# PROJECT COST MANAGEMENT

## Chapter Summary

Project cost management is a traditionally weak area of information technology projects. Information technology project managers must acknowledge the importance of cost management and take responsibility for understanding basic cost concepts, cost estimating, budgeting, and cost control.

Project managers must understand several basic principles of cost management in order to be effective in managing project costs. Important concepts include profits and profit margins, life cycle costing, cash flow analysis, sunk costs, and learning curve theory.

Estimating costs is a very important part of project cost management. There are several types of cost estimates, including rough order of magnitude (ROM), budgetary, and definitive.

Each type of estimate is done during different stages of the project life cycle, and each has a different level of accuracy. There are several tools and techniques for developing cost estimates, including analogous estimating, bottom-up estimating, parametric modeling, and computerized tools. A detailed example of a project cost estimate is provided, illustrating how to apply several of these concepts.

Determining the budget involves allocating costs to individual work items over time. It is important to understand how particular organizations prepare budgets so estimates are made accordingly.

Controlling costs includes monitoring cost performance, reviewing changes, and notifying project stakeholders of changes related to costs. Many basic accounting and finance principles relate to project cost management. Earned value management is an important method used for measuring project performance.

Earned value management integrates scope, cost, and schedule information. Project portfolio management allows organizations to collect and control an entire suite of projects or investments as one set of interrelated activities.

Several software products assist with project cost management. Project 2007 has many cost management features, including earned value management. Enterprise project management software and portfolio management software can help managers evaluate data on multiple projects.

# Quick Quiz

1. _____ is a resource sacrificed or foregone to achieve a specific objective or something given up in exchange.
   - a. Money
   - b. Liability
   - c. Trade
   - d. Cost

2. What is the main goal of project cost management?
   - a. to complete a project for as little cost as possible
   - b. to complete a project within an approved budget
   - c. to provide truthful and accurate cost information on projects
   - d. to ensure that an organization s money is used wisely

3. Which of the following is not a key output of project cost management?
   - a. activity cost estimates
   - b. a cost management plan
   - c. updates to the project management plan
   - d. a cost performance baseline

4. If a company loses $5 for every $100 in revenue for a certain product, what is the profit margin for that product?
   - a. 5 percent
   - b. 5 percent
   - c. $5
   - d. $5

5. _____ reserves allow for future situations that are unpredictable.
   - a. Contingency
   - b. Financial
   - c. Management
   - d. Baseline

6. You are preparing a cost estimate for a building based on its location, purpose, number of square feet, and other characteristics. What cost estimating technique are you using?
   - a. parametric
   - b. analogous
   - c. bottom-up
   - d. top-down

7. _____ involves allocating the project cost estimate to individual work items over time.
   - a. Reserve analysis
   - b. Life cycle costing
   - c. Project cost budgeting
   - d. Earned value analysis

8. _____ is a project performance measurement technique that integrates scope, time, and cost data.
   - a. Reserve analysis
   - b. Life cycle costing
   - c. Project cost budgeting
   - d. Earned value analysis

9. If the actual cost for a WBS item is $1500 and its earned value was $2000, what is its cost variance, and is it under or over budget?
   - a. the cost variance is $500, which is over budget
   - b. the cost variance is $500, which is under budget
   - c. the cost variance is $500, which is over budget
   - d. the cost variance is $500, which is under budget

10. If a project is halfway completed and its schedule performance index is 110 percent and its cost performance index is 95 percent, how is it progressing?

      a. it is ahead of schedule and under budget
      b. it is ahead of schedule and over budget
      c. it is behind schedule and under budget
      d. it is behind schedule and over budget

## Key Terms

**Actual cost (AC) —** the total of direct and indirect costs incurred in accomplishing work on an activity during a given period.

**Analogous estimates —** a cost estimating technique that uses the actual cost of a previous, similar project as the basis for estimating the cost of the current project, also called top-down estimates.

**Baseline —** the original project plan plus approved changes.

**Bottom-up estimates —** a cost estimating technique based on estimating individual work items and summing them to get a project total.

**Budget at completion (BAC) —** the original total budget for a project.

**Budgetary estimate —** a cost estimate used to allocate money into an organization's budget.

**Cash flow analysis —** a method for determining the estimated annual costs and benefits for a project.

**Contingency reserves —** dollars included in a cost estimate to allow for future situations that may be partially planned for (sometimes called **known unknowns**) and are included in the project cost baseline.

**Controlling costs —** controlling changes to the project budget.

**Cost baseline —** a time-phased budget that project managers use to measure and monitor cost performance.

**Cost management plan —** a document that describes how cost variances will be managed on the project.

**Cost performance index (CPI) —** the ratio of earned value to actual cost; can be used to estimate the projected cost to complete the project.

**Cost variance (CV) —** the earned value minus the actual cost.

**Definitive estimate —** a cost estimate that provides an accurate estimate of project costs.

**Determining the budget —** allocating the overall cost estimate to individual work items to establish a baseline for measuring performance.

**Direct costs —** costs that can be directly related to producing the products and services of the project.

**Earned value (EV) —** an estimate of the value of the physical work actually completed.

**Earned value management (EVM) —** a project performance measurement technique that integrates scope, time, and cost data.

**Estimate at completion (EAC) —** an estimate of what it will cost to complete the project based on performance to date.

**Estimating costs —** developing an approximation or estimate of the costs of the resources needed to complete the project.

**Indirect costs —** costs that are not directly related to the products or services of the project, but are indirectly related to performing the project.

**Intangible costs or benefits —** costs or benefits that are difficult to measure in monetary terms.

**Known unknowns —** dollars included in a cost estimate to allow for future situations that may be partially planned for (sometimes called **contingency reserves**) and are included in the project cost baseline.

**Learning curve theory —** a theory that states that when many items are produced repetitively, the unit cost of those items normally decreases in a regular pattern as more units are produced.

**Life cycle costing —** considers the total cost of ownership, or development plus support costs, for a project.

**Management reserves —** dollars included in a cost estimate to allow for future situations that are unpredictable (sometimes called unknown unknowns).

**Overrun —** the additional percentage or dollar amount by which actual costs exceed estimates.

**Parametric modeling —** a cost-estimating technique that uses project characteristics (parameters) in a mathematical model to estimate project costs.

**Planned value (PV) —** that portion of the approved total cost estimate planned to be spent on an activity during a given period.

**Profit margin —** the ratio between revenues and profits.

**Profits —** revenues minus expenses.

**Project cost management —** the processes required to ensure that the project is completed within the approved budget.

**Rate of performance (RP) —** the ratio of actual work completed to the percentage of work planned to have been completed at any given time during the life of the project or activity.

**Reserves —** dollars included in a cost estimate to mitigate cost risk by allowing for future situations that are difficult to predict.

**Rough order of magnitude (ROM) estimate —** a cost estimate prepared very early in the life of a project to provide a rough idea of what a project will cost.

**Schedule performance index (SPI) —** the ratio of earned value to planned value; can be used to estimate the projected time to complete a project.

**Schedule variance (SV) —** the earned value minus the planned value.

**Sunk cost—** money that has been spent in the past.

**Tangible costs or benefits —** costs or benefits that can be easily measured in dollars.

**Top-down estimates —** a cost estimating technique that uses the actual cost of a previous, similar project as the basis for estimating the cost of the current project, also called analogous estimates.

**Unknown unknowns —** dollars included in a cost estimate to allow for future situations that are unpredictable (sometimes called management reserves).