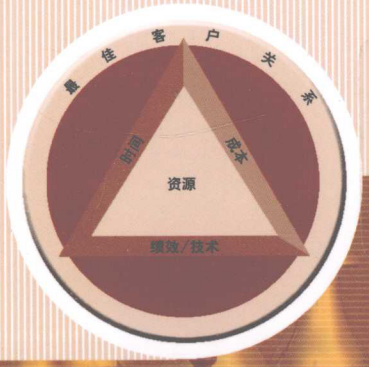
项目管理核心资源库

CENGAGE Learning

成功的项目管理

(第4版)(英文版)

(美) 杰 克·吉 多(Jack Gido)
詹姆斯·克莱门斯(James Clements) 著



Successful Project Management, 4th Edition

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Preface

We'll start digging from this side of the mountain. You and your gang start digging from the other side. When we meet in the middle, we will have made a tunnel. And if we don't meet, we will have made two tunnels!

OUR APPROACH

Project management is more than merely parceling out work assignments to individuals and hoping that they will somehow accomplish a desired result. In fact, projects that could have been successful often fail because of such take-it-for-granted approaches. Individuals need hard information and real skills to work successfully in a project environment and to accomplish project objectives. *Effective Project Management* was written to equip its users with both—by explaining concepts and techniques and by using numerous examples to show how they can be skillfully applied.

Although the focus of the book is squarely on the practical things readers absolutely need to know to thrive in project environments, the book does not forsake objective learning; it simply challenges readers to think critically about project management principles and to apply them within the context of the real world. We capture lessons learned from years of managing projects, teaching project management, and writing extensively about it.

Effective Project Management is intended for students as well as for working professionals and volunteers. The book is designed to present the essential skills readers need to make effective contributions and to have an immediate impact on the accomplishment of projects in which they are involved. Thus, it supports business and industry's lifelong learning programs, which develop and train employees to succeed on interdisciplinary and cross-functional teams, and it sends students into the workforce with marketable skills.

Effective Project Management is written for everyone involved in projects, not just project managers. Projects with good or even great project managers still may not succeed, as the best efforts of all involved are essential. All the people on the project team must have the knowledge and skills to work effectively together in a project environment. People do not become project managers by reading books; they become project managers by first being effective project team members. This book provides the foundation individuals need to be effective members of project teams and thereby boosts everyone's potential to rise to the challenge of managing teams and projects.

The book is written in an easy-to-understand, straightforward style with a minimum number of technical terms. Readers acquire project management terminology gradually as they read the text. The text does not use complex mathematical theories or algorithms to describe scheduling techniques, nor does

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it include highly technical projects as examples. An overtly technical approach can create a barrier to learning for individuals who lack deep understanding of advanced mathematics or technical backgrounds. Our book includes a broad range of easily understood examples based on projects encountered in everyday situations. For example, real-world applications include conducting a market survey, building an information system, and organizing a town festival. The mathematics is purposely kept simple. Separate appendixes are provided for those readers who want more in-depth coverage of probability considerations and time–cost trade-offs.

ABOUT THE AUTHORS

James P. Clements is the Provost and Vice President for Academic Affairs and the Robert W. Deutsch Distinguished Professor of Information Technology at Towson University. He previously held positions as Vice President for Economic and Community Outreach, executive director of the Center for Applied Information Technology, and Chair of the Department of Computer and Information Sciences at Towson University. He holds an M.S. and a Ph.D. in operations analysis from the University of Maryland Baltimore County, an M.S. in computer science from Johns Hopkins University, and a B.S. in computer science from the University of Maryland Baltimore County. He has published and presented more than 50 papers on various project management and information systems topics. During the past 20 years, he has served as a consultant to numerous industry and business groups. Dr. Clements is also a four-time winner of the Faculty Member of the Year Award given by students at Towson University.

Jack Gido is former director of Economic and Workforce Development and prior director of PENNTAP, the Pennsylvania Technical Assistance Program, at Penn State University. He previously held dual positions as manager of the Industrial Technology Extension Service for the New York Science and Technology Foundation and as deputy director of the Industrial Effectiveness Program at the New York State Department of Economic Development. His 20 years of industrial management experience includes management of productivity improvement and manufacturing technology programs for General Electric and Mechanical Technology, Inc. He received a B.S. in electrical engineering from Penn State University and an M.B.A. from the University of Pittsburgh. He has authored two other books on project management and teaches workshops on project management. Jack is a member of the Project Management Institute and was president of the Upstate New York chapter.

