Budgeting for Planning and Control

CHAPTER 8

AFTER STUDYING THIS CHAPTER, YOU SHOULD BE ABLE TO:

1. Define budgeting, and discuss its role in planning, controlling, and decision making.
2. Prepare the operating budget, identify its major components, and explain the interrelationships of the various components.
3. Identify the components of the financial budget, and prepare a cash budget.
4. Define flexible budgeting, and discuss its role in planning, control, and decision making.
5. Define activity-based budgeting, and discuss its role in planning, control, and decision making.
6. Identify and discuss the key features that a budgetary system should have to encourage managers to engage in goal-congruent behavior.

Careful planning is vital to the health of any organization. Failure to plan, either formally or informally, can lead to financial disaster. Managers of businesses, whether small or large, must know their resource capabilities and have a plan that details the use of these resources. In this chapter, the basics of budgeting are discussed, and traditional master budgets using functional-based accounting data are developed. Flexible and activity-based budgeting are also presented, along with extensive discussion of the behavioral aspects of budgeting and its use in control.

The Role of Budgeting in Planning and Control

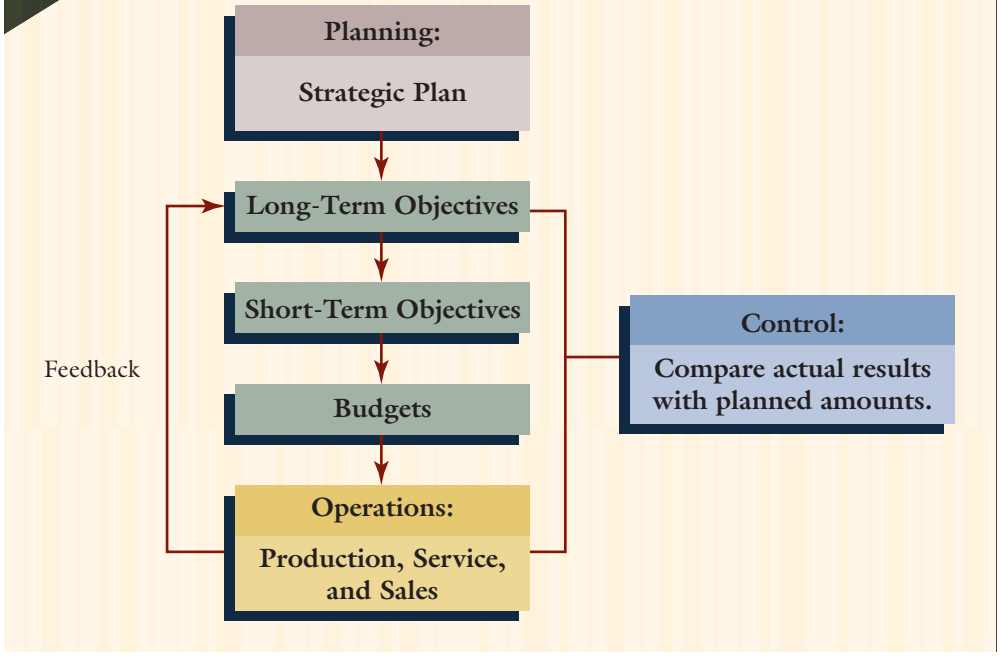
OBJECTIVE 1

Define budgeting, and discuss its role in planning, controlling, and decision making.

Budgeting plays a crucial role in planning and control. Plans identify objectives and the actions needed to achieve them. **Budgets** are the quantitative expressions of these plans, stated in either physical or financial terms or both. When used for planning, a budget is a method for translating the goals and strategies of an organization into operational terms. Budgets can also be used in control. **Control** is the process of setting standards, receiving feedback on actual performance, and taking corrective action whenever actual performance deviates significantly from planned performance. Thus, budgets can be used to compare actual outcomes with planned outcomes, and they can steer operations back on course, if necessary.

Exhibit 8-1 illustrates the relationship of budgets to planning, operating, and control. Budgets evolve from the long-run objectives of the firm; they form the basis for operations. Actual results are compared with budgeted amounts through control. This comparison provides feedback both for operations and for future budgets.

EXHIBIT 8-1 The Master Budget and Its Interrelationships



Purposes of Budgeting

Budgets are usually prepared for areas within an organization (departments, plants, divisions, and so on) and for activities (sales, production, research, and so on). This system of budgets serves as the comprehensive financial plan for the organization as a whole and gives an organization several advantages.

1. It forces managers to plan.
2. It provides resource information that can be used to improve decision making.
3. It aids in the use of resources and employees by setting a benchmark that can be used for the subsequent evaluation of performance.
4. It improves communication and coordination.

Budgeting forces management to plan for the future—to develop an overall direction for the organization, foresee problems, and develop future policies. When managers

plan, they grow to understand the capabilities of their businesses and where the resources of the business should be used. All businesses and not-for-profit entities should budget. All large businesses do budget. In fact, the budgeting activity of a company such as **Conoco** or **IBM** consumes significant amounts of time and involves many managers at a variety of levels. Some small businesses do not budget, and many of those go out of business in short order.

Budgets enable managers to make better decisions. For example, a cash budget points out potential shortfalls. If a company foresees a cash deficiency, it may want to improve accounts receivable collection or postpone plans to purchase new assets.

Budgets set standards that can control the use of a company's resources and control and motivate employees. Fundamental to the overall success of a budgetary system, control ensures that steps are being taken to achieve the objectives outlined in an organization's master plan.

Budgets also serve to communicate the plans of the organization to each employee and to coordinate their efforts. Accordingly, all employees can be aware of their role in achieving those objectives. This is why explicitly linking the budget to the long-run plans of the organization is so important. The budget is not a series of vague, rosy scenarios, but a set of specific plans to achieve those objectives. Budgets encourage coordination because the various areas and activities of the organization must all work together to achieve the stated objectives. The role of communication and coordination becomes more important as an organization increases in size.

The Budgeting Process

The budgeting process can range from the fairly informal process undergone by a small firm, to an elaborately detailed, several-month procedure employed by large firms. Key features of the process include directing and coordinating the compilation of the budget.

Directing and Coordinating

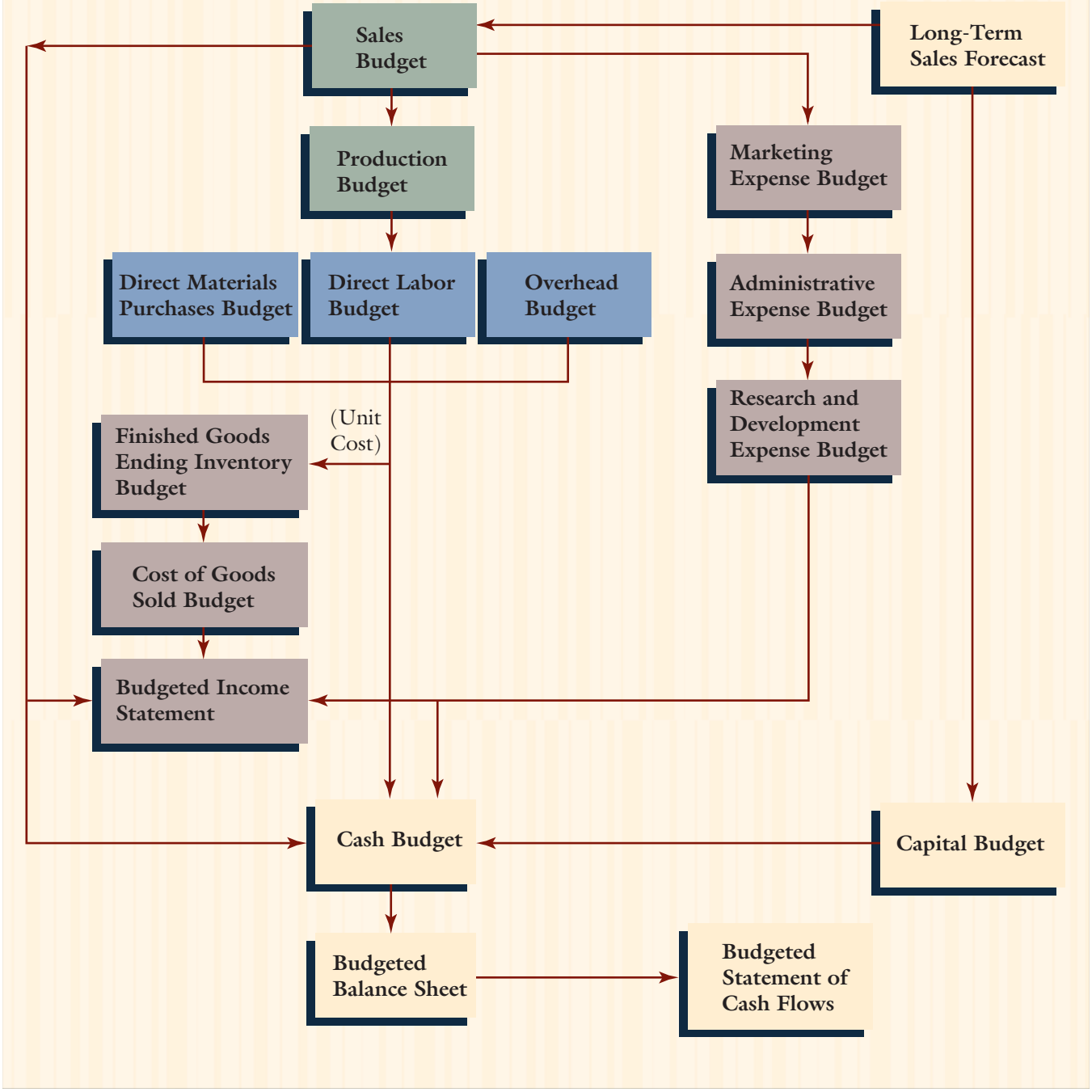
Every organization must have someone responsible for directing and coordinating the overall budgeting process. This **budget director** is usually the controller or someone who reports to the controller. The budget director works under the direction of the budget committee. The **budget committee** has the responsibility to review the budget, provide policy guidelines and budgetary goals, resolve differences that may arise as the budget is prepared, approve the final budget, and monitor the actual performance of the organization as the year unfolds. The budget committee is also responsible for ensuring that the budget is linked to the strategic plan of the organization. The president of the organization appoints the members of the committee, who are usually the president, vice presidents, and the controller.

Types of Budgets

The **master budget** is a comprehensive financial plan for the year made up of various individual departmental and activity budgets. A master budget can be divided into *operating* and *financial* budgets. **Operating budgets** are concerned with the income-generating activities of a firm: sales, production, and finished goods inventories. The ultimate outcome of the operating budgets is a pro forma or budgeted income statement. Note that "pro forma" is synonymous with "budgeted" and "estimated." In effect, the pro forma income statement is done "according to form" but with estimated, not historical, data. **Financial budgets** are concerned with the inflows and outflows of cash and with financial position. Planned cash inflows and outflows are detailed in a cash budget, and expected financial position at the end of the budget period is shown in a budgeted, or pro forma, balance sheet. Exhibit 8-2 illustrates the components of the master budget.

The master budget is usually prepared for a 1-year period corresponding to the company's fiscal year. The yearly budgets are broken down into quarterly and monthly

EXHIBIT 8-2 Components of the Master Budget



budgets. The use of shorter time periods allows managers to compare actual data with budgeted data as the year unfolds and to make timely corrections. Because progress can be checked more frequently with monthly budgets, problems are less likely to become too serious.

Most organizations prepare the budget for the coming year during the last four or five months of the current year. However, some organizations have developed a con-

tinuous budgeting philosophy. A **continuous (or rolling) budget** is a moving 12-month budget. As a month expires in the budget, an additional month in the future is added so that the company always has a 12-month plan on hand. Proponents of continuous budgeting maintain that it forces managers to plan ahead constantly. The majority of CFOs believe that rolling forecasts are very valuable, and companies that do use them typically roll the forecasts out for five or six quarters rather than four.[1]

Similar to a continuous budget is a continuously updated budget. The objective of this budget is not to have 12 months of budgeted information at all times, but instead to update the master budget each month as new information becomes available. For example, every autumn, **Chandler Engineering** prepares a budget for the coming year. Then at the end of each month of the year, the budget is transformed into a rolling forecast by recording year-to-date results and the forecast for the remainder of the year. In essence, the budget is continually updated throughout the year.

Gathering Information for Budgeting

At the beginning of the master budgeting process, the budget director alerts all segments of the company to the need for gathering budget information. The data used to create the budget come from many sources. Historical data are one possibility. For example, last year's direct materials costs may give the production manager a good feel for potential materials costs for next year. Still, historical data alone cannot tell a company what to expect in the future.

Forecasting Sales

The sales forecast is the basis for the sales budget, which, in turn, is the basis for all of the other operating budgets and most of the financial budgets. Accordingly, the accuracy of the sales forecast strongly affects the soundness of the entire master budget.

Creating the sales forecast is usually the responsibility of the marketing department. One approach is for the chief sales executive to have individual salespeople submit sales predictions, which are aggregated to form a total sales forecast. The accuracy of this sales forecast may be improved by considering other factors such as the general economic climate, competition, advertising, pricing policies, and so on. Some companies supplement the marketing department forecast with more formal approaches, such as time-series analysis, correlation analysis, econometric modeling, and industry analysis.

To illustrate an actual sales forecasting approach, consider the practices of a company that manufactures oil field equipment on a job-order basis. Each month, the finance and sales departments' heads meet to construct a sales forecast based on bookings. A booking is a probable sales order submitted by sales personnel in the field; it is meant to alert the engineering and manufacturing departments to a potential job. Past experience has shown that bookings are generally followed by sales/shipments within 30 to 45 days. Exhibit 8-3, on the following page, shows the short-term bookings forecast for the company. Notice that the dollar amount of each booking is multiplied by its probability of occurrence to obtain a weighted dollar amount. The sum of weighted amounts is the forecast for sales for the month. The probability estimate requires additional explanation. The probability is determined jointly by the salesperson and the controller. Each probability is initially set at 50 percent. Then, it is adjusted upward or downward based on any additional information about the sale. The probability is really a prediction of a compound event, the prediction of both getting the order and determining the month in which it will happen. The sales department tends toward overconfidence—both in terms of getting the order

1. Omar Aguilar, "How Strategic Performance Management Is Helping Companies Create Business Value," *Strategic Finance* (January 2003): 44–49.

EXHIBIT 8-3 Short-Term Bookings Forecast for Oil Field Equipment Company

Quote #	Region/ Country	Customer	Product	Dollar Amount	Probability	Weighted Month Total
March 2007						
1194-17	Spain	Valencia	repair 3224	$ 37,500	100%	$ 37,500
1294-03	Bulgaria	Luecim	1256, 7188	74,145	80	59,316
0195-55	USA	Exxon	4498	25,000	95	23,750
0295-19	USA	BP/TX	6766, 1267	150,442	100	150,442
0295-23	China	China Res	7541, 8875	55,900	75	41,925
0295-45	China	China Res	8879, 0944	34,500	80	27,600
0395-36	Abu Dhabi	ADES	7400, 6751, 5669 & spares	30,000	50	15,000
March Total						$355,533
April 2007						
1294-14	China	Jiang Han	6524, 5523, 0412, 4578, 3340	$234,000	80%	$187,200
0295-43	Russia	Geoserv	3356	76,800	60	46,080
0295-10	Venezuela	Petrolina	4450, 6713, 7122	112,500	90	101,250
0395-37	Indonesia	Chevron	8890, 0933	98,000	65	63,700
0395-71	Italy	CV International	7815	16,000	70	11,200
April Total						$409,430
May 2007						
0295-21	Mexico	Instituto Mexicana	8900 & spares	$ 34,000	40%	$ 13,600
0395-29	Venezuela	Petrolina	8416, 8832	165,000	50	82,500
0495-11	USA	Branchwater, Inc.	9043, 8891	335,000	60	201,000
0495-68	Saudi Arabia	Aramco	0453	3,500	50	1,750
May Total						$298,850

and in landing it sooner rather than later. As a result, the controller takes a more pessimistic view and modifies the forecast. The end result is the form shown in the exhibit.

