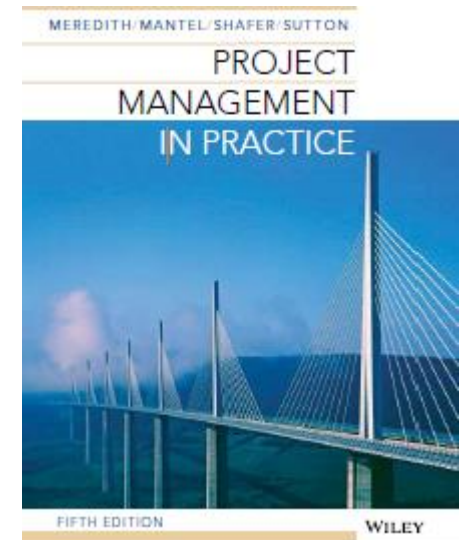


Project Management in Practice Fifth Edition

Chapter 1

The World of Project Management



Why the Emphasis on Project Management?

- Many tasks do not fit neatly into business-as-usual
- Organizations need to assign responsibility and authority for the achievement of their goals

Characteristics of Projects

- Unique
- Specific deliverables
- Specific due date

Formal Definition of a Project

“A project is a temporary endeavor undertaken to create a unique product or service.”

Project Management Institute, 2007

Formal Definition of Project Management

“The application of knowledge, skills, tools, and techniques to a broad range of activities in order to meet the requirements of a particular project.”

Project Management Institute, 2007

Other Common Characteristics of Projects

- Multidisciplinary
- Complex
- Often involve conflicts
- Part of programs

Trends in Project Management

- Achieving strategic goals
- Achieving routine goals
- Improving project effectiveness
- Virtual projects
- Quasi-projects

Comparison of Project Management and General Management

| <i>Dimension</i> | <i>Project Management</i> | <i>General Management</i> |
|-------------------------|---|---|
| Type of work activity | Unique | Routine |
| Management Approach | Ability to adapt to change | Manage by exception |
| Planning | Critical | Important |
| Budgeting | Start from scratch, multiple budget periods | Modify budget from previous budget period |
| Sequence of Activities | Must be determined | Often predetermined |
| Location of Work | Crosses organizational units | Within an organizational unit |
| Managerial Hierarchy | Informal | Well defined |

Table 1-1

Project Budgets

- Project budgeting differs from standard budgeting in the way budgets are constructed
- Budgets for non-projects are primarily modifications of budgets for the same activity in the previous period
- Project budgets are newly created for each project and often cover several “budget periods” in the future

Project Schedules

- In manufacturing, the sequence of activities is set when production line designed
 - Sequence is not altered when new models are produced
- Each project has a schedule of its own
 - Previous projects with deliverables similar to current one may provide a rough template
 - However, specifics unique to project at hand

Project Organizational Structure

- Routine work of organizations takes place within a well-defined structure
 - The divisions, departments, sections, and similar subdivisions of the total unit
- Typical project cannot thrive in this structure
- The need for technical knowledge, information, and special skills requires that departmental lines be crossed
 - Another way of describing the multidisciplinary character of projects

Globalization

- When large firms establish manufacturing plants or distribution centers in different countries, a management team is established on site
- For projects, globalization has a different meaning
- Members of project teams may be spread across countries and speak different languages
- Some project team members may never have a face-to-face meeting

Negotiation

- With little authority, the project manager depends on negotiation skills to gain the cooperation of departments in the organization
- Those departments have their own objectives, priorities, and personnel
- The project is not their responsibility and the project tends to get the leftovers