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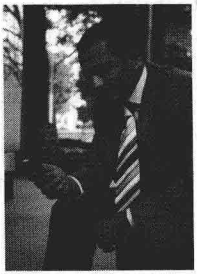
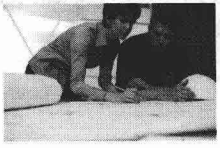
PART 1

The Life of a Project


CHAPTERS

1 Project Management Concepts

Provides an overview of project management concepts, the project life cycle, and the steps in the project management process.

2 Needs Identification

Discusses identifying needs and soliciting proposals, the first phase of the project life cycle.

3 Proposed Solutions

Explains the development of proposals for addressing a need or solving a problem, the second phase of the project life cycle.

4 The Project

Discusses the implementation of the proposed solution, the third phase of the project life cycle, including what is involved in planning and controlling the project. It also covers what should be done in the termination phase of the project life cycle.

The chapters in Part 1 introduce the concepts of project management and the project life cycle. A project is an endeavor to accomplish a specific objective through a unique set of interrelated tasks and the effective utilization of resources. It has a well-defined objective stated in terms of scope, schedule, and cost. Projects are "born" when a need is identified by the customer—the people or the organization willing to provide funds to have the need satisfied.

The first phase of the project life cycle involves the identification of a need, problem, or opportunity and can result in the customer's requesting proposals from individuals, a project team, or organizations (contractors) to address the identified need or solve the problem. The second phase of the project life cycle is the development of a proposed solution to the need or problem. This phase results in the submission of a proposal to the customer by one or more individuals or organizations. The third phase of the project life cycle is the implementation of the proposed solution. This phase, which is referred to as performing the project, results in accomplishment of the project objective, leaving the customer satisfied that the full scope of work was completed in a quality manner, within budget, and on time. The final phase of the project life cycle is terminating the project.

Project management involves the process of first establishing a plan and then implementing that plan to accomplish the project objective. Taking the time to develop a well-thought-out plan is critical to the successful accomplishment of any project. Once the project starts, the project management process involves monitoring progress to ensure that everything is going according to plan. The key to effective

project control is measuring actual progress and comparing it to planned progress on a timely and regular basis and taking corrective action immediately, if necessary.

The ultimate benefit of implementing project management techniques is having a satisfied customer — whether you are the customer of your own project or a business (contractor) being paid by a customer to perform a project. Completing the full scope of work of the project in a quality manner, on time, and within budget provides a great feeling of satisfaction. When projects are successful, everybody wins!

CHAPTER

1

Project Management Concepts

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Irish Agency Halts Work on Two SAP Application Projects

In October of 2005, two controversial SAP AG ERP system rollouts were halted in Ireland. The halting of these projects, valued at more than $380 million, ignited a political firestorm in Ireland. New York–based consulting firm Deloitte & Touche LLP was the contractor hired to implement both projects.

The Irish Health Service Executive (HSE), an oversight committee for Ireland's national health department, suspended work on the Personnel, Payroll and Related Systems (PPARS) project. The project was started 10 years ago to handle payroll functions for 120,000 employees.

It was halted on October 6 after numerous and widespread errors that were attributed to the implementation of the software were found at the major pilot site, St. James Hospital in Dublin. Problems were also identified in other regional installations in operations that employ over 37,000 department workers. One employee, for example, was accidentally paid $1.2 million.

In addition, HSE ceased work on another, unrelated health department project, the Financial Information Systems Project (FISP), which was designed to build a single financial and materials management system to support current and best practices. It was designed to replace a mismatch of legacy systems and processes. About $36 million had been spent on that project and it was expected to cost a total of $203 million to complete.

Critics in Parliament referred to the projects as examples of mismanagement and waste. A spokesman for Edna Kenny, the leader of Irish opposition party Fine Gael, stated, "It's like a case study in how not to run a project." The PPARS application has been described as the most complex human resources, time management, and payroll system ever to be implemented in Ireland.