Forecasting Other Variables

Of course, sales are not the only concern in budgeting. Costs and cash-related items are critical. Many of the same factors considered in sales forecasting apply to cost forecasting. Here, historical amounts can be of real value. Managers can adjust past figures based on their knowledge of coming events. For example, a 3-year union contract takes much of the uncertainty out of wage prediction. (Of course, if the contract is expiring, the uncertainty returns.) Alert purchasing agents will have an idea of changing materials prices. In fact, large companies such as **Nestlé** and **The Coca-Cola Company** have entire departments devoted to the forecasting of commodity prices and supplies. They invest in commodity futures to smooth out price fluctuations, an action that facilitates budgeting. Overhead is broken down into its component costs; these can be predicted using past data and relevant inflation figures.

The cash budget is a critically important part of the master budget, and some of its components, especially payment of accounts receivable, also require forecasting. This is discussed in more detail in the section on cash budgeting.

COST MANAGEMENT **Technology in Action**

Revlon has adopted a new computer system that manages sales data for each item in each store. It can track sales as specifically as by color of nail polish. This information will be used to better manage production and shipping. Revlon wants to use the technology to effect some behavioral changes by retail stores. The technology will enable it to rank stores by sales, allowing it to offer more perks to high-selling stores, including more attention from its salespeople and first opportunity to receive new displays.

The faster, better information allows Revlon to adjust budgets continually throughout the year. As a result, the company can manage operations by cutting the production and shipment of slow-selling cosmetics and ramping up production of the hot sellers.

Revlon has also changed its merchandise exchange policies—forcing retailers to assume more risk. Previously, Revlon flooded the marketplace with buy-one-get-one-free offers. Those have been pared back significantly. In addition, Revlon pays retailers less to advertise and discount its merchandise. It now bases such funding on the stores' sales rather than shipments. In the past, stores were able to return unsold makeup for a full refund. Now, Revlon refunds only a portion of the price on some items and nothing at all on other items. In effect, retailers are asked to think twice before ordering. Revlon's president of North America sales, Larry Aronson, says, "We're trying to get some behavior change, and we're putting in financial incentives to drive that."

Source: Emily Nelson, "Revlon Chief Banks on Risky Strategy as He Seeks New Image for Ailing Firm," *The Wall Street Journal* (November 21, 2000): B1.

OBJECTIVE 2

Prepare the operating budget, identify its major components, and explain the interrelationships of the various components.

Preparing the Operating Budget

The first section of the master budget is the operating budget. It consists of a series of schedules for all phases of operations, culminating in a budgeted income statement. The following are the components of the operating budget.

1. Sales budget
2. Production budget
3. Direct materials purchases budget
4. Direct labor budget
5. Overhead budget
6. Ending finished goods inventory budget
7. Cost of goods sold budget
8. Marketing expense budget
9. Research and development expense budget
10. Administrative expense budget
11. Budgeted income statement

You may want to refer back to Exhibit 8-2 to see how these components of the operating budget fit into the master budget.

The example used to illustrate the components of the operating budget is based on ABT, Inc., a manufacturer of concrete block and pipe for the construction industry. For simplicity, we will prepare the operating budget for ABT's concrete block line. (The budget for the pipe product line is prepared in the same way and merged into the overall company budget.)

Sales Budget

The **sales budget** is the projection approved by the budget committee that describes expected sales for each product in units and dollars.

Schedule 1 illustrates the sales budget for ABT's concrete block line. (For a multiple-product firm, the sales budget reflects sales for each product in units and sales dollars.) Notice that the sales budget reveals that ABT's sales fluctuate seasonally. Most sales (75 percent) take place in the spring and summer. Also, note that ABT expects

Schedule 1
(in thousands)

Sales Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Units	2,000	6,000	6,000	2,000	16,000
Unit selling price	×$0.70	×$0.70	×$0.80	×$0.80	× $0.75
Sales	$ 1,400	$ 4,200	$ 4,800	$ 1,600	$12,000

price to increase from $0.70 to $0.80 in the summer quarter. Because of the price change within the year, an average price must be used for the column that describes the total year's activities ($0.75 = $12,000/16,000 units).

Production Budget

The **production budget** describes how many units must be produced in order to meet sales needs and satisfy ending inventory requirements. From Schedule 1, we know how many concrete blocks are needed to satisfy sales demand for each quarter and for the year. If there were no inventories, the concrete blocks to be produced would just equal the units to be sold. In the JIT firm, for example, units sold equal units produced, since a customer order triggers production.

Usually, however, the production budget must consider the existence of beginning and ending inventories. Assume that ABT company policy sets desired ending inventory of concrete blocks for each quarter as follows.

Quarter	*Ending Inventory*
1	500,000
2	500,000
3	100,000
4	100,000

To compute the units to be produced, we must know both unit sales and units in desired finished goods inventory.

$$\text{Units to be produced} = \text{Units, ending inventory} + \text{Unit sales} - \text{Units, beginning inventory}$$

The formula is the basis for the production budget in Schedule 2. Notice that the production budget is expressed in terms of units; we do not yet know how much they will cost.

Schedule 2
(in thousands)

Production Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Sales (Schedule 1)	2,000	6,000	6,000	2,000	16,000
Desired ending inventory	500	500	100	100	100
Total needs	2,500	6,500	6,100	2,100	16,100
Less: Beginning inventory	100	500	500	100	100
Units to be produced	2,400	6,000	5,600	2,000	16,000

Direct Materials Purchases Budget

After the production schedule is completed, budgets for direct materials, direct labor, and overhead can be prepared. The **direct materials purchases budget** is similar in format to the production budget; it is based on the amount of materials needed for production and the inventories of direct materials.

Expected direct materials usage is determined by the input-output relationship (the technical relationship existing between direct materials and output). This relationship is often determined by the engineering department or the industrial designer. For example, one lightweight concrete block requires approximately 26 pounds of materials (cement, sand, gravel, shale, pumice, and water). The relative mix of these ingredients is fixed for a specific kind of concrete block. Thus, it is fairly easy to determine expected usage for each material from the production budget by multiplying the amount of material needed per unit of output times the number of units of output.

Once expected usage is computed, the purchases (in units) are computed as follows:

$$\text{Purchases} = \text{Desired ending inventory of direct materials} + \text{Expected usage} - \text{Beginning inventory of direct materials}$$

The quantity of direct materials in inventory is determined by the firm's inventory policy. ABT's policy is to have 2,500 tons of materials (5 million pounds) in ending inventory for the third and fourth quarters and 4,000 tons of materials (8 million pounds) in ending inventory for the first and second quarters. The direct materials purchases budget for ABT is presented in Schedule 3. For simplicity, all materials are treated jointly (as if there were only one material input). In reality, a separate schedule would be needed for each kind of material.

Schedule 3 (in thousands)

Direct Materials Purchases Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Units to be produced (Schedule 2)	2,400	6,000	5,600	2,000	16,000
Direct materials per unit (lbs.)	× 26	× 26	× 26	× 26	× 26
Production needs (lbs.)	62,400	156,000	145,600	52,000	416,000
Desired ending inventory (lbs.)	8,000	8,000	5,000	5,000	5,000
Total needs	70,400	164,000	150,600	57,000	421,000
Less: Beginning inventory*	5,000	8,000	8,000	5,000	5,000
Direct materials to be purchased (lbs.)	65,400	156,000	142,600	52,000	416,000
Cost per pound	× $0.01	× $0.01	× $0.01	× $0.01	× $0.01
Total purchase cost	$ 654	$ 1,560	$ 1,426	$ 520	$ 4,160

*Follows the inventory policy of having 8 million pounds of materials on hand at the end of the first and second quarters and 5 million pounds on hand at the end of the third and fourth quarters.

Direct Labor Budget

The **direct labor budget** shows the total direct labor hours needed and the associated cost for the number of units in the production budget. As with direct materials, the usage of direct labor is determined by the technological relationship between labor and output. For example, if a batch of 100 concrete blocks requires 1.5 direct labor hours, then the direct labor time per block is 0.015 hour. Assuming that the labor is used

efficiently, this rate is fixed for the existing technology. The relationship will change only if a new approach to manufacturing is introduced.

Given the direct labor used per unit of output and the units to be produced from the production budget, the direct labor budget is computed as shown in Schedule 4. In the direct labor budget, the wage rate used ($8 per hour in this example) is the *average* wage paid the direct laborers associated with the production of the concrete blocks. Since it is an average, it allows for the possibility of differing wage rates paid to individual laborers.

Schedule 4 (in thousands)

Direct Labor Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Units to be produced (Schedule 2)	2,400	6,000	5,600	2,000	16,000
Direct labor time per unit (hrs.)	×0.015	×0.015	×0.015	×0.015	×0.015
Total hours needed	36	90	84	30	240
Wage per hour	× $8	× $8	× $8	× $8	× $8
Total direct labor cost	$ 288	$ 720	$ 672	$ 240	$ 1,920

Overhead Budget

The **overhead budget** shows the expected cost of all indirect manufacturing items. Unlike direct materials and direct labor, there is no readily identifiable input-output relationship for overhead items. Recall, however, that overhead consists of two types of costs: variable and fixed. Past experience can be used as a guide to determine how overhead varies with activity level. Items that vary with activity level are identified (e.g., supplies and utilities), and the amount that is expected to be spent for each item per unit of activity is estimated. Individual rates are then totaled to obtain a variable overhead rate. For ABT, assume that the variable overhead rate is $8 per direct labor hour.

Since fixed overhead does not vary with the activity level, total fixed overhead is simply the sum of all amounts budgeted. Assume that fixed overhead is budgeted at $1.28 million ($320,000 per quarter). Using this information and the budgeted direct labor hours from the direct labor budget, the overhead budget in Schedule 5 is prepared.

Schedule 5 (in thousands)

Overhead Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Budgeted direct labor hours (Schedule 4)	36	90	84	30	240
Variable overhead rate	× $8	× $8	× $8	× $8	× $8
Budgeted variable overhead	$288	$ 720	$672	$240	$1,920
Budgeted fixed overhead*	320	320	320	320	1,280
Total overhead	$608	$1,040	$992	$560	$3,200

*Includes $200,000 of depreciation in each quarter.

Ending Finished Goods Inventory Budget

The **ending finished goods inventory budget** supplies information needed for the balance sheet and also serves as an important input for the preparation of the cost of goods sold budget. To prepare this budget, the unit cost of producing each concrete block must be calculated using information from Schedules 3, 4, and 5. The unit cost of a concrete block and the cost of the planned ending inventory are shown in Schedule 6.

Schedule 6
(in thousands)

Ending Finished Goods Inventory Budget
For the Year Ended December 31, 2007

Unit cost computation:			
Direct materials (26 lbs. @ $0.01)[a]		$0.26	
Direct labor (0.015 hr. @ $8)[b]		0.12	
Overhead:			
Variable (0.015 hr. @ $8)[c]		0.12	
Fixed (0.015 hr. @ $5.33)[d]		0.08	
Total unit cost		$0.58	
	Units	*Unit Cost*	*Total*
Finished goods: Concrete blocks	100	$0.58	$58

[a]Amounts taken from Schedule 3.
[b]Amounts taken from Schedule 4.
[c]Amounts taken from Schedule 5.
[d]Budgeted fixed overhead (Schedule 5)/Budgeted direct labor hours (Schedule 4) = $1,280/240 = $5.33.

Cost of Goods Sold Budget

Assuming that the beginning finished goods inventory is valued at $55,000, the budgeted cost of goods sold schedule can be prepared using Schedules 3, 4, 5, and 6. The cost of goods sold schedule (Schedule 7) will be used as an input for the budgeted income statement.

Schedule 7
(in thousands)

Cost of Goods Sold Budget
For the Year Ended December 31, 2007

Direct materials used (Schedule 3)*	$4,160
Direct labor used (Schedule 4)	1,920
Overhead (Schedule 5)	3,200
Budgeted manufacturing costs	$9,280
Beginning finished goods	55
Goods available for sale	$9,335
Less: Ending finished goods (Schedule 6)	58
Budgeted cost of goods sold	$9,277

*Production needs × $0.01 = 416,000 × $0.01.

Marketing Expense Budget

The next budget to be prepared—the **marketing expense budget**—outlines planned expenditures for selling and distribution activities. As with overhead, marketing expenses

can be broken into fixed and variable components. Such items as sales commissions, freight, and supplies vary with sales activity. Salaries of the marketing staff, depreciation on office equipment, and advertising are fixed expenses. The marketing expense budget is illustrated in Schedule 8.

Schedule 8 (in thousands)

Marketing Expense Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Planned sales in units (Schedule 1)	2,000	6,000	6,000	2,000	16,000
Variable marketing expense per unit	×$0.05	×$0.05	×$0.05	×$0.05	×$0.05
Total variable expenses	$ 100	$ 300	$ 300	$ 100	$ 800
Fixed marketing expense:					
Salaries	$ 10	$ 10	$ 10	$ 10	$ 40
Advertising	10	10	10	10	40
Depreciation	5	5	5	5	20
Travel	3	3	3	3	12
Total fixed expenses	$ 28	$ 28	$ 28	$ 28	$ 112
Total marketing expenses	$ 128	$ 328	$ 328	$ 128	$ 912

Research and Development Expense Budget

ABT, Inc., has a small research and development group that works on product line extensions, for example, brick and paving tile. The expenditures by this group are estimated for the coming year and presented in the **research and development expense budget**. This budget is illustrated, by quarter, in Schedule 9.

Schedule 9 (in thousands)

Research and Development Expense Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Salaries	$18	$18	$18	$18	$ 72
Prototype design and development	10	10	10	10	40
Total R&D expenses	$28	$28	$28	$28	$112

Administrative Expense Budget

The final budget to be developed for operations is the administrative expense budget. Like the research and development or marketing expense budgets, the **administrative expense budget** consists of estimated expenditures for the overall organization and operation of the company. Most administrative expenses are fixed with respect to sales. They include salaries, depreciation on the headquarters building and equipment, legal and auditing fees, and so on. The administrative expense budget is shown in Schedule 10.

Schedule 10
(in thousands)

Administrative Expense Budget
For the Year Ended December 31, 2007

	Quarter				
	1	*2*	*3*	*4*	*Year*
Salaries	$25	$25	$25	$25	$100
Insurance	—	—	15	—	15
Depreciation	10	10	10	10	40
Travel	2	2	2	2	8
Total administrative expenses	$37	$37	$52	$37	$163

Budgeted Income Statement

With the completion of the administrative expense schedule, ABT has all the operating budgets needed to prepare an estimate of operating income. This budgeted income statement is shown in Schedule 11. The 10 schedules already prepared, along with the budgeted income statement, define the operating budget for ABT.

Schedule 11
(in thousands)

Budgeted Income Statement
For the Year Ended December 31, 2007

Sales (Schedule 1)	$12,000
Less: Cost of goods sold (Schedule 7)	9,277
Gross margin	$ 2,723
Less: Marketing expenses (Schedule 8)	912
Research and development expenses (Schedule 9)	112
Administrative expenses (Schedule 10)	163
Operating income	$ 1,536
Less: Interest expense (Schedule 12)	42
Income before income taxes	$ 1,494
Less: Income taxes	600
Net income	$ 894

Operating income is *not* equivalent to the net income of a firm. To yield net income, interest expense and taxes must be subtracted from operating income. The interest expense deduction is taken from the cash budget (shown in Schedule 12 on page 341). The taxes owed depend on the current tax laws.