Three Different Types of Negotiation

1. Win-win
2. Win-lose
3. Lose-lose

Three Goals of Project Management

1. Scope
2. Cost
3. Time

Scope, Cost, and Time

Project Performance Targets

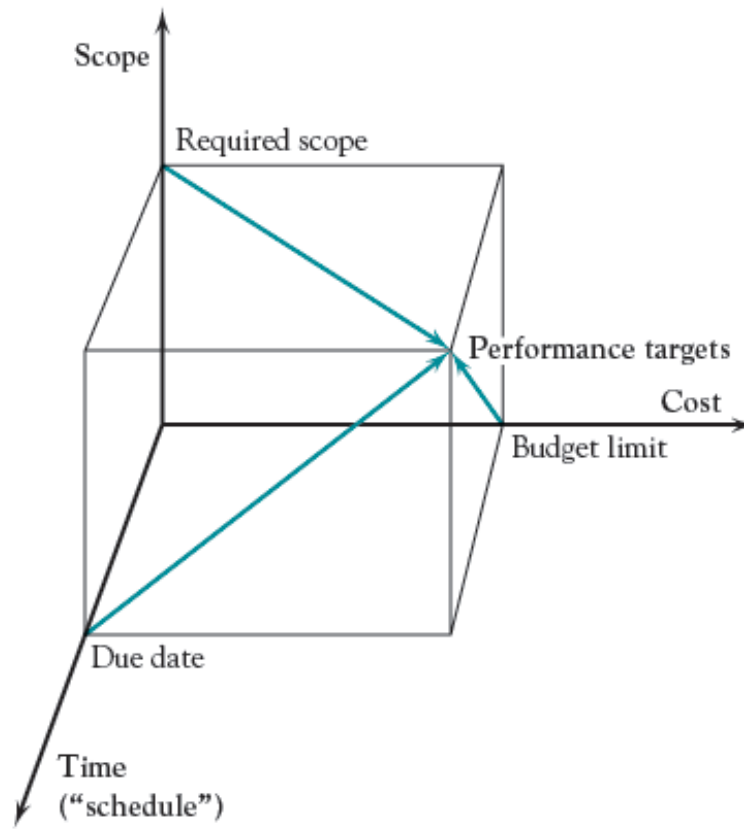


Figure 1-1

Uncertainty

- All projects are always carried out under conditions of uncertainty
 - Projects are all about uncertainty
- Effective project management requires an ability to deal with uncertainty
- Projects are complex and include interfaces, interdependencies, and assumptions, which may turn out to be wrong
 - People add to the uncertainty

Uncertainties Encountered in Project Management

- Time required to complete a project
- Availability and cost of key resources
- Timing of solutions to technological problems
- Macroeconomic variables
- The whims of clients
- Actions taken by competitors

Can Uncertainty be Eliminated?

- No, uncertainty cannot be eliminated
- However, if managed properly, it can be minimized

Managing Risk

- The first step in managing risk is to identify potentially uncertain events and likelihood of occurrence
 - Called *risk analysis*
- Different organizations approach this differently
- The essence of risk analysis is to make assumptions about key risk parameters and to use models to evaluate the desirability of certain managerial decisions

Fourth Project Goal

- There is a relationship between uncertainty and the three traditional project goals
- Therefore, we adopt the view in this book that managing uncertainty is a fourth goal of project management
- Thus, the primary role of the project manager is to effectively manage the trade-offs between cost, time, scope, and risk

Abilities Needed For Effective Project Management

- Ability to resolve conflicts
- Creativity and flexibility
- Ability to adjust to change
- Good planning skills
- Negotiation skills

The Life Cycle of Projects

- All organisms have a life cycle, they are born, grow, wane, and die
 - So do projects
- Some projects follow an S-shaped curve
 - They start slowly, develop momentum, and then finish slowly
- Other project follow a J-shaped curve
 - They start slowly , proceed slowly, and then finish rapidly