The PPARS project was initially launched in 1995. The budget was set at $10.7 million and the project schedule was set at three years. After 10 years, the project cost had skyrocketed to $180 million before the project was scrapped. For this price, Kenny reported, the agency could have built a "brand new 600-bed hospital." HSE publicly reported that they did not realize the complexity of the older payroll system until the PPARS project was well underway.

Behind the success or failure of these projects and numerous others lies a critical component—project management. Projects such as these require serious planning, scheduling, organization, teamwork, communication, and leadership—all of which will be discussed in detail in this book.

By mastering these concepts you will greatly improve your chances of avoiding the pitfalls of the projects discussed above, while increasing your chances of success.

Songini, M., "Irish Agency Halts Work on Two SAP Application Projects," *Computerworld*, October 17, 2005.

This chapter presents an overview of project management concepts. You will become familiar with

- the definition of a project and its attributes
- the key constraints within which a project must be managed
- how a project is "born"
- the life of a project
- the steps involved in the project management process
- the implications of global project management
- the benefits of project management

ATTRIBUTES OF A PROJECT

A **project** is an endeavor to accomplish a specific objective through a unique set of interrelated tasks and the effective utilization of resources. The following attributes help define a project:

- A project has a well-defined **objective**—an expected result or product. The objective of a project is usually defined in terms of *scope, schedule,* and *cost.* For example, the objective of a project might be to introduce to the market—in 10 months and within a budget of $500,000—a new food preparation appliance that meets certain predefined performance specifications. Furthermore, it is expected that the work scope will be accomplished in a *quality manner* and to the *customer's satisfaction.*
- A project is carried out through a series of *interdependent tasks*—that is, a number of nonrepetitive tasks that need to be accomplished in a certain sequence in order to achieve the project objective.
- A project utilizes various *resources* to carry out the tasks. Such resources can include different people, organizations, equipment, materials, and facilities. For example, a wedding is a project that may involve resources such as a caterer, a florist, a limousine, and a reception hall.
- A project has a *specific time frame,* or finite life span. It has a start time and a date by which the objective must be accomplished. For example, the refurbishing of an elementary school might have to be completed between June 20 and August 20.
- A project may be a *unique* or *one-time endeavor.* Some projects, like designing and building a space station, are unique because they have never before been attempted. Other projects, such as developing a new product, building a house, or planning a wedding, are unique because of the customization they require. For example, a wedding can be a simple, informal occasion, with a few friends in a chapel, or a spectacular event staged for a prince.
- A project has a customer. The **customer** is the entity that provides the funds necessary to accomplish the project. It can be a person, an organization, or a partnership of two or more people or organizations. When a contractor builds a customized home for a couple, the couple is the customer funding the project. When a company receives funds from the government to develop a robotic device for handling radioactive material, the customer is the government agency. When a company provides funds

for a team of its employees to upgrade the firm's management information system, the term *customer* takes on a broader definition, including not only the project funder (the company's management) but also other stakeholders, such as the people who will be the end users of the information system. The person managing the project and the project team must successfully accomplish the project objective to satisfy the customer(s).

- Finally, a project involves a *degree of uncertainty*. Before a project is started, a plan is prepared based on certain assumptions and estimates. It is important to document these assumptions, because they will influence the development of the project budget, schedule, and work scope. A project is based on a unique set of tasks and estimates of how long each task should take, various resources and assumptions about the availability and capability of those resources, and estimates of the costs associated with the resources. This combination of assumptions and estimates causes a degree of uncertainty that the project objective will be completely accomplished. For example, the project scope may be accomplished by the target date, but the final cost may be much higher than anticipated because of low initial estimates for the cost of certain resources. As the project proceeds, some of the assumptions will be refined or replaced with factual information. For example, once the conceptual design of a company's annual report is finalized, the amount of time and effort needed to complete the detailed design and printing can be better estimated.