Operating Budgets for Merchandising and Service Firms

While the budgets in the master budget described previously are widely used in manufacturing firms, the special needs of service and merchandising firms deserve mention.

In a merchandising firm, the production budget is replaced with a merchandise purchases budget. This budget identifies the quantity of each item that must be purchased for resale, the unit cost of the item, and the total purchase cost. The format is identical to that of the direct materials purchases budget in a manufacturing firm. The only other difference between the operating budgets of manufacturing and merchandising

firms is the absence of direct materials purchases and direct labor budgets in a merchandising firm.

In a for-profit service firm, the sales budget is also the production budget. The sales budget identifies each service and the quantity of it that will be sold. Since finished goods inventories are nonexistent, the services produced will be identical to the services sold. For example, the **Colorado Rockies** baseball team budgets the number of seats it expects to fill at each game and the price per ticket. Other revenues (such as television royalties and concession sales) are also budgeted.

In a not-for-profit service firm, the sales budget is replaced by a budget that identifies the levels of the various services that will be offered for the coming year and the associated funds that will be assigned to the services. The source of the funds may be tax revenues, contributions, payments by users of the services, or some combination. For example, a local **United Way**'s board of directors will budget the campaign target (dollars of contributions) for the coming year and then distribute the total funds among the qualifying agencies according to three possible levels of contribution—pessimistic, expected, and optimistic.

Both for-profit and not-for-profit service organizations lack finished goods inventory budgets. However, all the remaining operating budgets found in a manufacturing organization have counterparts in service organizations. A not-for-profit service organization's income statement is replaced by a statement of sources and uses of funds.

We saw how the firm developed a master budget and used it to plan for the coming year. Once the plan is developed, however, the budget can be used for control and decision making. For this to occur, it may be necessary to adjust the level of production or other measures of output. Flexible budgeting can be used to create plans for various levels of activity. Furthermore, the company that uses activity-based costing may find activity-based budgeting (ABB) to be more valuable than traditional budgeting. Activity-based budgets can be more accurate in planning and are more useful for control. Finally, we consider the impact of budgets on behavior.

Preparing the Financial Budget

OBJECTIVE 3

Identify the components of the financial budget, and prepare a cash budget.

The remaining budgets found in the master budget are the financial budgets. The typical financial budgets prepared are the cash budget, the budgeted balance sheet, the budgeted statement of cash flows, and the budget for capital expenditures.

While the master budget is a plan for one year, the **capital expenditures budget** is a financial plan outlining the expected acquisition of long-term assets and typically covers a number of years. Decision making in regard to capital expenditures is considered in Chapter 20. Details on the budgeted statement of cash flows are appropriately reserved for another course. Accordingly, only the cash budget and the budgeted balance sheet will be illustrated here.

The Cash Budget

Knowledge of cash flows is critical to managing a business. Often, a business is successful in producing and selling a product but fails because of timing problems associated with cash inflows and outflows. By knowing when cash deficiencies and surpluses are likely to occur, a manager can plan to borrow cash when needed and to repay the loans during periods of excess cash. Bank loan officers use a company's cash budget to document the need for cash, as well as the company's ability to repay. Because cash flow is the lifeblood of an organization, the cash budget is one of the most important budgets in the master budget.

Components of the Cash Budget

The **cash budget** is the detailed plan that shows all expected sources and uses of cash. The cash budget, illustrated in Exhibit 8-4, has the following five main sections:

EXHIBIT 8–4 The Cash Budget

Beginning cash balance
+ Cash receipts
Cash available
− Cash disbursements
− Minimum cash balance
Excess or deficiency of cash
− Repayments
+ Loans
+ Minimum cash balance
Ending cash balance

1. Total cash available
2. Cash disbursements
3. Cash excess or deficiency
4. Financing
5. Cash balance

The cash available section consists of the beginning cash balance and the expected cash receipts. Expected cash receipts include all sources of cash for the period being considered. The principal source of cash is from sales. Because a significant proportion of sales is usually on account, a major task of an organization is to determine the pattern of collection for its accounts receivable. If a company has been in business for a while, it can use past experience to create an accounts receivable aging schedule. In other words, the company can determine, on average, what percentages of its accounts receivable are paid in the months following the sales.

The cash disbursements section lists all planned cash outlays for the period except for interest payments on short-term loans (these payments appear in the financing section). All expenses not resulting in a cash outlay are excluded from the list. (Depreciation, for example, is never included in the disbursements section.)

The cash excess or deficiency section compares the cash available with the cash needed. Cash needed includes the total cash disbursements plus the minimum cash balance required by company policy. The minimum cash balance is simply the lowest amount of cash on hand that the firm finds acceptable. Consider your own checking account. You probably try to keep at least some cash in the account, perhaps because a minimum balance avoids service charges or because it allows you to make an unplanned purchase. Similarly, companies also require minimum cash balances. The amount varies from firm to firm and is determined by each company's particular needs and policies. If the total cash available is less than the cash needs, a deficiency exists. In such a case, a short-term loan will be needed. On the other hand, with a cash excess (cash available is greater than the firm's cash needs), the firm has the ability to repay loans and perhaps make some temporary investments.

The financing section of the cash budget consists of borrowings and repayments. If there is a deficiency, the financing section shows the necessary amount to be borrowed. When excess cash is available, the financing section shows planned repayments, including interest.

The final section of the cash budget is the planned ending cash balance. Remember that the minimum cash balance was subtracted to find the cash excess or deficiency.

However, the minimum cash balance is not a disbursement, so it must be added back to yield the planned ending balance.

Cash Budgeting Example

To illustrate the cash budget, let's extend the ABT example by assuming the following:

a. ABT requires a $100,000 minimum cash balance for the end of each quarter. On December 31, 2006, the cash balance was $120,000.
b. Money can be borrowed and repaid in multiples of $100,000. Interest is 12 percent per year. Interest payments are made only for the amount of the principal being repaid. All borrowing takes place at the beginning of a quarter, and all repayment takes place at the end of a quarter.
c. Half of all sales are for cash; half are on credit. Of the credit sales, 70 percent are collected in the quarter of sale, and the remaining 30 percent are collected in the following quarter. The sales for the fourth quarter of 2006 were $2 million.
d. Purchases of materials are made on account; 80 percent of purchases are paid for in the quarter of purchase. The remaining 20 percent are paid in the following quarter. The purchases for the fourth quarter of 2006 were $500,000.
e. Budgeted depreciation is $200,000 per quarter for overhead.
f. The capital budget for 2007 revealed plans to purchase additional equipment to handle increased demand at a small plant in Nevada. The cash outlay for the equipment, $600,000, will take place in the first quarter. The company plans to finance the acquisition of the equipment with operating cash, supplementing it with short-term loans as necessary.
g. Corporate income taxes are approximately $600,000 and will be paid at the end of the fourth quarter (refer to Schedule 11).

Given the preceding information, the cash budget for ABT is shown in Schedule 12 (all figures are rounded to the nearest thousand).

Much of the information needed to prepare the cash budget comes from the operating budgets. In fact, Schedules 1, 3, 4, 5, 8, 9, and 10 all supply essential input. However, these schedules by themselves do not supply all of the needed information. The collection pattern for revenues and the payment pattern for materials must be known before the cash flow for sales and purchases on credit can be found.

Exhibit 8-5, on page 342, displays the pattern of cash inflows from both cash and credit sales. Of course, the credit sales must be adjusted to show how much will be paid in cash during a particular quarter. Let's look at the cash receipts for the first quarter of 2007. Cash sales during the quarter are budgeted for $700,000 ($0.5 \times \$1{,}400{,}000$). Collections on account for the first quarter relate to credit sales made during the last quarter of the previous year and the first quarter of 2007. Quarter 4, 2006, credit sales equaled $1,000,000 ($0.5 \times \$2{,}000{,}000$), and $300,000 of those sales ($0.3 \times \$1{,}000{,}000$) remain to be collected in Quarter 1, 2007. Quarter 1, 2007, credit sales are budgeted at $700,000, and 70 percent will be collected in that quarter. Therefore, a total of $490,000 will be collected on account for credit sales made in that quarter. Similar computations are made for the remaining quarters.

Cash is disbursed for purchases of materials, payment of wages, and payment of other expenses. This information comes from Schedules 3, 4, 5, 8, 9, and 10. However, all noncash expenses, such as depreciation, need to be removed from the total amounts reported in the expense budgets. Thus, the budgeted expenses in Schedules 5, 8, and 10 were reduced by the budgeted depreciation for each quarter. Overhead expenses in Schedule 5 were reduced by depreciation of $200,000 per quarter. Marketing expenses and administrative expenses were reduced by $5,000 per quarter and $10,000 per quarter, respectively. The net amounts are what appear in the cash budget.

The cash budget shown in Schedule 12 underscores the importance of breaking down the annual budget into smaller time periods. The cash budget for the year gives the impression that sufficient operating cash will be available to finance the acquisition of the

Schedule 12 (in thousands)

Cash Budget
For the Year Ended December 31, 2007

	Quarter					
	1	*2*	*3*	*4*	*Year*	*Source*[a]
Beginning cash balance	$ 120	$ 113	$ 152	$1,334	$ 120	a
Collections:						
Cash sales	700	2,100	2,400	800	6,000	c, 1
Credit sales:						
Current quarter	490	1,470	1,680	560	4,200	c, 1
Prior quarter	300	210	630	720	1,860	c, 1
Total cash available	$1,610	$3,893	$4,862	$3,414	$12,180	
Less disbursements:						
Materials:						
Current quarter	$ 523	$1,248	$1,141	$ 416	$ 3,328	d, 3
Prior quarter	100	131	312	285	828	d, 3
Direct labor	288	720	672	240	1,920	4
Overhead	408	840	792	360	2,400	e, 5
Marketing expense	123	323	323	123	892	8
R&D expense	28	28	28	28	112	9
Administrative	27	27	42	27	123	10
Income taxes	—	—	—	600	600	g, 11
Equipment	600	—	—	—	600	f
Total disbursements	$2,097	$3,317	$3,310	$2,079	$10,803	
Minimum cash balance	100	100	100	100	100	a
Total cash needs	$2,197	$3,417	$3,410	$2,179	$10,903	
Excess (deficiency) of cash available over needs	$ (587)	$ 476	$1,452	$1,235	$ 1,277	
Financing:						
Borrowings	600	—	—	—	600	
Repayments (outflows)	—	(400)	(200)	—	(600)	b
Interest[b] (outflows)	—	(24)	(18)	—	(42)	b
Total financing	$ 600	$ (424)	$ (218)	$ —	$ (42)	
Plus: Minimum cash balance	100	100	100	100	100	
Ending cash balance[c]	$ 113	$ 152	$1,334	$1,335	$ 1,335	

[a]Letters refer to the information on page 340. Numbers refer to schedules already developed.
[b]Interest payments are 6/12 × 0.12 × $400 and 9/12 × 0.12 × $200, respectively. Since borrowings occur at the beginning of the quarter and repayments at the end of the quarter, the first principal repayment takes place after six months, and the second principal repayment takes place after nine months.
[c]Total cash available minus total disbursements plus (or minus) total financing.

new equipment. Quarterly information, however, shows the need for short-term borrowing because of both the acquisition of the new equipment and the timing of the firm's cash flows. Breaking down the annual cash budget into quarterly time periods conveys more information. Even smaller time periods often prove to be useful. Most firms prepare monthly cash budgets, and some even prepare weekly and daily cash budgets.

Another significant piece of information emerges from ABT's cash budget. By the end of the third quarter, the firm holds a considerable amount of cash ($1,334,000). ABT should consider investing this cash in short-term marketable securities rather than

EXHIBIT 8-5 Schedule of Cash Receipts for ABT, Inc.

Source	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Cash sales	$ 700,000	$2,100,000	$2,400,000	$ 800,000
Received on account from sales in:				
Quarter 4, 2006	300,000			
Quarter 1, 2007	490,000	210,000		
Quarter 2, 2007		1,470,000	630,000	
Quarter 3, 2007			1,680,000	720,000
Quarter 4, 2007				560,000
Total cash receipts	$1,490,000	$3,780,000	$4,710,000	$2,080,000

allowing it to sit idly in a bank account. The management of ABT should consider paying dividends and making long-term investments. At the very least, the excess cash should be invested in short-term marketable securities. Once plans are finalized for use of the excess cash, the cash budget should be revised to reflect those plans. Budgeting is a dynamic process. As the budget is developed, new information becomes available and better plans can be formulated.

Budgeted Balance Sheet

The budgeted balance sheet depends on information contained in the current balance sheet and in the other budgets in the master budget. The balance sheet for the beginning of the year is given in Exhibit 8-6. The budgeted balance sheet for December 31, 2007, is given in Schedule 13 on page 344. Explanations for the budgeted figures follow the schedule.

As we have described the individual budgets that make up the master budget, the interdependencies of the component budgets have become apparent. You may want to refer back to Exhibit 8-2 to review these interrelationships.

Shortcomings of the Traditional Master Budget Process

Criticisms of the master budget can be classified into several categories. The traditional master budget is:

1. Department oriented and does not recognize the interdependencies among departments
2. Static, not dynamic
3. Results, not process, oriented

Let's look more closely at each of these.

Departmental Orientation

In traditional budgeting, each department develops its own budget. These budgets are then aggregated to form the overall company budget. The focus on planning department by department results in planning forward from resources to outputs. That is, a department may start by determining what resources (i.e., labor, supplies, etc.) it currently has and then adjust those levels for the potential level of output. The activity-based budgeting approach is the opposite. ABB starts by asking what level of output is desired and then works backward to see what resources are necessary to achieve that level of output. We might ask, what difference does it make? Couldn't you achieve the

EXHIBIT 8-6 Balance Sheet for ABT, Inc.

ABT, Inc.
Balance Sheet
December 31, 2006
(in thousands)

Assets		
Current assets:		
Cash	$ 120	
Accounts receivable	300	
Materials inventory	50	
Finished goods inventory	55	
Total current assets		$ 525
Property, plant, and equipment (PP&E):		
Land	$ 2,500	
Buildings and equipment	9,000	
Accumulated depreciation	(4,500)	
Total PP&E		7,000
Total assets		$7,525
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable		$ 100
Stockholders' equity:		
Common stock, no par	$ 600	
Retained earnings	6,825	
Total stockholders' equity		7,425
Total liabilities and stockholders' equity		$7,525

same effect whether you go backward or forward? The answer, rooted in human behavior, is no. By concentrating on last year's costs and going forward, a department locks in past ways of doing things. Companies that use ABB, however, start first with the desired output and then figure out what resources are needed. That level of resources may or may not be the same as last year's level.

As a result, traditional budgeting may have managers feeling embattled. There is a sense of "every department for itself." Managers feel encouraged to use every cent of budgeted resources, whether or not those resources are needed. Indeed, if the department did not use the full level of budgeted resources, it would have a hard time making a case for increased—or even the same level of—resources in the coming year.