The Project Life Cycle

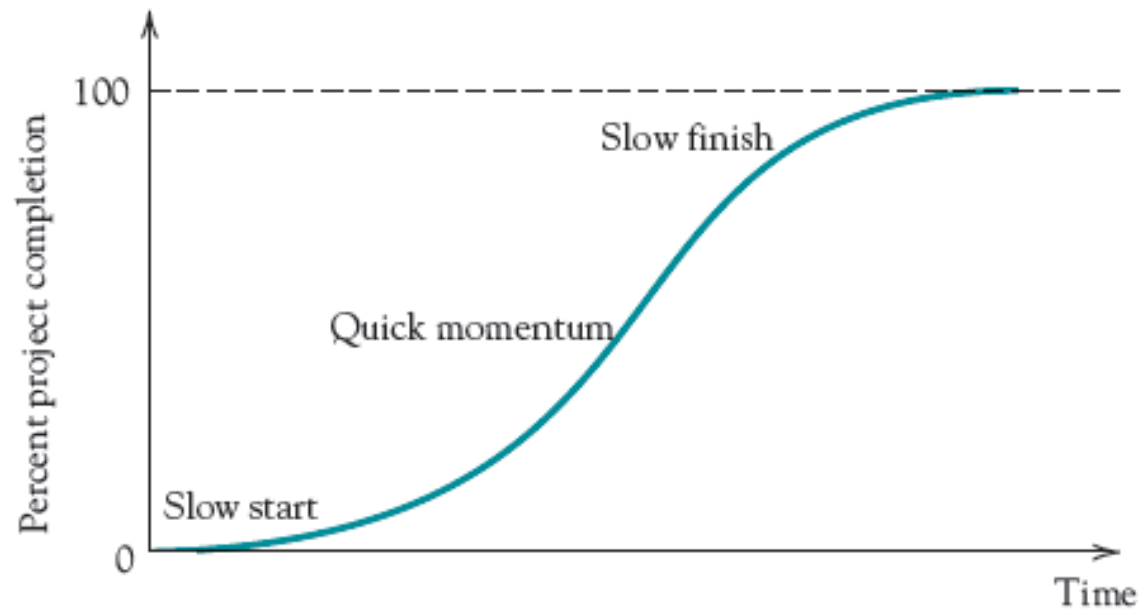


Figure 1-2

An Alternate Project Life Cycle

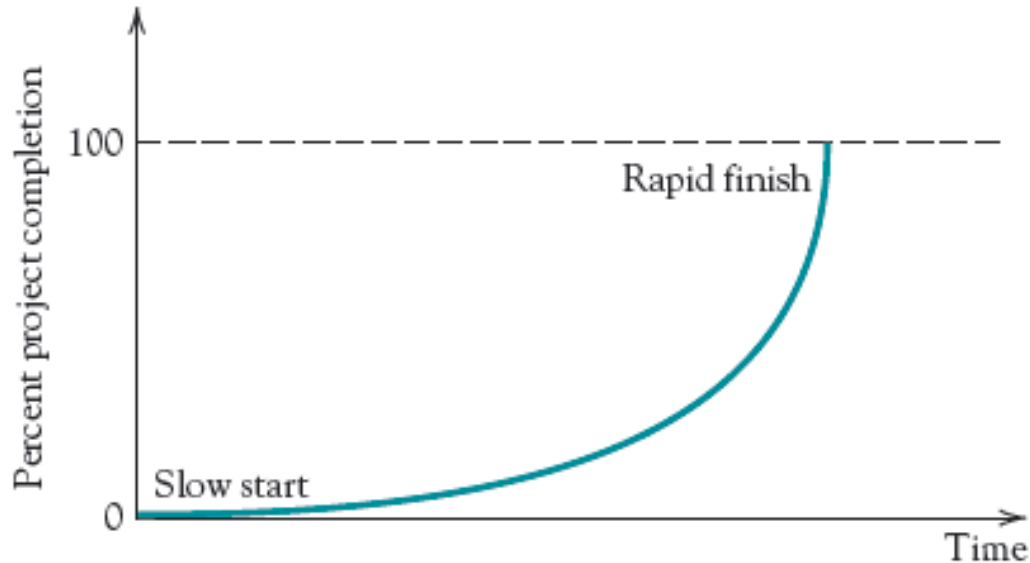


Figure 1-3

Selecting Projects To Meet Organizational Objectives

- Project selection is process of evaluating projects and choosing them so firm objectives are met
- Ensure that several conditions are considered
 1. Is the project potentially profitable?
 2. Is the project required
 3. Does firm have the skills to complete the project
 4. Does the project involve building strategic competencies
 5. Does it have capacity to carry out the project
 6. Can project be economically successful

Selection Methods

- There are many different methods for selecting projects
- They may be grouped into two fundamental types
 1. Nonnumeric: does not use numbers for evaluation
 2. Numeric: uses numbers for evaluation

