the sequence listed here. In more complex situations, some or all of them might be repeated a number of times.

These five Process Groups are defined in PMBOK. What follows is my adaptation of these Process Groups for use in this book and to prepare you to adapt them for your own use. I have added other processes to conform to the PMLC requirements in Part II. None of these adaptations contradict any of the principles underlying PMBOK.

The Scoping Process Group

PMBOK calls this the Initiating Process Group. However, the term *initiating* can be confusing if you are new to project management. I find the term *scoping* to be clearer. This Process Group includes all processes related to answering the question "What do you need to do?" It does not include any processes related to doing any project work. That project work is defined in the Planning Process Group to be done later in the project life cycle. The Scoping Process Group also includes establishing the business success criteria that will be the metrics used to answer the question "How will you know you did it?"

The Scoping Process Group includes the following processes:

- Recruiting the project manager
- Eliciting the true needs of the client
- Documenting the client's needs
- Negotiating with the client about how those needs will be met

- Writing a one-page description of the project
- Gaining senior management approval to plan the project

As you can see, the successful completion of the Scoping Process Group is to gain the approval of senior management to move to the next phase of the project. In every PMLC, the next phase will be defined by the Planning Process Group. This direct linkage of the Scoping and Planning Process Groups is present in every PMLC you will study in Part II.

The Planning Process Group

The Planning Process Group includes all processes related to answering the question ''How will you do it?'' These processes are as follows:

- Defining all of the work of the project
- Estimating how long it will take to complete the work
- Estimating the resources required to complete the work
- Estimating the total cost of the work
- Sequencing the work
- Building the initial project schedule
- Analyzing and adjusting the project schedule
- Writing a risk management plan
- Documenting the project plan
- Gaining senior management approval to launch the project

There are a number of ways that each of the processes in the Planning Process Group can be done. The way that they are done may be a function of the PMLC model being used or any of several other factors. I'll offer my experiences in executing each process and in many cases offer several alternative ways of conducting the process. Choosing which to use in a given situation is where organized common sense again takes its stance.

The Launching Process Group

PMBOK calls this the Executing Process Group. It is that and more. The Launching Process Group includes all processes related to recruiting and organizing the team and establishing the team operating rules. These processes are preparatory to executing the project. The Launching Process Group also includes all of the processes related to getting the project work started. These would be the executing processes.

The Launching Process Group includes the following processes:

- Recruiting the project team
- Writing a project description document
- Establishing team operating rules
- Establishing the scope change management process
- Managing team communications
- Finalizing the project schedule
- Writing work packages

All of these processes relate more to the art of project management than to the science of project management. During the execution of this Process Group, the entire team may be coming together for the first time. There will be client members and your delivery team members present. Perhaps they are mostly strangers to one another. At this point, they are nothing more than a group. They are not yet a team but must become one in very short order. Thinking back over my early experiences as a project manager when meeting my team members for the first time, I think of my task to create a team as something akin to herding cats. You can't herd cats. There will be confusion and anxiety as they stare across the table at each other wondering why they are there, what they will be doing on the project, and what is happening on the project they should be working on in their home department. Being fully aware of this, the project manager will conduct that first team meeting with care, giving team members an opportunity to introduce themselves and what they bring to the project to the other team members.

The Monitoring and Controlling Process Group

The Monitoring and Controlling Process Group includes all processes related to the ongoing work of the project. These processes are as follows:

- Establishing the project performance and reporting system
- Monitoring project performance
- Monitoring risk
- Reporting project status
- Processing scope change requests
- Discovering and solving problems

Here is where the real work of the project takes place. It is a Process Group that consists of both the art and science of project management. It occupies

the project manager with activities internal to the project team itself (mostly science but a dose of art as well) and with activities external to the project team and dealing with the client, the sponsor, and your senior management (mostly art but a dose of science as well). As problems and change requests arise, the strength of your relationship with your client will in large measure contribute to the success or failure of the project.

The Closing Process Group

The Closing Process Group includes all processes related to the completion of the project, including answers to the three questions related to the question ''How well did you do?'' These processes are as follows:

- Gaining client approval of having met project requirements
- Planning and installing deliverables
- Writing the final project report
- Conducting the post-implementation audit

The end is finally coming into sight. The client is satisfied that you have met the acceptance criteria. It's time to install the deliverables and complete the administrative closedown of the project.

Defining the Nine Knowledge Areas

The nine Knowledge Areas are part of the PMBOK and are all present in every project management life cycle. They define the processes within each Process Group and often are part of more than one Process Group. This book covers all nine Knowledge Areas. The names of the Knowledge Areas used here are the same as the names used by PMI. They are defined later in this section.

Mapping Knowledge Areas to Process Groups

As you can see in Table 2-1, Process Groups and Knowledge Areas are closely linked.

What the Mapping Means

This mapping shows how interdependent the Knowledge Areas are with the Process Groups. For example, eight of the nine Knowledge Areas are started during the Planning Process Group and executed during the Monitoring and Control Process Group. That gives clear insight into the importance of