Static Budgets

A **static budget** is one developed for a single level of activity. Recall that the master budget is based on budgeted sales for the coming year. Once that amount is determined, production, marketing, and administrative budgets are built around it. An adjunct to the static nature of the budget is the use of last year's budget to create this year's budget. Often, the current budget is based on last year's amounts as adjusted for inflation. This approach to budgeting, called the incremental approach, has the effect of incorporating last year's inefficiencies into the current budget. Under the incremental approach, heads of budgeting units often strive to spend all of the year's budget so that no surplus exists at the end of the year. (This is particularly true for government agencies.) This action is taken to maintain the current level of the budget and enable

Schedule 13
(in thousands)

ABT, Inc.
Budgeted Balance Sheet
December 31, 2007

Assets		
Current assets:		
Cash	$ 1,335[a]	
Accounts receivable	240[b]	
Materials inventory	50[c]	
Finished goods inventory	58[d]	
Total current assets		$1,683
Property, plant, and equipment (PP&E):		
Land	$ 2,500[e]	
Buildings and equipment	9,600[f]	
Accumulated depreciation	(5,360)[g]	
Total PP&E		6,740
Total assets		$8,423
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable		$ 104[h]
Stockholders' equity:		
Common stock, no par	$ 600[i]	
Retained earnings	7,719[j]	
Total stockholders' equity		8,319
Total liabilities and stockholders' equity		$8,423

[a]Ending balance from Schedule 12.
[b]30 percent of fourth-quarter credit sales (0.30 × $800,000)—see Schedules 1 and 12.
[c]From Schedule 3 (5,000,000 lbs. × $0.01).
[d]From Schedule 6.
[e]From the December 31, 2006, balance sheet.
[f]December 31, 2006, balance ($9,000,000) plus new equipment acquisition of $600,000 (see the 2006 ending balance sheet and Schedule 12).
[g]From the December 31, 2006, balance sheet and Schedules 5, 8, and 10 ($4,500,000 + $800,000 + $20,000 + $40,000).
[h]20 percent of fourth-quarter purchases (0.20 × $520,000)—see Schedules 3 and 12.
[i]From the December 31, 2006, balance sheet.
[j]$6,825,000 + $894,000 (December 31, 2006, balance plus net income from Schedule 11).

the head of the unit to request additional funds. For example, at an Air Force base, a bomber wing was faced with the possibility of a surplus at the end of the fiscal year. The base commander, however, found ways to spend the extra money before the year ended. Missile officers, who normally drove to the missile command site, were flown to the sites in helicopters; several bags of lawn fertilizer were given away to all personnel with houses on base; and new furniture was acquired for the bachelor officer quarters. The waste and inefficiency portrayed in this example are often perpetuated and encouraged by incremental budgeting.

Zero-base budgeting is an alternative approach.[2] Unlike incremental budgeting, the prior year's budgeted level is not taken for granted. Existing operations are analyzed, and continuance of the activity or operation must be justified on the basis of its

2. Zero-base budgeting was developed by Peter Pyhrr of Texas Instruments. For a detailed discussion of the approach, see Peter Pyhrr, *Zero-Base Budgeting* (New York: Wiley, 1973).

need or usefulness to the organization. The burden of proof is on each manager to justify why any money should be spent at all. Zero-base budgeting requires extensive, in-depth analysis. Although this approach has been used successfully in industry and government (e.g., **Texas Instruments** and the state of Georgia), it is time consuming and costly. Advocates of the incremental approach argue that incremental budgeting also uses extensive, in-depth reviews but not as frequently because they are not justified on a cost-benefit basis. A reasonable compromise may be to use zero-base budgeting every three to five years in order to weed out waste and inefficiency. Especially in a period of intense competition and reengineering, zero-base budgeting can force managers to "break set" and see their units in a different perspective.

Results Orientation

Closely allied to the static nature of the master budget is a results orientation. By focusing on results instead of process, managers, in effect, disconnect the process from its output. When budgets are resource driven rather than output driven, then managers concentrate on resources and may fail to see the link between resources and output. Then, when the need for cost cutting arises, they make across-the-board cuts, slicing every department's budget by the same percentage. This has the superficial appearance of fairness—in that every department "shares the pain." Unfortunately, some departments have more fat than others, and some may be downright unneeded. Across-the-board cuts do not cut true waste and inefficiency; that is not their point.

Why, if it has all of these problems, has the traditional approach to budgeting been used for so long? It is important to realize that the master budget is not inherently flawed. In fact, it has been very useful over the decades. However, the past 30 or so years have been characterized by rapid change. In a period of change, managers may not realize that previously acceptable ways of doing things no longer work. This is the case for the master budget. For example, consider its static nature. If sales are much the same from year to year, if the production process does not change, and if the firm's product mix is fairly simple and stable, then a static budget based in large part on last year's numbers makes sense. However, this is not the situation for the vast majority of businesses today. Flexible budgets can give managers some feel for the impact of fixed and variable costs. Activity-based budgets go further, by recognizing the numerous drivers for variable costs and by starting with outputs and working backwards to resources.

OBJECTIVE 4

Define flexible budgeting, and discuss its role in planning, control, and decision making.

Flexible Budgets for Planning and Control

Budgets are useful control measures. To be used in performance evaluation, however, two major considerations must be addressed. The first is to determine how budgeted amounts should be compared with actual results. The second consideration involves the impact of budgets on human behavior.

Static Budgets versus Flexible Budgets

Master budget amounts, while vital for planning, are less useful for control. The reason for this is because the anticipated level of activity rarely equals the actual level of activity. Therefore, the costs and revenues associated with the anticipated level of activity cannot be readily compared with actual costs and revenues for a different level of activity.

Static Budgets

Master budgets are developed around a particular level of activity; they are static budgets. Because the revenues and costs prepared for static budgets depend on a level of activity that rarely equals actual activity, they are not very useful when it comes to preparing performance reports.

To illustrate, let's return to the ABT, Inc., example used in developing the master budget. Suppose that ABT provides quarterly performance reports. Recall that ABT

anticipated sales of 2 million in the first quarter and had budgeted production of 2.4 million units to support that level of sales. Now, let's suppose that sales activity was greater than expected in the first quarter; 2.6 million concrete blocks were sold instead of the 2 million budgeted in the sales budget; and, because of increased sales activity, production was increased over the planned level. Instead of producing 2.4 million units, ABT produced 3 million units. A performance report comparing the actual production costs for the first quarter with the original planned production costs is given in Exhibit 8-7.

EXHIBIT 8-7 Performance Report: Quarterly Production Costs (in thousands)

	Actual	Budgeted	Variance
Units produced	3,000	2,400	600 F[a]
Direct materials cost	$ 927.3	$ 624.0[b]	$303.3 U[c]
Direct labor cost	360.0	288.0[d]	72.0 U
Overhead:[e]			
Variable:			
Supplies	80.0	72.0	8.0 U
Indirect labor	220.0	168.0	52.0 U
Power	40.0	48.0	(8.0)F
Fixed:			
Supervision	90.0	100.0	(10.0)F
Depreciation	200.0	200.0	0.0
Rent	30.0	20.0	10.0 U
Total	$1,947.3	$1,520.0	$427.3 U

[a]F means the variance is favorable.
[b]2,400,000 units × $0.26.
[c]U means the variance is unfavorable.
[d]2,400,000 units × $0.12.
[e]Variable overhead equals 2,400,000 units times the unit amounts from Schedule 6. Budgeted fixed overhead per quarter is given in Schedule 5.

According to the report, unfavorable variances occur for direct materials, direct labor, supplies, indirect labor, and rent. However, there is something fundamentally wrong with the report. Actual costs for production of *3 million concrete blocks* are being compared with planned costs for production of *2.4 million*. Because direct materials, direct labor, and variable overhead are variable costs, we would expect them to be greater at a higher activity level. Thus, even if cost control were perfect for the production of 3 million units, unfavorable variances would be produced for all variable costs.

To create a meaningful performance report, actual costs and expected costs must be compared at the *same* level of activity. Since actual output often differs from planned output, some method is needed to compute what the costs should have been for the actual output level.

Flexible Budgets

The budget that (1) provides expected costs for a range of activity or (2) provides budgeted costs for the actual level of activity is called a **flexible budget**. Flexible budgeting can be used in planning by showing what costs will be at various levels of activity. When used this way, managers can deal with uncertainty by examining the expected financial results for a number of plausible scenarios. Spreadsheets are particularly useful in developing this type of flexible budget.

The flexible budget can be used after the fact, for control, to compute what costs should have been for the actual level of activity. Once expected costs are known for the actual level of activity, a performance report that compares those expected costs to actual costs can be prepared. When used for control, flexible budgets help managers compare "apples to apples" in assessing performance.

To illustrate the power of flexible budgeting, let's prepare a budget for ABT for three different activity levels (the number of concrete blocks produced). Since the flexible budget gives the expected cost at various levels of activity, we must know the cost behavior patterns of each budget item. Recall that the cost behavior pattern can be expressed as the sum of the fixed cost and a variable rate multiplied by activity level. The variable rates for direct materials ($0.26 per unit), direct labor ($0.12 per unit), supplies ($0.03), indirect labor ($0.07), and power ($0.02) are given in Schedule 6. Finally, we know from Schedule 5 that fixed overhead is budgeted at $320,000 per quarter. Exhibit 8-8 displays a flexible budget for production costs when 2.4, 3, and 3.6 million concrete blocks are produced.

EXHIBIT 8-8 Flexible Production Budget (in thousands)

	Variable Cost per Unit	Range of Production (units) 2,400	3,000	3,600
Production costs:				
Variable:				
Direct materials	$0.26	$ 624	$ 780	$ 936
Direct labor	0.12	288	360	432
Variable overhead:				
Supplies	0.03	72	90	108
Indirect labor	0.07	168	210	252
Power	0.02	48	60	72
Total variable costs	$0.50	$1,200	$1,500	$1,800
Fixed overhead:				
Supervision		$ 100	$ 100	$ 100
Depreciation		200	200	200
Rent		20	20	20
Total fixed costs		$ 320	$ 320	$ 320
Total production costs		$1,520	$1,820	$2,120

Notice in Exhibit 8-8 that total budgeted production costs increase as the activity level increases. Budgeted costs change because of variable costs. Because of this, a flexible budget is sometimes referred to as a **variable budget**.

Exhibit 8-8 reveals what the costs should have been for the actual level of activity (3 million blocks). A revised performance report that compares actual and budgeted costs for the actual level of activity is given in Exhibit 8-9 on the following page.

The revised performance report in Exhibit 8-9 paints a much different picture than the one in Exhibit 8-7. By comparing budgeted costs for the actual level of activity with actual costs for the same level, **flexible budget variances** are generated. Managers can locate possible problem areas by examining these variances. According to the ABT flexible budget variances, expenditures for direct materials are excessive. (The other unfavorable variances seem relatively small.) With this knowledge, management can search for the causes of the excess expenditures and prevent the same problems from occurring in the future.

EXHIBIT 8-9 Actual versus Flexible Performance Report: Quarterly Production Costs (in thousands)

	Actual	Budgeted*	Variance
Units produced	3,000	3,000	—
Production costs:			
Direct materials	$ 927.3	$ 780.0	$147.3 U
Direct labor	360.0	360.0	0.0
Variable overhead:			
Supplies	80.0	90.0	(10.0) F
Indirect labor	220.0	210.0	10.0 U
Power	40.0	60.0	(20.0) F
Total variable costs	$1,627.3	$1,500.0	$127.3 U
Fixed overhead:			
Supervision	$ 90.0	$ 100.0	$ (10.0) F
Depreciation	200.0	200.0	0.0
Rent	30.0	20.0	10.0 U
Total fixed costs	$ 320.0	$ 320.0	$ 0.0
Total production costs	$1,947.3	$1,820.0	$127.3 U

*From Exhibit 8-8.

Budgets can be used to examine the efficiency and effectiveness of a company. **Efficiency** is achieved when the business process is performed in the best possible way, with little or no waste. The flexible budget provides an assessment of the efficiency of a manager. This is so because the flexible budget compares the actual costs for a given level of output with the budgeted costs for the same level. **Effectiveness** means that a manager achieves or exceeds the goals described by the static budget. Thus, efficiency examines how well the work is done, and effectiveness examines whether or not the right work is being accomplished. Any differences between the flexible budget and the static budget are attributable to differences in volume. They are called *volume variances.* A 5-column performance report that reveals both the flexible budget variances and the volume variances can be used. Exhibit 8-10 provides an example of this report using the ABT data.

As the report in Exhibit 8-10 reveals, production volume was 600,000 units greater than the original budgeted amount. Thus, the manager exceeded the output goal. This volume variance is labeled *favorable* because it exceeds the original production goal. (Recall that the *reason* for the extra production was because the demand for the product was greater than expected. Thus, the increase in production over the original amount was truly favorable.) On the other hand, the budgeted variable costs are greater than expected because of the increased production. This difference is labeled unfavorable because the costs are greater than expected; however, the increase in costs is because of an increase in production. Thus, it is totally reasonable. For this particular example, the effectiveness of the manager is not in question; thus, the main issue is how well the manager controlled costs as revealed by the flexible budget variances.

Flexible budgeting may also be accomplished using data from an activity-based costing system. In this case, a variety of drivers would be used rather than the single unit-based driver in the previous example. We can think of flexible budgeting using ABC costs and drivers as a simplified sort of activity-based budgeting. The ABC flexible budget is a more accurate tool for planning and does give an indication of more costly ver-

EXHIBIT 8-10 Managerial Performance Report: Quarterly Production (in thousands)

	Actual Results (1)	Flexible Budget (2)	Flexible Budget Variances (3) = (1) − (2)	Static Budget (4)	Volume Variances (5) = (2) − (4)
Units produced	3,000	3,000	—	2,400	600 F
Production costs:					
Direct materials	$ 927.3	$ 780.0	$147.3 U	$ 624.0	$156.0 U
Direct labor	360.0	360.0	0.0	288.0	72.0 U
Supplies	80.0	90.0	(10.0) F	72.0	18.0 U
Indirect labor	220.0	210.0	10.0 U	168.0	42.0 U
Power	40.0	60.0	(20.0) F	48.0	12.0 U
Supervision	90.0	100.0	(10.0) F	100.0	0.0
Depreciation	200.0	200.0	0.0	200.0	0.0
Rent	30.0	20.0	10.0 U	20.0	0.0
Total costs	$1,947.3	$1,820.0	$127.3 U	$1,520.0	$300.0 U

sus less costly activities. Thus, an ABC flexible budget can support continuous improvement and process management.

Let's use the experience of a factory in costing overhead to see how an ABC flexible budget is developed. Suppose the factory has identified five overhead activities: maintenance, machining, inspection, setups, and purchasing. Then, an appropriate driver must be identified for each of the activities, and cost behavior concepts can be used to develop cost formulas. This has been done for the factory as follows:

Activity	*Cost Formula*
Maintenance	$20,000 + $5.50 per machine hour
Machining	$15,000 + $2 per machine hour
Inspection	$80,000 + $2,100 per batch
Setups	$1,800 per batch
Purchasing	$211,000 + $1 per purchase order

In principle, the fixed cost component for each activity should correspond to committed resources, and the variable–cost component for each activity should correspond to flexible resources (those acquired as needed). This is how an ABC flexible budget is developed. This multiple formula approach allows managers to predict more accurately what costs ought to be for different levels of activity, as measured by driver usage. These costs can then be compared with the actual costs to assess budgetary performance. Exhibit 8-11, on the following page, illustrates the activity flexible budget at two levels of activity. The first one supports output requiring 8,000 machine hours, 25 batches, and 15,000 purchase orders. The second one supports output requiring 16,000 machine hours, 30 batches, and 25,000 purchase orders.