Nonnumeric Selection Methods

- The *Sacred Cow*: a pet project advocated by a senior executive of the firm.
- The operating/competitive necessity
- Comparative benefits
 - Rank-ordering a small number of projects is not difficult
 - When the number of projects exceeds 15 or 20, the difficulty of ordering the group rises rapidly
 - A Q-sort is a convenient way to handle the task

The Q-sort Method

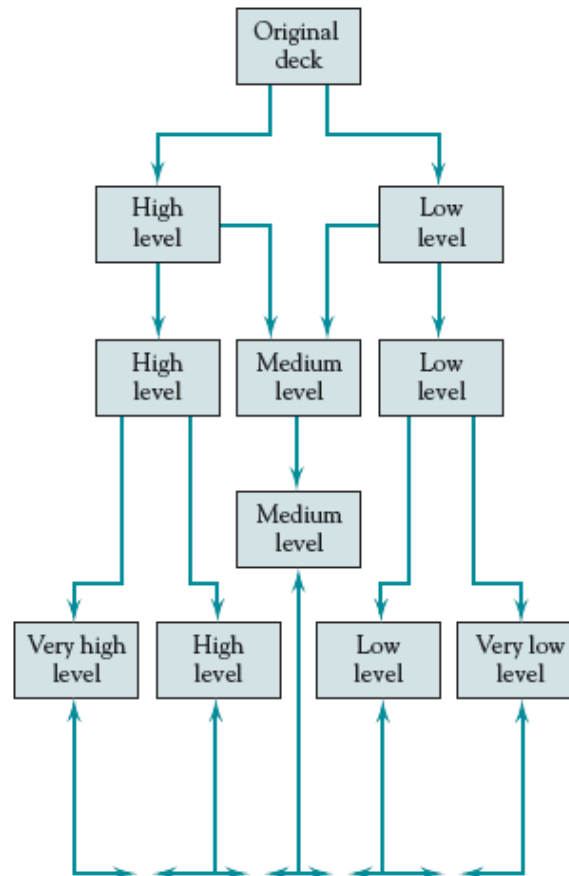


Figure 1-4

Numeric Selection Methods

- Financial assessment methods
 1. Payback period
 2. Discounted cash flow
 3. Future opportunity analysis
- Scoring methods
 1. Unweighted 0-1 factor method
 2. Weighted factor scoring method

Payback Period

$$\frac{\text{Initial Fixed Investment}}{\text{Annual Net Cash Inflows}}$$

Discounted Cash Flow

$$\text{NPV (project)} = -I_0 + \sum_{t=1}^n \frac{F_t}{(1+k)^t}$$

where

I_0 = The initial investment

F_t = The net cash flow in period t

k = The required rate of return or hurdle rate

The Weighted Scoring Model

$$S_i = \sum_{j=1}^n s_{ij} w_j$$

where

S_i = The total score of the i^{th} project

s_{ij} = The score of the i^{th} project on the j^{th} criterion

w_j = The weight or importance of the j^{th} criterion

Steps in the Project Portfolio Process

1. Establish a project council
2. Identify project categories and criteria
3. Collect project data
4. Assess resource availability
5. Reduce the project and criteria set
6. Prioritize the projects within categories
7. Select the projects to be funded and those to be held in reserve
8. Implement the process

Categories of Projects

- Derivative projects: those that are only incrementally different from existing offerings
- Platform projects: major departures from existing offerings
 - The next generation
- Breakthrough projects: involving a newer technology
 - Possibly a “disruptive” technology
- R&D projects: “blue sky” or visionary endeavors

The Materials in This Text

- Chapter 2 focuses on the behavioral and structural aspects of projects and their management
- Chapter 3 covers the process of planning and launching the project, construction of the WBS, and responsibility charts
- Chapter 4 discusses the construction of a project budget and presents a method of improving one's estimating skills

The Materials in This Text Continued

- Chapter 5 covers scheduling, PERT, CPM, and Gantt charts
- Chapter 6 covers resource allocation
- Chapter 7 covers monitoring and controlling projects
- Chapter 8 deals with evaluating, auditing, and terminating projects

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