**Lesson 5: Cost Budgeting**

**Overview**

In this lesson, you will learn what to do with the cost estimates that you have create. You will find out how to translate estimates into a concrete and specific budget for a project.

**Lesson Objectives**

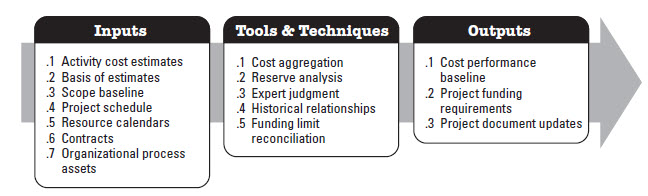
After mastering this lesson, you will be able to

* evaluate budgeting practices commonly used in your organization's industry;
* describe how budget negotiations are conducted in your place of work and discuss how such negotiations can be improved; and
* develop a cost (negotiating tool) budget for your team project.

**How Is Cost Budgeting Different from Cost Estimating?**

You may be thinking, "I've got the estimates—now what do I do with them?" When you begin the process of cost budgeting, you will take the cost estimates (linked to the project WBS) together with the project schedule, apply budgeting methods, and come up with a *initial buget*. This budget will then become a tool for discussions with management, sponsors and team to work toward the final approved budget (Lesson 6 covers the baselining topic fully). The baseline budget that you develop (in Lesson 6) for your project will measure the difference between planned and actual resource use. Figure 5.1 shows a concept map of the cost budgeting process.

**Figure 5.1—The Cost Budgeting Process**



To be useful, budgets need to tie resource *usage* to the achievement of organizational goals, not just to a time schedule. For example, expenditures might be within budget for the particular time period, but far in advance of completing particular project milestones. Conversely, management stakeholders may be misled when spending is excessive for a given time period but appropriate for the level of accomplishment. Because the budget is so valuable for identifying problems when project variances occur, data must be collected and interpreted regularly, or this value will be lost. For example, if a manager is instructed to take corrective actions in the fourth quarter of the year, based on third-quarter budget variances, it does him or her no good to receive this information in the first quarter of the following year. You will learn more about using the baseline budget to monitor project progress in PROJECT 440, *Implementation and Closeout.* For now, we will discuss various budgeting methods—that is, what you do with the individual cost estimates to create a costing budget.

**Abbreviations**

* WBS (work breakdown structure)
* PPBS (Planning-Programming-Budgeting System)
* ZBB (Zero-Based Budgeting)
* CBA (Cost-Benefit Analysis)

**Illustrating Cumulative Spending**

Lewis shows spending for three different project tasks, both weekly and cumulatively per week. Notice that if you use this type of schedule together with a schedule of project activities and milestones, you can compare the amount of money spent to date to the degree of task completion. This type of display provides a splendid view of what is happening to the schedule and budget for your project - at the same time. Lewis emphatically states that you need both views concurrently to determine if and where your project is really experiencing problems and opportunities. Those insights enable you to relate the project's true condition to any stakeholder.

Lewis takes the *cumulative spending* of the schedule cost diagramming and translates it into a graphed curve. For this example, this curve represents the cost baseline for expenditure of effort. This cumulative spending curve will allow you to track any variations from the planned expenditure of effort. This also represents the accumulated usage of budget that your customer will expect.

The example Lewis gives does not show spending on materials or equipment. These can be tracked in separate charts or in parallel curves on the same chart. Usually, general labor represents the most variant component. Lewis also talks about using project management software to plot this kind of information. Be sure you understand the concepts behind these charts before entering data into a program.

**Developing the Project Budget**

To create a project budget, obtain cost estimates for each work package or task in the WBS. Then aggregate these costs at the activity/milestone level. When all tasks have costs assigned (e.g., costs for labor, materials, equipment, and other categories), you can then compute incremental and cumulative spending, and create a cumulative spending chart that represents your cost budget.

**Types of Budgeting Programs**

Some of the material in this section has been adapted from chapter 7 of *Project Management: a Managerial Approach* by Jack R. Meredith and Samuel J. Mantel, Jr. (John Wiley & Sons, Inc., 1995).

**Activity Budgeting versus Program Budgeting**

**Key Terms**

* activity budgeting
* program budgeting

Matrix and projectized organizations have prompted the development of budgeting methods that associate budget items directly with the projects that use them. Traditional organization budgets are activity-oriented. In ***activity budgets***, individual expense items are categorized and assigned to budget lines such as communications, material, and personnel (with various categories listed, such as clerical, labor, and so on). These budget lines are gathered into more inclusive units, and are generally reported by organizational section, department, or division, so that, in effect, the budget can be overlaid on the organizational chart. However, this means a budget can be split up across various organizational units, making it difficult for project managers to get a handle on the major categories of expenditure for a project budget.

More recently, ***program budgeting*** has come into existence. This type of budgeting system aggregates income and expenditures *across* programs or projects. In most cases, this aggregating is in addition to aggregation by organizational unit. In other words, each project has its own budget. With pure project organizations, the budgets of all projects are aggregated to the highest organizational level possible. When program budgeting is used in a functional organization, the functional department's budget is arranged in the standard manner, but the income and expenses associated with each project are shown. These reports are usually in the form of spreadsheets, with standard budget categories listed vertically on the left-hand side of the sheet and category totals aggregated into "regular operations" and charges to the various projects. Project charges are split out and spread across the page, with special columns devoted to each project.