In Exhibit 8-11, we have an ABC flexible budget for two levels of activity. This is a flexible budget according to our first definition of flexible budgeting and can be used for planning. If we want to use the ABC flexible budget for control, we will need to know the actual cost of each activity and compare that to the flexible budget amount for actual activity. Let's assume that the first activity level for each driver in Exhibit 8-11

EXHIBIT 8-11 Activity Flexible Budget

	Driver: Machine Hours			
	Formula		Level of Activity	
	Fixed	Variable	8,000	16,000
Maintenance	$ 20,000	$ 5.50	$ 64,000	$108,000
Machining	15,000	2.00	31,000	47,000
Subtotal	$ 35,000	$ 7.50	$ 95,000	$155,000
	Driver: Number of Batches			
	Fixed	Variable	25	30
Inspection	$ 80,000	$2,100	$132,500	$143,000
Setups	0	1,800	45,000	54,000
Subtotal	$ 80,000	$3,900	$177,500	$197,000
	Driver: Number of Orders			
	Fixed	Variable	15,000	25,000
Purchasing	$211,000	$ 1	$226,000	$236,000

corresponds to the actual activity usage levels. Then, Exhibit 8-12 compares these budgeted costs for actual activity usage with the actual costs. We can see that variances exist for all activities, with an overall variance of $22,500. As is always true of variance analysis, we cannot tell why variances occur until we investigate. Managers may want to determine which of the variances appear out of line and then investigate. In addition, the ABC flexible budget spotlights the most costly activities, and this may trigger an investigation of purchasing, for example, even if its variance is not considered significant.

EXHIBIT 8-12 Activity-Based Performance Report

	Actual Costs	Budgeted Costs	Budget Variance
Maintenance	$ 55,000	$ 64,000	$ 9,000 F
Machining	29,000	31,000	2,000 F
Inspection	125,500	132,500	7,000 F
Setups	46,500	45,000	1,500 U
Purchases	220,000	226,000	6,000 F
Total	$476,000	$498,500	$25,500 F

We can see that flexible budgeting is a powerful tool for planning and control. The ability to determine costs at varying levels of activity helps managers to overcome the drawback of the static nature of the master budget. Activity-based budgeting adds still more power to the manager's budgeting toolkit.

OBJECTIVE 5

Define activity-based budgeting, and discuss its role in planning, control, and decision making.

Activity-Based Budgets

We just saw that flexible budgeting can solve some of the problems that arise from using static budgets for performance evaluation. Flexible budgeting allows the firm to create a budget for varying levels of activity. However, just as the static master budget was useful for firms that faced relatively constant sales and production from year to year, the flexible budget is useful for a particular set of circumstances as well. The ABT situation is tailor made for flexible budgeting. The output is homogeneous, and the production process is fairly simple. Basing variable costs on a volume-based driver works well. However, many firms have found that product diversity means that the richer set of drivers of activity-based costing are necessary to describe their cost structure. These firms will find that activity-based budgeting (ABB) is more useful for their needs.[3]

The activity-based budget begins with output and then determines the resources necessary to create that output. Ideally, the organization translates its vision into a strategy with definable objectives in order to create value. Ways of creating value include growing market share, improving sales rates, reducing expenses, increasing profit margins, increasing productivity, and reducing the cost of capital. We can see how clearly ABB is related to performance evaluation and, in particular, to economic value added (as discussed in Chapter 10).

We can look at a department's budget from three perspectives: a traditional functional-based approach, a flexible budgeting approach, and an activity-based approach. Traditional budgeting relies on the use of functional-based line items, such as salaries, supplies, depreciation on equipment, and so on. The flexible budget uses knowledge of cost behavior to split the functional-based line items into fixed and variable components. The activity-based budget works backward from activities and their drivers to the underlying costs.

Let's use the new secure-care department of a large regional public accounting firm to illustrate the differences among traditional, flexible, and activity-based budgeting. First, let's review the history of the secure-care department. A couple of years ago, Brad Covington, one of the firm's younger partners, persuaded his other partners to put an eldercare program into effect. Eldercare is a multifaceted program of personal financial and assurance services. The typical client is the elderly parent(s) of a grown child who lives outside the parents' city. The parents may need help paying monthly bills, balancing their checking account, and finding and paying for in-home health and personal care. Brad felt that there was a need for eldercare services in the metropolitan area and that his accounting firm was ideally suited to provide these services. Not only were the financial services a natural for a public accounting firm, but the high confidence the public placed in accountants made it likely that clients would feel comfortable relying on their expertise in finding appropriate caretakers. The main problem, in Brad's mind, was the term "eldercare." After some discussion among firm members, the name secure-care was chosen. The secure-care department was established two years ago.

During the 2-year period, Brad developed a client base of 60. A variety of services were offered. For all clients, all business mail was rerouted to the accounting firm. The clients' checking, savings, and money market accounts were kept up to date and reconciled each month by the firm. All bills were paid from the appropriate accounts. In addition, personal and household services were contracted out. The secure-care department advertised for, interviewed, and investigated the backgrounds of all individuals hired to provide personal and household services to clients. Monthly personal visits were made to each client to ensure that their needs were being met. Finally, a monthly

3. Much of this section relies on ideas expressed in James A. Brimson and John Antos, *Driving Value Using Activity-Based Budgeting* (New York, NY: John Wiley & Sons, 1999). This book is a thorough approach to the subject.

report on the financial and personal status of each client was prepared and delivered to the clients and any concerned adult children.

The secure-care department consisted of a receptionist, two administrative assistants, and Brad—the managing partner for the department. Because there was insufficient room in the main offices of the accounting firm, Brad rented office space across the street. All investigative services (for background checks) were contracted out to a local private investigator with extensive experience in this area.

Exhibit 8-13 depicts the traditional budget for the coming year for the secure-care department. Notice that the expense categories are listed along with a dollar amount for each one. How would a typical company using functional budgeting arrive at these figures? It would be a safe bet to assume that they would be based to a large extent on the level of those same expenses for the previous year. Maybe there would be some adjustment of certain figures (e.g., if salaries were expected to rise by 3 percent due to anticipated raises).

EXHIBIT 8-13 Traditional Budget for the Secure-Care Department

Expense Category		Budgeted Amounts
Salaries and benefits:		
Brad	$110,000	
Administrative assistants	70,000	
Receptionist	30,000	$210,000
Rent		36,000
Supplies		10,000
PCs and Internet		4,000
Travel		3,000
Investigative services		6,000
Telephone		4,800
Total		$273,800

Now, suppose that Brad thinks the costs of the secure-care department might vary according to the number of clients. Cost behavior concepts can be used to break the expense categories into fixed and variable components. Assume that supplies are strictly variable, at $166.67 per client. Telephone is a mixed cost, with a fixed component of $1,200 and a variable rate of $60 per client. The remaining expenses appear to be predominantly fixed. Then, a flexible budget for the following year's 60 estimated clients would appear as the one shown in Exhibit 8-14. Notice that the total amount is still $273,800. The flexible budget shown here does not look like a great step forward. Its power lies in its ability to show changes in total cost as activity level changes. For example, the budget could be extended to show total costs at 50 and 70 clients as well. The key requirement is that the product is much the same from unit to unit. In the case of the secure-care department, that would mean the needs of each client are very similar.

Brad was not satisfied with the results of the flexible budget. He knew that many of the expense categories were variable but that they did not necessarily vary with the number of clients. For example, one important and time-consuming activity was paying monthly bills. However, the number of bills varied greatly from client to client. Similarly, some clients had just a couple of checking and savings accounts while others had five or six checking, money market, and savings accounts. Each of these had to be

EXHIBIT 8-14 Flexible Budget for the Secure-Care Department

Expense Category		Budgeted Amounts for 60 Clients
Variable expenses:		
Supplies	$ 10,000	
Telephone	3,600	
Total variable expenses		$ 13,600
Fixed expenses:		
Salaries and benefits	$210,000	
Rent	36,000	
PCs and Internet	4,000	
Travel	3,000	
Investigative services	6,000	
Telephone	1,200	
Total fixed expenses		260,200
Total expenses		$273,800

monitored and reconciled at the end of the month. In summary, there was considerable diversity among the clients. Therefore, Brad decided to build an activity-based budget.

To build an activity-based budget for the secure-care department, four steps are needed: (1) the output of the department must be determined; (2) the activities needed to deliver the output, along with their related drivers, must be identified; (3) the demand for each activity must be estimated; and (4) the cost of resources required to produce the relevant activities must be determined. It is critically important to see that ABB is based on expected output. The traditional budget often plans forward from last year's experience, while the ABB plans backward from next year's output. The differences between the two approaches are more than semantic. While it may appear that the same results would hold in both cases, in practice, that is not so. In addition, the ABB approach, using resources and activities to create output, gives the manager much more information as well as ability to consider eliminating nonvalue-added activities.

The following information about the secure-care department was developed:

- All clients received varying levels of the department's activities.
- The first activity is "processing mail." Brad decided that number of clients was a reasonable driver for this activity. All clients had mail, and the amount varied from week to week. The receptionist opened all the mail and sorted it into folders by client. It took approximately two hours a day to perform this task.
- The second activity is "paying bills." There were approximately 1,000 bills per month, or 12,000 per year. The number of bills varied widely from client to client. The administrative assistants performed this activity, using computer software to enter and pay bills. Based on the amount of time this took and the cost of supplies, software, and postage, the average cost of paying one bill was $1.75.
- The third activity is "reconciling accounts." The administrative assistants performed this activity, and it took about 30 minutes per account each month. There were 350 accounts. This averaged out to one administrative assistant working full time on reconciling accounts. Related supplies and the use of a computer and software added another $4,900 to the total.
- The firm advertised for and interviewed caregivers for their clients as needed. The driver for this activity is number of new hires. The yearly cost, including newspaper

advertising and the time of the administrative assistants, totaled $7,200 per year. On average, there were estimated to be 60 new hires in a year.

- A private investigator was retained to perform thorough background checks of prospective caregivers. Each background check cost $25, and an average of four prospective caregivers was checked for every successful new hire.
- Every month, the administrative assistants made personal visits to each client. The number of clients was a good driver for this activity, and the total cost was about $650 per client, per year.
- Each month, Brad or one of the administrative assistants prepared a monthly report for every client. The report detailed the financial activity and included the notes taken from the home visits. Prospective issues and problems were raised. These reports were sent to the clients as well as to interested adult children. The cost of time, supplies, and postage averaged $175 per client, per year.
- The final activity is managing the department and signing up new clients. Brad is responsible for the bulk of this activity. The activity does not have a driver, but instead, consists of the remaining costs of the department.

The secure-care department's activity-based budget is shown in Exhibit 8-15. Notice that the department has identified eight activities and four drivers. This level of detail is much richer than that for the flexible budget presented in Exhibit 8-14, where there was only one driver, the number of clients. With an activity-based budget, we get a feel for the diversity among the clients. Some have more accounts, and some more bills to pay. In other words, "clients" are not all the same. There is considerable product diversity, and this diversity is not captured in either the traditional or the simple flexible budget.

EXHIBIT 8-15 Activity-Based Budget for the Secure-Care Department

Activity Description	Activity Driver	Cost per Unit of Driver	Amount of Driver	Activity Cost
Processing mail	Number of clients	$125.00	60	$ 7,500
Paying bills	Number of bills	1.75	12,000	21,000
Reconciling accounts	Number of accounts	114.00	350	39,900
Advertising/interviewing	Number of new hires	120.00	60	7,200
Investigating	Number of new hires	100.00	60	6,000
Visiting homes	Number of clients	650.00	60	39,000
Writing reports	Number of clients	175.00	60	10,500
Managing department				142,700
Total				$273,800

The traditional, flexible, and activity-based budgets for the secure-care department all total $273,800. But notice the richness of detail in the activity-based budget. Here, we can see the relationship between output and resource usage. The manager's attention is also focused on the most costly activities: paying bills, reconciling accounts, and visiting homes. Brad may want to use this information in pricing the various parts of the secure-care service.

Earlier in this chapter, we noted that both the traditional and flexible budgeting approaches worked well for particular sets of circumstances. Recall that a key feature is that the environment of the company remains stable. When that is the case, one year is much like the next. The technology is the same, and there is little product diversity. A single volume-based driver works well to account for any changes. However, many companies now face an environment that is changing rapidly in many ways. These companies are ill served by budgets that are founded on the notion that everything remains

COST MANAGEMENT **Technology in Action**

The series of layoffs that occurred in the 2001 recession differed from those in the recession of 1990–1991 in an important way. In the earlier recession, cost cutting meant downsizing, and the resultant layoffs relied on across-the-board cuts. In July 2000, **Tenneco Automotive Inc.**, a manufacturer of mufflers and shock absorbers, started to adjust to the economic downturn by instituting a 4-for-1 attrition program. In other words, for every four employees who left, only one would be replaced. The remaining employees were expected to pick up the slack. Unfortunately, not all units had slack. Some had been operating at capacity. For example, many engineers felt stretched and unable to fully compensate for those engineers who had left. During the time period, the company's stock price tumbled 58 percent.

By early 2001, Tenneco changed its focus. The company still wanted to trim costs. However, it put the spotlight on underperforming units and employees. This approach is the one dictated by activity-based budgeting. Resources necessary to support the production of products and services are maintained; non-value-added activities and their resources are trimmed. ABB allows managers to better understand the relationships among resources, costs, and output. Instead of relying on a single driver, labor hours, managers using ABB know that a variety of drivers must be assessed to correctly budget for changes in product mix and volume.

Source: Jon E. Hilsenrath, "Experts Say Corporate Layoffs Often Hurt More than Help," *The Wall Street Journal* (February 21, 2001): A2.

the same. Companies in a changing environment, whether it relates to changing technology, competition, or customer base, need a much more flexible technique for planning and control. The activity-based budget can be extended to include feature costing. This provides an even more powerful tool for planning and control.

Feature costing assigns costs to activities and products or services based on the product's or service's features.[4] In the secure-care department, we could see that one client was not necessarily the same as another. In other words, different clients had different features that required the department to use different sets of activities to handle them. A client with only one checking account and a few repetitive bills took little time. Other clients had numerous accounts and bills. Some clients may be difficult to get along with, leading to rapid turnover of their caregivers and necessitating additional interviewing and background investigation. If the company wanted to extend the ABB process, it could add feature costing. That is, it could determine what features of clients differentiate them into groups that require different sets of activities. We can easily imagine that the company might delve further into the various features, asking what leads (root cause analysis) to the different features and what could be done to remove the more costly features. For example, perhaps the monthly reports could be posted, using appropriate security, on the Internet. The reports could be updated relatively easily, and postage and printing costs could be minimized.

OBJECTIVE 6

Identify and discuss the key features that a budgetary system should have to encourage managers to engage in goal-congruent behavior.

The Behavioral Dimension of Budgeting

Budgets are often used to judge the actual performance of managers. Bonuses, salary increases, and promotions are all affected by a manager's ability to achieve or beat budgeted goals. Since a manager's financial status and career can be affected, budgets can have a significant behavioral effect. Whether that effect is positive or negative depends to a large extent on how budgets are used.

Positive behavior occurs when the goals of individual managers are aligned with the goals of the organization and the manager has the drive to achieve them. The alignment of managerial and organizational goals is often referred to as **goal congruence**. In addition to goal congruence, however, a manager must also exert effort to achieve the goals of the organization.

4. Ibid., 87.

If the budget is improperly administered, the reaction of subordinate managers may be negative. This negative behavior can be manifested in numerous ways, but the overall effect is subversion of the organization's goals. **Dysfunctional behavior** involves individual behavior that is in basic conflict with the goals of the organization.

A theme underlying the behavioral dimension of budgeting is ethics. The importance of budgets in performance evaluation and managers' pay raises and promotions leads to the possibility of unethical action. All of the dysfunctional actions regarding budgets that a manager may choose to take can have an unethical aspect. For example, a manager who deliberately underestimates sales and overestimates costs for the purpose of making the budget easier to achieve is engaging in unethical behavior. It is the responsibility of the company to create budgetary incentives that do not encourage unethical behavior. It is the responsibility of the manager to avoid engaging in such behavior.