Reinforce Your Learning

1. What are some attributes of a project?

The following are some examples of projects:

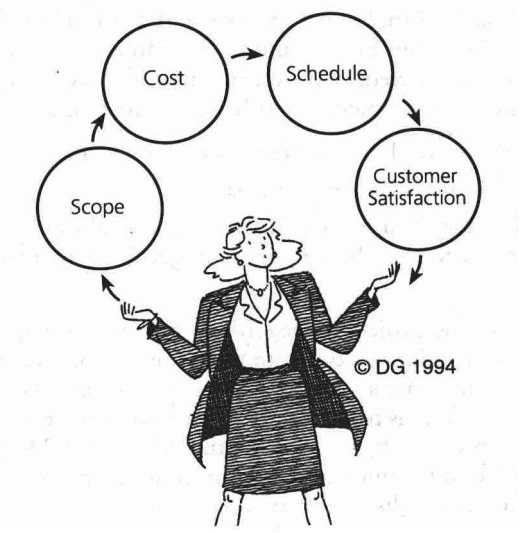
Staging a theatrical production
Developing and introducing a new product
Planning a wedding
Designing and implementing a computer system
Issuing a new $1.00 coin
Modernizing a factory
Consolidating two manufacturing plants
Converting a basement to a family room
Hosting a conference
Designing and producing a brochure
Executing an environmental cleanup of a contaminated site
Holding a high school reunion
Building a shopping mall
Performing a series of surgeries on an accident victim
Putting on a centennial celebration
Rebuilding a town after a natural disaster
Hosting a dinner for 20 relatives
Designing a business internship program for high school students
Building a tree house

Reinforce Your Learning

2. Identify five projects in which you have been involved during your lifetime.

The successful accomplishment of the project objective is usually constrained by four factors: *scope, cost, schedule,* and *customer satisfaction* (see Figure 1.1).

FIGURE 1.1 ***Factors Constraining Project Success***



Courtesy of Dynamic Graphics, Inc.

The scope of a project—also known as the **project scope** or the **work scope**—is all the work that must be done in order to satisfy the customer that the **deliverables** (the tangible product or items to be provided) *meet the requirements or acceptance criteria agreed upon at the onset of the project.* For example, the project scope might be all of the work involved in clearing the land, building a house, and landscaping to the specifications agreed upon by the contractor and the buyer. The customer expects the work scope to be accomplished in a quality manner. For example, in a house-building project, the customer expects the workmanship to be of the highest quality. Completing the work scope but leaving windows that are difficult to open and close, faucets that leak, or a landscape full of rocks will result in an unsatisfied customer.

The **cost** of a project is the amount the customer has agreed to pay for acceptable project deliverables. The project cost is based on a budget that includes an estimate of the costs associated with the various resources that will be used to accomplish the project. It might include the salaries of people who will work on the project, materials and supplies, rental of equipment or facilities, and the fees of subcontractors or consultants who will perform some of the project tasks. For example, if the project is a wedding, budgeted items might include flowers, gown, tuxedo, caterer, cake, limousine rental, photographer, and so on.

The **schedule** for a project is the timetable that specifies when each activity should start and finish. The project objective usually states the time by which the project scope must be completed in terms of a specific date agreed upon by the customer and the individual or organization performing the work. It might be the date when a town's centennial celebration will take place or the date by which you want to complete the addition of a family room to your home.

The objective of any project is to complete the scope of work within budget by a certain time to the customer's satisfaction. To help assure the achievement

of this objective, *it is important to develop a plan before the start of the project; this plan should include all the work tasks, associated costs, and estimates of the time necessary to complete them.* The lack of such a plan increases the risk of failing to accomplish the full project scope within budget and on schedule.

Reinforce Your Learning

3. What are four factors that constrain the achievement of a project objective?

Once a project is started, unforeseen circumstances may jeopardize the achievement of the project objective with respect to scope, cost, or schedule.

- The cost of some of the materials may be higher than originally estimated.
- Inclement weather may cause a delay.
- Additional redesign and modifications to a sophisticated piece of automated machinery may be required to get it to meet the performance specifications.

The challenge to the project manager is to prevent, anticipate, or overcome such circumstances in order to complete the project scope on schedule, within budget, and to the customer's satisfaction. *Good planning and communication* are essential to prevent problems from occurring or to minimize their impact on the achievement of the project objective when they do occur. The project manager needs to be proactive in planning and communicating and provide leadership to the project team to accomplish the project objective.