**Planning-Programming-Budgeting System (PPBS)**

***PPBS*** is a budgeting system associated with former Defense Secretary Robert McNamara's efforts to deal with the Defense Department's budget in the late 1960s. It emphasizes identifying those projects that will bring the greatest progress toward organizational goals for the least cost. It is based on four major tenets:

**Key Terms**

* Planning-Programming-Budgeting System (PPBS)
* Identifying goals and objectives for each major area of activity
* Analyzing programs proposed for attaining organizational goals, and articulating the nature of the programs and their contributions to the organization
* Estimating all costs for every project, including indirect costs
* Analyzing costs versus benefits

**Zero-Based Budgeting (ZBB)**

**Key Terms**

* Zero-Based Budgeting (ZBB)

***ZBB*** achieved prominence in the seventies in response to automatic budget increases each year for governmental agencies. The goal of this type of budgeting program is to review a program each year before it is funded again to see if continuing of funding is justified. ZBB was meant to help weed out programs that have outlived their usefulness. The procedure involves describing, evaluating, and ranking each program in terms of cost-benefit or some other measure. The problem with this type of budgeting is that it causes those whose budget may be threatened to spend more and more of their time and energy defending their program's existence. Additionally, ZBB has little support from those who must supply the data for the analyses. Even so, some executives use this budgeting method to raise the question of whether to continue funding projects that they see as ineffective. The concepts behind ZBB are indeed useful for making decisions about whether to continue funding or to terminate projects.

**Acknowledging Organizational Policy**

**Key Terms**

* participative organizations
* cooperation

Many organizations invite the top management of each division to submit a budget request each year. Although this may sound like bottom-up budgeting strategy, it isn't exactly. The invitation is often accompanied by a reiteration of (and/or update to) company policy on such items as adding to the work force, capital expenditures, project funding priorities, and other matters that prescribe limits on lower-level managers. Budget requests passed back up the organization are carefully inspected for compliance with policy and may be arbitrarily "adjusted" if they don't comply. Although many organizations allow some room for dialogue and compromise, even the more ***participative organizations*** expect lower-level managers to be sensitive to budget constraints articulated by senior management, and to adjust these budget requests accordingly. You can see how this can become a very "political" issue—but, I can tell you now that it will work against you and your project goals to repeatedly fail to conform to organizational policy. A key word here is ***cooperation***. Senior managers know from experience what kinds of figures are "in the ballpark" and therefore conform to company budgetary policy. As you gain experience as project manager, you will develop that same type of insight into the likely costs and schedules of your projects.

**Obtaining the Resources to Complete the Project**

Once you have estimated resources for your project, you need to obtain the resources to do the work. Approval of the project budget by senior management stakeholders is what will enable you to acquire the resources you need. A great deal of importance is placed on the allocation of resources in an organization. In fact, the pattern of budget constraints is generally a direct reflection of organizational policy. Therefore, the amount of support given to a particular budgetary activity is evidence of organizational support for the activity. Although it may seem senior managers are never happy with project budgets, this is because they continually deal with budget constraints. Most senior managers, however, strive to be fair in the budget approval process. They know that underfunding is as wasteful as overfunding. That is, a budget that restricts achievement and increases frustration—or even causes project failure—is quite a risk in itself.

**Quality Management Processes—Cost Budgeting**

**Practice Exercise 5-1: Developing a Cost Budget**

This exercise has two parts. In Part 1, you will use data for a sample project to create a chart that shows task durations, weekly spending, and cumulative spending.

In Part 2, you will plot curves for labor spending and materials spending. Blank templates are provided for you to use.

**Quality Management As Part of the Budget Planning Process**

Remember that *quality planning* should be performed in conjunction with the other project planning processes. The quality management policy of your organization will probably include the organizational policies on budgeting.

**Remember the Stakeholders**

Part of quality management is remembering the needs of all project stakeholders. Different stakeholders measure costs in different ways. You need to think about how to convey information appropriately to each stakeholder.

**Cost-Benefit Analysis**

***Cost-benefit analysis (CBA)*** may also be part of your organization's quality management processes as they relate to budgeting.

In a cost-benefit analysis, we assess the attractiveness of alternatives for aspects of the project process, based on estimates of tangible and intangible costs and benefits associated with each alternative. We can assess the desirability of alternatives with financial yardsticks such as return on investment and payback period. A well-done cost-benefit analysis (CBA) can be a powerful tool for helping to enlist management support for a project, because it can be used to demonstrate benefits in terms of dollars spent.

**Key Terms**

* cost-benefit analysis (CBA)

You may be asking, "What kinds of opportunities should require a CBA?" Often, major equipment purchases require the documented justification that a CBA provides. Recent trends in business, however, indicate CBA is also being used for other business decisions—including expansions, organizational changes, and major purchases other than equipment. CBA may be appropriately applied to

* adding personnel
* establishing technologies
* equipment purchases
* computer system upgrades (hardware and software)
* contracting or outsourcing
* obtaining different vendors
* changing workflow
* implementing new procedures
* upgrading facilities
* relocating offices or function

You may find that performing a CBA is an important part of budget development, especially as you prepare to present your budget to senior managers for approval. You may have a cost category for which you would like to generate support using a CBA, perhaps to show benefits that will accrue to the organization over time.