Characteristics of a Good Budgetary System

An ideal budgetary system is one that achieves complete goal congruence and simultaneously creates a drive in managers to achieve the organization's goals in an ethical manner. While an ideal budgetary system probably does not exist, research and practice have identified some key features that promote a reasonable degree of positive behavior. These features include frequent feedback on performance, monetary and nonmonetary incentives, participation, realistic standards, controllability of costs, and multiple measures of performance.

Frequent Feedback on Performance

Managers need to know how they are doing as the year unfolds. Providing them with frequent, timely performance reports allows them to know how successful their efforts have been and gives them time to take corrective actions and change plans as necessary. Frequent performance reports can reinforce positive behavior and give managers the time and opportunity to adapt to changing conditions.

The use of flexible budgets allows management to see if actual costs and revenues are in accord with budgeted amounts. Selective investigation of significant variances allows managers to focus only on areas that need attention. This process is called *management by exception*.

Monetary and Nonmonetary Incentives

A sound budgetary system encourages goal-congruent behavior. **Incentives** are the means that are used to encourage managers to work toward achieving the organization's goals. Incentives can be either negative or positive. Negative incentives use fear of punishment to motivate; positive incentives use rewards. What incentives should be tied to an organization's budgetary system?

The most successful companies view people as their most important asset. Their budgets reflect their underlying philosophy by including significant expenditures on recruiting and career development. **Intel**, for example, spends 6 percent of its total payroll on an in-house university. In addition, it rewards performance with monetary incentives. At **Federal Express** and Intel, all employees qualify for variable pay, which may include stock ownership, options, and bonuses.[5]

Of course, negative incentives can be used as well. The most serious negative incentive is the threat of dismissal. Jack Welch, former CEO of **GE**, notes that "making your numbers but not demonstrating our values is grounds for dismissal."[6] Interestingly, the Welch quotation points out that budgets are important for control (making your numbers), but that budget numbers are not the most important factor in a successful company.

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5. Anne Fisher, "The World's Most Admired Companies," *Fortune* (October 27, 1997): 220–240.
6. Ibid., 232.

Participative Budgeting

Rather than imposing budgets on subordinate managers, **participative budgeting** allows subordinate managers considerable say in how the budgets are established. Typically, overall objectives are communicated to the manager, who helps develop a budget that will accomplish these objectives. In participative budgeting, the emphasis is on the accomplishment of the broad objectives, not on individual budget items.

The budget process described earlier for ABT uses participative budgeting. The company provides the sales forecast to its profit centers and requests a budget that shows planned expenditures and expected profits given that specific level of sales. The managers of the profit centers are fully responsible for preparing the budgets by which they will later be evaluated. Although the budgets must be approved by the president, disapproval is uncommon; the budgets are usually in line with the sales forecast and last year's operating results adjusted for expected changes in revenues and costs.

Participative budgeting communicates a sense of responsibility to subordinate managers and fosters creativity. Since the subordinate manager creates the budget, it is more likely that the budget's goals will become the manager's personal goals, resulting in greater goal congruence. Advocates of participative budgeting claim that the increased responsibility and challenge inherent in the process provide nonmonetary incentives that lead to a higher level of performance. They argue that individuals involved in setting their own standards will work harder to achieve them. In addition to the behavioral benefits, participative budgeting has the advantage of involving individuals whose knowledge of local conditions may enhance the entire planning process.

Participative budgeting has three potential problems that should be mentioned:

1. Setting standards that are either too high or too low
2. Building slack into the budget (often referred to as *padding the budget*)
3. Pseudoparticipation

Some managers may tend to set the budget either too loose or too tight. Since budgeted goals tend to become the manager's goals when participation is allowed, making this mistake in setting the budget can result in decreased performance levels. If goals are too easily achieved, a manager may lose interest, and performance may actually drop. Challenge is important to aggressive and creative individuals. Similarly, setting the budget too tight ensures failure to achieve the standards and frustrates the manager. This frustration, too, can lead to poor performance. The trick is to get managers in a participative organization to set high but achievable goals.

The second problem with participative budgeting is the opportunity for managers to build slack into the budget. **Budgetary slack** exists when a manager deliberately underestimates revenues or overestimates costs. Either approach increases the likelihood that the manager will achieve the budget and consequently reduces the risk that the manager faces. Padding the budget also unnecessarily ties up resources that might be used more productively elsewhere.

Slack in budgets can be virtually eliminated if top management dictates lower expense budgets. However, the benefits to be gained from participation may far exceed the costs associated with padding the budget. Even so, top management should carefully review budgets proposed by subordinate managers and provide input, where needed, in order to decrease the effects of building slack into the budget.

The third problem with participation occurs when top management assumes total control of the budgeting process, seeking only superficial participation from lower-level managers. This practice is termed **pseudoparticipation**. Top management is simply obtaining formal acceptance of the budget from subordinate managers, not seeking real input. Accordingly, none of the behavioral benefits of participation will be realized.

Realistic Standards

Budgeted objectives are used to gauge performance; accordingly, they should be based on realistic conditions and expectations. Budgets should reflect operating realities such

as actual levels of activity, seasonal variations, efficiencies, and general economic trends. Flexible budgets, for example, are used to ensure that the budgeted costs provide standards that are compatible with the actual activity level. Another factor to consider is that of seasonality. Some businesses receive revenues and incur costs uniformly throughout the year; thus, spreading the annual revenues and costs evenly over quarters and months is reasonable for interim performance reports. However, for businesses with seasonal variations, this practice would result in distorted performance reports.

Factors such as efficiency and general economic conditions are also important. Occasionally, top management makes arbitrary cuts in prior-year budgets with the belief that the cuts will reduce fat or inefficiencies that allegedly exist. In reality, some units may be operating efficiently and others inefficiently. An across-the-board cut without any formal evaluation may impair the ability of some units to carry out their missions. General economic conditions also need to be considered. Budgeting for a significant increase in sales when a recession is projected is not only foolish but potentially harmful. For example, for years, **Kodak** confidently predicted that their film business would grow by 8 percent when the industry was growing by only 4 percent.[7] The predicted growth did not occur. This type of unfounded optimism did nothing to improve sales and only hurt stock analysts' perception of the company.

Controllability of Costs

Conventional thought maintains that managers should be held accountable only for costs over which they have control. **Controllable costs** are costs whose level a manager can influence. In this view, a manager who has no responsibility for a cost should not be held accountable for it. For example, divisional managers have no power to authorize such corporate-level costs as research and development and salaries of top managers. Therefore, they should not be held accountable for the incurrence of those costs.

Many firms, however, do put noncontrollable costs in the budgets of subordinate managers. Making managers aware of the need to cover all costs is one rationale for this practice. If noncontrollable costs are included in a budget, they should be separated from controllable costs and labeled as *noncontrollable*.

Multiple Measures of Performance

Often, organizations make the mistake of using budgets as their only measure of managerial performance. Overemphasis on this measure can lead to a form of dysfunctional behavior called *milking the firm* or *myopia*. **Myopic behavior** occurs when a manager takes actions that improve budgetary performance in the short run but bring long-run harm to the firm.

There are numerous examples of myopic behavior. To meet budgeted cost objectives or profits, managers can reduce expenditures for preventive maintenance, advertising, and new product development. Managers can also fail to promote deserving employees to keep the cost of labor low and can choose to use lower-quality materials to reduce the cost of materials. In the short run, these actions will lead to improved budgetary performance, but in the long run, productivity will fall, market share will decline, and capable employees will leave for more attractive opportunities.

Managers who engage in this kind of behavior often have a short tenure. In these cases, managers spend three to five years before being promoted or moving to a new area of responsibility. Their successors are the ones who pay the price for their myopic behavior. The best way to prevent myopic behavior is to measure the performance of managers on several dimensions, including some long-run attributes. Productivity, quality, and personnel development are examples of other areas of performance that could be evaluated. Financial measures of performance are important, but overemphasis on them can be counterproductive.

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7. Peter Nulty, "Digital Imaging Had Better Boom Before Kodak Film Busts," *Fortune* (May 1, 1995): 80–83.

SUMMARY

Budgeting is the creation of a plan of action expressed in financial terms. Budgeting plays a key role in planning, controlling, and decision making. Budgets also serve to improve communication and coordination, a role that becomes increasingly important as organizations grow in size.

The master budget, the comprehensive financial plan of an organization, is made up of the operating and financial budgets. The operating budget is the budgeted income statement and all supporting schedules. These schedules include the sales budget, the production budget, the direct materials purchases budget, the direct labor budget, the overhead budget, the ending finished goods inventory budget, the cost of goods sold budget, the marketing expense budget, the research and development expense budget, and the administrative expense budget. The budgeted income statement outlines the net income to be realized if budgeted plans come to fruition.

The financial budget includes the cash budget, the capital expenditures budget, and the budgeted balance sheet. The cash budget is simply the beginning balance in the cash account, plus anticipated receipts, minus anticipated disbursements, plus or minus any necessary borrowing. The budgeted (or pro forma) balance sheet gives the anticipated ending balances of the asset, liability, and equity accounts if budgeted plans hold.

Traditional budgeting has problems that make it less useful in the current business environment. In particular, the traditional master budget (1) does not recognize the interdependencies among departments, (2) is static, and (3) is results, not process, oriented. Flexible budgets, which use cost behavior concepts to split costs into fixed and variable components, can be used to address the problem of static budgets. Activity-based budgeting, however, is needed to recognize the interdependencies among departments and to focus on business processes.

The success of a budgetary system depends on how seriously human factors are considered. To discourage dysfunctional behavior, organizations should avoid overemphasizing budgets as a control mechanism. Other areas of performance should be evaluated in addition to budget adherence. Budgets can be improved as performance measures by the use of participative budgeting and other nonmonetary incentives, by providing frequent feedback on performance, by the use of flexible budgeting, by ensuring that the budgetary objectives reflect reality, and by holding managers accountable for only controllable costs.

REVIEW PROBLEMS AND SOLUTIONS

1 Sales, Production, Direct Materials, and Direct Labor Budgets

Young Products produces coat racks. The projected sales for the first quarter of the coming year and the beginning and ending inventory data are as follows:

Sales	100,000 units
Unit price	$15
Beginning inventory	8,000 units
Targeted ending inventory	12,000 units

The coat racks are molded and then painted. Each rack requires four pounds of metal, which cost $2.50 per pound. The beginning inventory of materials is 4,000 pounds.

Young Products wants to have 6,000 pounds of metal in inventory at the end of the quarter. Each rack produced requires 30 minutes of direct labor time, which is billed at $9 per hour.

Required:

1. Prepare a sales budget for the first quarter.
2. Prepare a production budget for the first quarter.
3. Prepare a direct materials purchases budget for the first quarter.
4. Prepare a direct labor budget for the first quarter.

SOLUTION

1.

Young Products
Sales Budget
For the First Quarter

Units	100,000
Unit selling price	× $15
Sales	$1,500,000

2.

Young Products
Production Budget
For the First Quarter

Sales (in units)	100,000
Desired ending inventory	12,000
Total needs	112,000
Less: Beginning inventory	8,000
Units to be produced	104,000

3.

Young Products
Direct Materials Purchases Budget
For the First Quarter

Units to be produced	104,000
Direct materials per unit (lbs.)	× 4
Production needs (lbs.)	416,000
Desired ending inventory (lbs.)	6,000
Total needs (lbs.)	422,000
Less: Beginning inventory (lbs.)	4,000
Materials to be purchased (lbs.)	418,000
Cost per pound	× $2.50
Total purchase cost	$1,045,000

4.

Young Products
Direct Labor Budget
For the First Quarter

Units to be produced	104,000
Labor time per unit	× 0.5
Total hours needed	52,000
Wage per hour	× $9
Total direct labor cost	$468,000

2 FLEXIBLE BUDGETING

Archer Company manufactures backpacks, messenger bags, and rolling duffel bags. Archer's accountant has estimated the following cost formulas for overhead:

Indirect labor cost = $90,000 + $0.50 per direct labor hour
Maintenance = $45,000 + $0.40 per machine hour
Power = $0.15 per machine hour
Depreciation = $150,000
Other = $63,000 + $1.30 per direct labor hour

In the coming year, Archer is considering three budgeting scenarios: conservative (assumes increased competition from other companies), expected, and optimistic (assumes a particularly robust economy). Anticipated quantities sold of each type of product appear in the following table:

Product	*Conservative*	*Expected*	*Optimistic*
Backpacks	50,000	100,000	150,000
Messenger bags	20,000	40,000	80,000
Rolling duffel bags	15,000	25,000	50,000

The standard amounts for one unit of each type of product are as follows:

	Backpacks	*Messenger Bags*	*Rolling Duffel Bags*
Direct materials	$5.00	$4.00	$8.00
Direct labor hours	1.2 hours	1.0 hour	2.5 hours
Machine hours	1.0 hour	0.75 hour	2.0 hours

Direct labor costs $8 per hour.

Required:

1. Prepare an overhead budget for the three potential scenarios.
2. Now, suppose that the actual level of activity for the year was 120,000 backpacks, 45,000 messenger bags, and 40,000 rolling duffel bags. Actual overhead costs were as follows:

Indirect labor	$230,400
Maintenance	145,500
Power	38,000
Depreciation	150,000
Other	435,350

Prepare a performance report for overhead costs.

SOLUTION

1.

Direct Labor Hours	*Conservative*	*Expected*	*Optimistic*
Backpacks (@ 1.2 DLH)	60,000	120,000	180,000
Messenger bags (@ 1.0 DLH)	20,000	40,000	80,000
Rolling duffel bags (@ 2.5 DLH)	37,500	62,500	125,000
Total direct labor hours	117,500	222,500	385,000

Machine Hours	*Conservative*	*Expected*	*Optimistic*
Backpacks (@ 1.0 MHr)	50,000	100,000	150,000
Messenger bags (@ 0.75 MHr)	15,000	30,000	60,000
Rolling duffel bags (@ 2.0 MHr)	30,000	50,000	100,000
Total machine hours	95,000	180,000	310,000

Flexible Overhead Budget	*Conservative*	*Expected*	*Optimistic*
Variable overhead:			
Indirect labor ($0.50 × DLH)	$ 58,750	$111,250	$ 192,500
Maintenance ($0.40 × MHr)	38,000	72,000	124,000
Power ($0.15 × MHr)	14,250	27,000	46,500
Other ($1.30 × DLH)	152,750	289,250	500,500
Total variable overhead	$263,750	$499,500	$ 863,500
Fixed overhead:			
Indirect labor	$ 90,000	$ 90,000	$ 90,000
Maintenance	45,000	45,000	45,000
Depreciation	150,000	150,000	150,000
Other	63,000	63,000	63,000
Total fixed overhead	$348,000	$348,000	$ 348,000
Total overhead	$611,750	$847,500	$1,211,500

2. Flexible budget based on actual output:

	Direct Labor Hours	*Machine Hours*
Backpacks:		
(1.2 × 120,000)	144,000	
(1.0 × 120,000)		120,000
Messenger bags:		
(1.0 × 45,000)	45,000	
(0.75 × 45,000)		33,750
Rolling duffel bags:		
(2.5 × 40,000)	100,000	
(2.0 × 40,000)		80,000
Total	289,000	233,750

	*Flexible Budget Amount**	*Actual*	*Variance*
Indirect labor	$234,500	$230,400	$4,100 F
Maintenance	138,500	145,500	7,000 U
Power	35,063	38,000	2,937 U
Depreciation	150,000	150,000	—
Other	438,700	435,350	3,350 F
Total overhead	$996,763	$999,250	$2,487 U

*Indirect labor = $90,000 + ($0.50 × 289,000)
Maintenance = $45,000 + ($0.40 × 233,750)
Power = $0.15 × 233,750
Other = $63,000 + ($1.30 × 289,000)

KEY TERMS

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QUESTIONS FOR WRITING AND DISCUSSION

1. Define *budget*. How are budgets used in planning?
2. Define *control*. How are budgets used to control?
3. Discuss some of the reasons for budgeting.
4. What is the master budget? An operating budget? A financial budget?
5. Explain the role of a sales forecast in budgeting. What is the difference between a sales forecast and a sales budget?
6. All budgets depend on the sales budget. Is this true? Explain.
7. What is an accounts receivable aging schedule? Why is it important?
8. Suppose that the vice president of sales is a particularly pessimistic individual. If you were in charge of developing the master budget, how, if at all, would you be influenced by this knowledge?
9. Suppose that the controller of your company's largest factory is a particularly optimistic individual. If you were in charge of developing the master budget, how, if at all, would you be influenced by this knowledge?
10. What impact does the learning curve have on budgeting? What specific budgets might be affected? (*Hint:* Refer to Chapter 3 for material on the learning curve.)
11. While many small firms do not put together a complete master budget, nearly every firm creates a cash budget. Why do you think that is so?
12. Discuss the shortcomings of the traditional master budget. In what situations would the master budget perform well?
13. Define *static budget*. Give an example that shows how reliance on a static budget could mislead management.