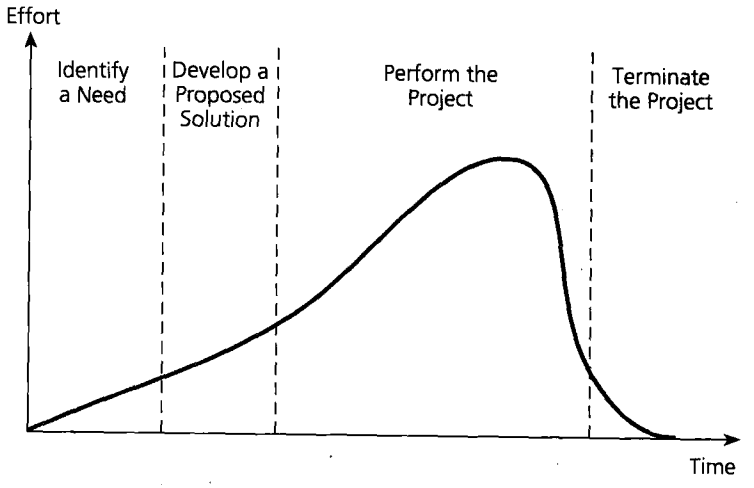
Ultimately, the responsibility of the project manager is to make sure the customer is satisfied. This goes beyond just completing the project scope within budget and on schedule or asking the customer at the end of the project if he or she is satisfied. It requires ongoing communication with the customer to keep the customer informed and to determine whether expectations have changed. Regularly scheduled meetings or progress reports, frequent phone discussions, and e-mail are examples of ways to accomplish such communications. Customer satisfaction means involving the customer as a partner in the successful outcome of the project through active participation during the project. The project manager must be aware of the degree of customer satisfaction throughout the project. By maintaining regular communication with the customer, the project manager demonstrates to the customer that he or she is genuinely concerned about the expectations of the customer; it also prevents unpleasant surprises later.

PROJECT LIFE CYCLE

Figure 1.2 shows the four phases of the **project life cycle** and the relative amount of effort and time devoted to each phase. As the project moves through its life cycle, different organizations, individuals, and resources play dominant roles.

Projects are "born" when a need is identified by the *customer*—the people or the organization willing to provide funds to have the need satisfied. For example, for a growing family, the need may be for a larger house, whereas for a company the problem may be a high scrap rate from its manufacturing process that makes its costs higher and production times longer than those of its competitors. The customer first must identify the need or problem. Sometimes the problem is identified quickly, as in the case of a disaster such as an earthquake or explosion. In other situations, it may take months for a customer to clearly identify a need, gather data on the problem, and define certain requirements that must be met by the person, project team, or contractor who will solve the problem.

FIGURE 1.2 ***Project Life Cycle Effort***



This *first phase* of the project life cycle involves the identification of a need, problem, or opportunity and can result in the customer's requesting proposals from individuals, a project team, or organizations (contractors) to address the identified need or solve the problem. The need and requirements are usually written up by the customer in a document called a **request for proposal (RFP)**. Through the RFP, the customer asks individuals or contractors to submit proposals on how they might solve the problem, along with the associated cost and schedule. A couple who need a new house may spend time identifying requirements for the house—size, style, number of rooms, location, maximum amount they want to spend, and date by which they would like to move in. They may then write down these requirements and ask several contractors to provide house plans and cost estimates. A company that has identified a need to upgrade its computer system might document its requirements in an RFP and send it to several computer consulting firms.

Not all situations involve a formal RFP, however. Needs often are defined informally during a meeting or discussion among a group of individuals. Some of the individuals may then volunteer or be asked to prepare a proposal to determine whether a project should be undertaken to address the need. Such a scenario might be played out when the management of a hospital wants to establish an on-site day care center for the children of its employees. The management team or a specific manager may write down the requirements in a document and give it to an internal project team, which in turn will submit a proposal for how to establish the center. In this case, the contractor is the hospital's own internal project team, and the customer is the hospital's manager or, possibly, board of directors. It is important to define the right need. For example, is the need to provide an on-site day care center, or is it to provide child care for the children of the hospital's employees? Is "on-site" necessarily part of the need?

The *second phase* of the project life cycle is the development of a proposed solution to the need or problem. This phase results in the submission of a **proposal** to the customer by one or more individuals or organizations