14. What are the two meanings of a flexible budget? How is the first type of flexible budget used? The second type?
15. What are the steps involved in building an activity-based budget? How do these steps differentiate the ABB from the master budget?

EXERCISES

8-1 PRODUCTION BUDGET

LO2

Caddo Company produces floor mats used in gyms and dojos. The sales budget for four months of the year is as follows:

	Unit Sales	*Dollar Sales*
July	12,000	$ 240,000
August	50,000	1,000,000
September	30,000	600,000
October	28,000	560,000

Company policy requires that ending inventories for each month be 15 percent of next month's sales. At the beginning of July, the beginning inventory of mats met that policy.

Required:

Prepare a production budget for the third quarter of the year. Show the number of units that should be produced each month as well as for the quarter in total.

8-2 SALES AND PRODUCTION BUDGETS

LO2

Galvin Company produces a variety of rolling briefcases. Two popular types are the road warrior and the prepster. The road warrior, meant for business people who travel frequently, sells for $50, and the prepster, a new model designed for school children, sells for $30. Projected sales of the two types of brief cases for the coming four quarters are as follows:

	Road Warrior	*Prepster*
First quarter	15,000	84,000
Second quarter	16,500	24,500
Third quarter	20,000	98,000
Fourth quarter	25,500	35,000

The president of the company believes that the projected sales are realistic and can be achieved by the company.

In the factory, the production supervisor has received the projected sales figures and gathered information needed to compile production budgets. He found that 1,300 road warriors and 1,170 prepsters were in inventory on January 1. Company policy dictates that ending inventory should equal 20 percent of the next quarter's sales for road warriors and 10 percent of next quarter's sales for prepsters.

Required:

1. Prepare a sales budget for each quarter and for the year in total. Show sales by product and in total for each time period.

2. What factors might Galvin Company have considered in preparing the sales budget?
3. Prepare a separate production budget for each product for each of the first three quarters of the year.

8-3 Direct Materials Purchases Budget, Direct Labor Budget

LO2

APO Company produces stuffed toy animals; one of these is "Elliebelle the Cow." Each elliebelle takes 0.20 yard of fabric (white with irregular black splotches) and eight ounces of polyfiberfill. Material costs $3.50 per yard, and polyfiberfill is $0.05 per ounce. APO has budgeted production of elliebelles for the next four months as follows:

	Units
October	42,000
November	90,000
December	50,000
January	40,000

Inventory policy requires that sufficient fabric be in ending monthly inventory to satisfy 20 percent of the following month's production needs and sufficient polyfiberfill be in inventory to satisfy 40 percent of the following month's production needs. Inventory of fabric and polyfiberfill at the beginning of October equals exactly the amount needed to satisfy the inventory policy.

Each elliebelle produced requires (on average) 0.1 direct labor hour. The average cost of direct labor is $15 per hour.

Required:

1. Prepare a direct materials purchases budget of material for the last quarter of the year showing purchases in units and in dollars for each month and for the quarter in total.
2. Prepare a direct materials purchases budget of polyfiberfill for the last quarter of the year showing purchases in units and in dollars for each month and for the quarter in total.
3. Prepare a direct labor budget for the last quarter of the year showing the hours needed and the direct labor cost for each month and for the quarter in total.

8-4 Sales Forecast and Budget

LO2

Audio-2-Go, Inc., manufactures MP3 players. Models A-1, A-2, and A-3 are small and light. They are attached to arm bands and use flash memory. Models A-4 and A-5 are somewhat larger and use a built-in hard drive; they can be put into fanny packs for use while working out. It is now early 2007, and Audio-2-Go's budgeting team is finalizing the sales budget for 2007. Sales in units and dollars for 2006 were as follows:

Model	*Number Sold*	*Price*	*Revenue*
A-1	20,000	$ 50	$1,000,000
A-2	30,000	75	2,250,000
A-3	50,000	90	4,500,000
A-4	15,000	120	1,800,000
A-5	2,000	200	400,000
			$9,950,000

In looking over the 2006 sales figures, Audio-2-Go's sales budgeting team recalled the following:

a. Model A-1 costs were rising faster than the price could rise. Preparatory to phasing out this model, Audio-2-Go, Inc., planned to slash advertising for this model and raise its price by 30 percent. The number of units of Model A-1 to be sold was forecast to be 50 percent of 2006 units.
b. Model A-5 was introduced on November 1, 2006. It contains a built-in 20 GB hard drive and can be synchronized with several popular music software programs. Audio-2-Go brought out this model to match competitors' audio players, but the price is so much higher than other Audio-2-Go products that sales have been disappointing. The company plans to discontinue this model on June 30, 2007, and thinks that 2007 monthly sales will remain at the 2006 level if the sales price remains at the 2006 level.
c. Audio-2-Go plans to introduce Model A-6 on July 1, 2007. It will be a high-end player that will be lighter and more versatile than Model A-5 (which it will replace). The target price for this model is $180; unit sales are estimated to equal 2,500 per month.
d. A competitor has announced plans to introduce an improved version of Model A-3. Audio-2-Go believes that the Model A-3 price must be cut 20 percent to maintain unit sales at the 2006 level.
e. It was assumed that unit sales of all other models would increase by 10 percent, prices remaining constant.

Required:

Prepare a sales forecast by product and in total for Audio-2-Go, Inc., for 2007.

8-5 Purchases Budget

LO2 Central Drug Store carries a variety of health and beauty aids, including elastic ankle braces. The sales budget for ankle braces for the first six months of the year is as follows:

	Unit Sales	*Dollar Sales*
January	150	$1,200
February	140	1,120
March	145	1,160
April	160	1,280
May	200	1,600
June	260	2,080

The owner of Central Drug believes that ending inventories should be sufficient to cover 20 percent of the next month's projected sales. On January 1, there were 84 ankle braces in inventory.

Required:

1. Prepare a merchandise purchases budget in units of ankle braces for as many months as you can.
2. If ankle braces are priced at cost plus 60 percent, what is the dollar cost of purchases for each month of your purchases budget?

8-6 Schedule of Cash Receipts

LO3 Rick Moreno owns The Steak Place in Orlando, Florida. The Steak Place is an affordable restaurant near International Drive—a tourist mecca. Rick accepts cash and checks. Checks

are deposited immediately. The bank charges $0.50 per check; the amount per check averages $75. "Bad" checks that Rick cannot collect make up 2 percent of check revenue.

During a typical month, The Steak Place has sales of $75,000. About 75 percent are cash sales. Estimated sales for the next three months are as follows:

April	$60,000
May	75,000
June	80,000

Required:

Prepare a schedule of cash receipts for May and June.

8-7 Schedule of Cash Receipts

LO3

Refer to **Exercise 8-6**. Rick thinks that it may be time to refuse to accept checks and to start accepting credit cards. He is negotiating with VISA/MasterCard and American Express, and he would start the new policy on April 1. Rick estimates that with the drop in sales from the "no checks" policy and the increase in sales from the acceptance of credit cards, the net increase in sales will be 20 percent. The credit cards do involve added costs as follows:

VISA/MasterCard: Rick will accumulate these credit card receipts throughout the month and submit them in one bundle for payment on the last day of the month. The money will be credited to his account by the fifth day of the following month. A fee of 3.5 percent is charged by the credit card company.

American Express: Rick will accumulate these receipts throughout the month and mail them to American Express for payment on the last day of the month. American Express will credit his account by the sixth day of the following month. A fee of 5.5 percent is charged by American Express.

Rick estimates the following breakdown of revenues among the various payment methods.

Cash	5%
VISA/Mastercard	75
American Express	20

Required:

Prepare a schedule of cash receipts for May and June that incorporates the changes in policy.

8-8 Cash Budget

LO3

Crash Dobson, former all-state high school football player, owns a retail store that sells new and used sporting equipment. Crash has requested a cash budget for October. After examining the records of the company, you find the following:

a. Cash balance on October 1 is $1,980.
b. Actual sales for August and September are as follows:

	August	*September*
Cash sales	$15,000	$ 20,000
Credit sales	80,000	90,000
Total sales	$95,000	$110,000

c. Credit sales are collected over a 3-month period: 50 percent in the month of sale, 30 percent in the second month, and 15 percent in the third month. The remaining sales are uncollectible.
d. Inventory purchases average 70 percent of a month's total sales. Of those purchases, 40 percent are paid for in the month of purchase. The remaining 60 percent are paid for in the following month.
e. Salaries and wages total $2,000 per month.
f. Rent is $2,700 per month.
g. Taxes to be paid in October are $5,000.
h. Crash usually withdraws $4,000 each month as his salary.
i. Advertising is $500 per month.
j. Other operating expenses total $800 per month.

Crash tells you that he expects cash sales of $10,000 and credit sales of $65,000 for October. He likes to have $2,000 on hand at the end of the month and is concerned about the potential October ending balance.

Required:

1. Prepare a cash budget for October. Include supporting schedules for cash collections and cash payments.
2. Did the business meet Crash's desired ending cash balance for October? Assuming that the owner has no hope of establishing a line of credit for the business, what recommendations would you give the owner for meeting the desired cash balance?

8-9 Budgeted Cash Collections, Budgeted Cash Payments

LO3 CMA

Historically, Pine Hill Wood Products has had no significant bad debt experience with its customers. There are no cash sales, all sales are made on credit. Payments for credit sales have been received as follows:

40 percent of credit sales in the month of the sale.
30 percent of credit sales in the first subsequent month.
25 percent of credit sales in the second subsequent month.
5 percent of credit sales in the third subsequent month.

The forecast for both cash and credit sales is as follows.

January	$95,000
February	65,000
March	70,000
April	80,000
May	85,000

Required:

1. What is the forecasted cash inflow for Pine Hill Wood Products for May?
2. Due to deteriorating economic conditions, Pine Hill Wood Products has now decided that its cash forecast should include a bad debt adjustment of 2 percent of credit sales, beginning with sales for the month of April. Because of this policy change, what will happen to the total expected cash inflow related to sales made in April? *(CMA adapted)*

8-10 Schedule of Cash Receipts

LO3

David Campbell's is a men's clothing store in Mesa, Arizona. David Campbell's has its own house charge accounts and has found from past experience that 20 percent of its

sales are for cash. The remaining 80 percent are on credit. An aging schedule for accounts receivable reveals the following pattern:

15 percent of credit sales are paid in the month of sale.
65 percent of credit sales are paid in the first month following the sale.
18 percent of credit sales are paid in the second month following the sale.
2 percent of credit sales are never collected.

Credit sales that have not been paid until the second month following the sale are considered overdue and are subject to a 2 percent late charge.

David Campbell's has developed the following sales forecast:

May	$66,000
June	85,000
July	55,000
August	75,000
September	80,000

Required:

Prepare a schedule of cash receipts for August and September.

8-11 Cash Disbursements Schedule

LO3

Refer to **Exercise 8-10**. David Campbell's purchases clothing evenly throughout the month. All purchases are on account. On the first of every month, Moira Campbell, David's wife, pays for all of the previous month's purchases. Terms are 2/10, n/30 (i.e., a 2 percent discount can be taken if the bill is paid within 10 days; otherwise, the entire amount is due within 30 days).

The forecast purchases for the months of May through September are as follows:

May	$48,000
June	25,000
July	35,000
August	40,000
September	50,000

Required:

1. Prepare a cash disbursements schedule for the months of August and September.
2. Now, suppose that David wants to see what difference it would make to have someone pay for any purchases that have been made three times per month, on the 1st, the 11th, and the 21st. Prepare a cash disbursements schedule for the months of July and August assuming this new payment schedule.
3. Suppose that Moira (who works full time as a school teacher and is the mother of two small children) does not have time to make payments on two extra days per month and that a temporary employee is hired on the 11th and 21st at $22 per hour, for four hours each of those two days. Is this a good decision? Explain.

8-12 Production, Purchases, and Direct Labor Budgets

LO2

CMA

Rokat Corporation is a manufacturer of tables sold to schools, restaurants, hotels, and other institutions. The table tops are manufactured by Rokat, but the table legs are purchased from an outside supplier. The assembly department takes a manufactured table top and attaches the four purchased table legs. It takes 18 minutes of labor to assemble

a table. The company follows a policy of producing enough tables to ensure that 40 percent of next month's sales are in the finished goods inventory. Rokat also purchases sufficient materials to ensure that materials inventory is 60 percent of the following month's scheduled production. Rokat's sales budget in units for the next quarter is as follows:

July	2,300
August	2,500
September	2,100

Rokat's ending inventories in units for June 30, 2007, are as follows:

Finished goods	1,900
Materials (legs)	4,000

Required:

1. Calculate the number of tables to be produced during August 2007.
2. Disregarding your response to Requirement 1, assume the required production units for August and September are 1,600 and 1,800, respectively, and the July 31, 2007, materials inventory is 4,200 units. Compute the number of table legs to be purchased in August.
3. Assume that Rokat Corporation will produce 1,800 units in September 2007. How many employees will be required for the assembly department in September? (Fractional employees are acceptable since employees can be hired on a part-time basis. Assume a 40-hour week and a 4-week month.) *(CMA adapted)*

8-13 Flexible Budget

LO4

In an attempt to improve budgeting, the controller for Zebro Products has developed a flexible budget for overhead costs. Zebro Products makes two types of paper-based cloths: counter wipes and floor wipes. Zebro expects to produce 500,000 rolls of each product during the coming year. Counter wipes require 0.01 direct labor hour per roll, and floor wipes require 0.05. The controller has developed the following cost formulas for each of the four overhead items:

	Cost Formula
Maintenance	$10,000 + $0.20 *DLH*
Power	$0.50 *DLH*
Indirect labor	$43,600 + $1.50 *DLH*
Rent	$24,000

Required:

1. Prepare an overhead budget for the expected activity level for the coming year.
2. Prepare an overhead budget that reflects production that is 10 percent higher than expected (for both products) and a budget for production that is 20 percent lower than expected.

8-14 Flexible Budget

LO4

Refer to **Exercise 8-13**. At the end of the year, Zebro Products actually produced 550,000 rolls of counter wipes and 500,000 of floor wipes. The actual overhead costs incurred were:

Maintenance	$15,600
Power	17,250
Indirect labor	89,000
Rent	24,000

Required:

Prepare a performance report for the period.

8-15 Sales Forecast and Flexible Budget

LO2, LO4

Sandman, Inc., manufactures three models of mattresses: the sleepeze, the plushette, and the ultima. Forecast sales for 2007 are 15,000 for the sleepeze, 12,000 for the plushette, and 5,000 for the ultima. Gene Dixon, vice president of sales, has provided the following information:

a. Salaries for his office (including himself at $65,000, a marketing research assistant at $40,000, and an administrative assistant at $25,000) are budgeted for $130,000 next year.
b. Depreciation on the offices and equipment is $20,000 per year.
c. Office supplies and other expenses total $21,000 per year.
d. Advertising has been steady at $20,000 per year. However, the ultima is a new product and will require extensive advertising to educate consumers on the unique features of this high-end mattress. Gene believes the company should spend 15 percent of first-year ultima sales for a print and television campaign.
e. Commissions on the sleepeze and plushette lines are 5 percent of sales. These commissions are paid to independent jobbers who sell the mattresses to retail stores.
f. Last year, shipping for the sleepeze and plushette lines averaged $50 per unit sold. Gene expects the ultima line to ship for $75 per unit sold since this model features a larger mattress.

Required:

1. Suppose that Gene is considering three sales scenarios as follows:

	Pessimistic		*Expected*		*Optimistic*	
	Price	*Quantity*	*Price*	*Quantity*	*Price*	*Quantity*
Sleepeze	$180	12,500	$ 200	15,000	$ 200	18,000
Plushette	300	10,000	350	12,000	360	14,000
Ultima	900	2,000	1,000	5,000	1,200	5,000

   Prepare a revenue budget for the sales division for the coming year for each scenario.
2. Prepare a flexible expense budget for the sales division for the three scenarios above.

8-16 Activity-Based Budget

LO5

Refer to **Exercise 8-15**. Suppose Gene determines that next year's sales division activities include the following:

Research—researching current and future conditions in the industry

Shipping—arranging for shipping of mattresses and handling calls from purchasing agents at retail stores to trace shipments and correct errors

Jobbers—coordinating the efforts of the independent jobbers who sell the mattresses

Basic ads—placing print and television ads for the sleepeze and plushette lines

Ultima ads—choosing and working with the advertising agency on the ultima account

Office management—operating the sales division office

The percentage of time spent by each employee of the sales division on each of the above activities is given in the following table:

	Gene	*Research Assistant*	*Administrative Assistant*
Research	—	75%	—
Shipping	30%	—	20%
Jobbers	15	10	20
Basic ads	—	15	40
Ultima ads	30	—	5
Office management	25	—	15

Additional information is as follows:

a. Depreciation on the office equipment belongs to the office management activity.
b. Of the $21,000 for office supplies and other, $5,000 can be assigned to telephone costs, which can be split evenly between the shipping and jobbers' activities. An additional $2,400 per year is attributable to Internet connections and fees, and the bulk of these costs (80 percent) are assignable to research. The remainder is a cost of office management. All other office supplies and costs are assigned to the office management activity.

Required:

1. Prepare an activity-based budget for next year by activity. Use the expected level of sales activity.
2. On the basis of the budget prepared in Requirement 1, advise Gene regarding actions that might be taken to reduce expenses.

PROBLEMS

8-17 Operating Budget, Comprehensive Analysis

LO2, LO3

Leitner Manufacturing, Inc., produces control valves used in the production of oil field equipment. The control valves are sold to various gas and oil engineering companies throughout the United States. Projected sales in units for the coming four months are as follows:

January	20,000
February	25,000
March	30,000
April	30,000

The following data pertain to production policies and manufacturing specifications followed by Leitner:

a. Finished goods inventory on January 1 is 13,000 units. The desired ending inventory for each month is 70 percent of the next month's sales.
b. The data on materials used are as follows:

Direct Material	*Per-Unit Usage*	*Unit Cost*
Part 714	5	$4
Part 502	3	3

Inventory policy dictates that sufficient materials be on hand at the beginning of the month to produce 50 percent of that month's estimated sales. This is exactly the amount of material on hand on January 1.

c. The direct labor used per unit of output is two hours. The average direct labor cost per hour is $15.

d. Overhead each month is estimated using a flexible budget formula. (Activity is measured in direct labor hours.)

	Fixed Cost Component	*Variable Cost Component*
Supplies	$ —	$1.00
Power	—	0.20
Maintenance	28,000	1.10
Supervision	14,000	—
Depreciation	100,000	—
Taxes	7,000	—
Other	56,000	1.60

e. Monthly selling and administrative expenses are also estimated using a flexible budgeting formula. (Activity is measured in units sold.)

	Fixed Costs	*Variable Costs*
Salaries	$30,000	—
Commissions	—	$0.75
Depreciation	5,000	—
Shipping	—	2.60
Other	10,000	0.40

f. The unit selling price of the control valve is $90.

g. In February, the company plans to purchase land for future expansion. The land costs $90,000.

h. All sales and purchases are for cash. Cash balance on January 1 equals $162,900. If the firm develops a cash shortage by the end of the month, sufficient cash is borrowed to cover the shortage. Any cash borrowed is repaid one month later, as is the interest due. The interest rate is 12 percent per annum.

Required:

Prepare a monthly operating budget for the first quarter with the following schedules:

1. Sales budget
2. Production budget
3. Direct materials purchases budget
4. Direct labor budget
5. Overhead budget
6. Selling and administrative expense budget
7. Ending finished goods inventory budget
8. Cost of goods sold budget
9. Budgeted income statement (ignore income taxes)
10. Cash budget

8-18 Cash Budget, Pro Forma Balance Sheet

LO3

Bernard Creighton is the controller for Creighton Hardware Store. In putting together the cash budget for the fourth quarter of the year, he has assembled the following data:

a. Sales

July (actual)	$100,000
August (actual)	120,000
September (estimated)	90,000
October (estimated)	100,000
November (estimated)	135,000
December (estimated)	150,000

b. Each month, 20 percent of sales are for cash, and 80 percent are on credit. The collection pattern for credit sales is 20 percent in the month of sale, 50 percent in the following month, and 30 percent in the second month following the sale.
c. Each month, the ending inventory exactly equals 40 percent of the cost of next month's sales. The markup on goods is 33.33 percent of cost.
d. Inventory purchases are paid for in the month following purchase.
e. Recurring monthly expenses are as follows:

Salaries and wages	$10,000
Depreciation on plant and equipment	4,000
Utilities	1,000
Other	1,700

f. Property taxes of $15,000 are due and payable on September 15.
g. Advertising fees of $6,000 must be paid on October 20.
h. A lease on a new storage facility is scheduled to begin on November 2. Monthly payments are $5,000.
i. The company has a policy to maintain a minimum cash balance of $10,000. If necessary, it will borrow to meet its short-term needs. All borrowing is done at the beginning of the month. All payments on principal and interest are made at the end of the month. The annual interest rate is 9 percent. The company must borrow in multiples of $1,000.
j. A partially completed balance sheet as of August 31 follows. (Accounts payable is for inventory purchases only.)

	Assets	*Liabilities & Owners' Equity*
Cash	$?	
Accounts receivable	?	
Inventory	?	
Plant and equipment	431,750	
Accounts payable		$?
Common stock		220,000
Retained earnings		268,750
Total	$?	$?

Required:

1. Complete the balance sheet given in part (j).
2. Bernard wants to see how the company is doing prior to starting the month of December. Prepare a cash budget for the months of September, October, and November and for the 3-month period in total (the period begins on September 1). Provide a supporting schedule of cash collections.
3. Prepare a pro forma balance sheet as of November 30.

8-19 Production, Direct Labor, Direct Materials, Sales Budgets, Budgeted Contribution Margin

LO2

CMA

Bullen & Company makes and sells high-quality glare filters for microcomputer monitors. John Crave, controller, is responsible for preparing Bullen's master budget and has assembled the following data for 2007.

The direct labor rate includes wages, all employee-related benefits, and the employer's share of FICA. Labor saving machinery will be fully operational by March. Also, as of March 1, the company's union contract calls for an increase in direct labor wages that is included in the direct labor rate. Bullen expects to have 10,000 glare filters in inventory at December 31, 2006, and has a policy of carrying 50 percent of the following month's projected sales in inventory.

	2007			
	January	*February*	*March*	*April*
Estimated unit sales	20,000	24,000	16,000	18,000
Sales price per unit	$80	$80	$75	$75
Direct labor hours per unit	4.0	4.0	3.5	3.5
Direct labor hourly rate	$15	$15	$16	$16
Direct materials cost per unit	$10	$10	$10	$10

Required:

1. Prepare the following monthly budgets for Bullen & Company for the first quarter of 2007. Be sure to show supporting calculations.
   a. Production budget in units
   b. Direct labor budget in hours
   c. Direct materials cost budget
   d. Sales budget
2. Calculate the total budgeted contributions margin for Bullen & Company for the first quarter of 2007. Be sure to show supporting calculations. *(CMA adapted)*

8-20 Cash Budget

LO3

CMA

Friendly Freddie's is an independently owned major appliance and electronics discount chain with seven stores located in a Midwest metropolitan area. Rapid expansion has created the need for careful planning of cash requirements to ensure that the chain is able to replenish stock adequately and meet payment schedules to creditors. Fred Ferguson, founder of the chain, has established a banking relationship that provides a $200,000 line of credit to Friendly Freddie's. The bank requires that a minimum balance of $8,200 be kept in the chain's checking account at the end of each month. When the balance goes below $8,200, the bank automatically extends the line of credit in multiples of $1,000 so that the checking account balance is at least $8,200 at month-end.

Friendly Freddie's attempts to borrow as little as possible and repays the loans quickly in multiples of $1,000 plus 2 percent monthly interest on the entire loan balance. Interest payments and any principal payments are paid at the end of the month following the loan. The chain currently has no outstanding loans.

The following cash receipts and disbursements data apply to the fourth quarter of the current calendar year:

Estimated beginning cash balance	$ 8,800
Estimated cash sales:	
October	$ 14,000
November	29,000
December	44,000
Sales on account:	
July (actual)	$130,000
August (actual)	104,000
September (actual)	128,000
October (estimated)	135,000
November (estimated)	142,000
December (estimated)	188,000

Projected cash collection of sales on account is estimated to be 70 percent in the month following the sale, 20 percent in the second month following the sale, and 6 percent in the third month following the sale. The 4 percent beyond the third month following the sale is determined to be uncollectible. In addition, the chain is scheduled to receive $13,000 cash on a note receivable in October.

All inventory purchases are made on account as the chain has excellent credit with all vendors because of a strong payment history. The following information regarding inventory purchases is available:

Inventory Purchases	
September (actual)	$120,000
October (estimated)	112,000
November (estimated)	128,000
December (estimated)	95,000

Cash disbursements for inventory are made in the month following purchase using an average cash discount of 3 percent for timely payment. Monthly cash disbursements for operating expenses during October, November, and December are estimated to be $38,000, $41,000, and $46,000, respectively.

Required:

Prepare Friendly Freddie's cash budget for the months of October, November, and December showing all receipts, disbursements, and credit line activity, where applicable. *(CMA adapted)*

8-21 Flexible Budget

LO4

The controller for Muir Company's Salem plant is analyzing overhead in order to determine appropriate drivers for use in flexible budgeting. She decided to concentrate on the past 12 months since that time period was one in which there was little important change in technology, product lines, and so on. Data on overhead costs, number of machine hours, number of setups, and number of purchase orders are given in the following table:

Month	*Overhead Costs*	*Number of Machine Hours*	*Number of Setups*	*Number of Purchase Orders*
January	$ 32,296	1,000	20	216
February	31,550	930	18	250
March	36,280	1,100	21	300
April	36,867	1,050	23	270
May	36,790	1,170	22	285
June	37,800	1,200	25	240
July	40,024	1,235	27	237
August	39,256	1,190	24	303
September	33,800	1,070	20	255
October	33,779	1,210	22	195
November	37,225	1,207	23	270
December	27,500	1,084	15	150
Total	$423,167	13,446	260	2,971

Required:

1. Calculate an overhead rate based on machine hours using the total overhead cost and total machine hours. (Round the overhead rate to the nearest cent and predicted overhead to the nearest dollar.) Use this rate to predict overhead for each of the 12 months.
2. Run a regression equation using only machine hours as the independent variable. Prepare a flexible budget for overhead for the 12 months using the results of this regression equation. (Round the intercept and *x* coefficient to the nearest cent and predicted overhead to the nearest dollar.) Is this flexible budget better than the budget in Requirement 1? Why or why not?

8-22 Flexible Budget, Multiple Regression

LO4 Refer to **Problem 8-21** for data.

Required:

1. Run a multiple regression equation using machine hours, number of setups, and number of purchase orders as independent variables. Prepare a flexible budget for overhead for the 12 months using the results of this regression equation. (Round the regression coefficients to the nearest cent and predicted overhead to the nearest dollar.) Which flexible budget is better—the one based on simple regression (with machine hours as the only independent variable) or the one based on multiple regression? Why?
2. Now, suppose that the controller remembers that the factory throws two big parties each year, one for the 4th of July and the other for Christmas. Rerun the multiple regression with machine hours, number of setups, and number of purchase orders, and add a dummy variable called "Party." (This variable takes the value 1 for months with a factory-sponsored party, and 0 otherwise.) Prepare a flexible budget for the 12 months using the results of this regression. Discuss the implications of using this new regression for decision making.

8-23 Flexible Budget for a Service Firm

LO2, LO4 Dorian Dermatology Associates consists of a medical suite of offices with two MDs, one office manager, two medical assistants, and one receptionist. The office manager provided the following information on Dorian's operations:

a. Rent for the office suite is $1,200 per month.

b. Depreciation on furnishings and equipment is $1,000 per month.
c. When a patient calls for an appointment, the receptionist determines how long the appointment should take and allots one, two, three, or four 15-minute time slots. (For example, an initial visit is allotted 30 minutes, or two 15-minute time slots, but a followup visit might take only one 15-minute time slot.)
d. The office manager estimates that each patient seen during the month costs about $10 for office supplies. The estimate for medical supplies is a bit more complex. One of the medical assistants feels that patients with longer appointments use more medical supplies than patients who need only a shorter appointment. After much discussion, she thinks that each patient uses about $5 of medical supplies for every 15-minute time slot. (That is, a patient who requires only a brief visit of 15 minutes would use about $5 in supplies, and one who requires a 1-hour visit would average $20 of medical supplies.)
e. The office manager earns a yearly salary of $25,000, each medical assistant earns $18,000, and the receptionist's salary is $15,000.
f. Utilities run about $500 per month.
g. A janitorial service cleans the offices twice a week for $250 per month.
h. Accounting and financial services cost $28,800 on average for the year.
i. Insurance runs about $36,000 per year.
j. Other expenses (magazine subscriptions, plants, and the like) are about $700 per month.

For the coming month, it is estimated that the doctors will see 800 patients, who will use a total of 1,200 15-minute time slots.

Required:

1. Categorize each cost as fixed or variable, and give its driver.
2. Prepare an overhead budget for May. Since the doctors split the profit from the practice, do not worry about the doctors' salaries and consider all other expenses of the practice as overhead.

8-24 Activity-Based Budget for a Service Firm

LO5

Refer to **Problem 8-23**. Suppose that the accountant for the practice, Sally Bains, decides to prepare an activity-based budget for Dorian Dermatology Associates. Her interviews with the office manager, receptionist, and medical assistants provided the following information:

a. There are essentially six activities for the medical practice: scheduling appointments, initial patient screening, assisting the doctors, filing insurance, handling disputed insurance claims, and providing facilities.
b. Scheduling appointments is done by the receptionist. It takes about half of her time and requires a special software package. The number of phone calls to the office is the driver for this activity. The cost per unit of driver is $1 per call.
c. The initial screening requires the medical assistant to call each patient from the waiting room to an examining room. The assistant then takes a brief medical history and determines the nature of the complaint. If it is a repeat appointment, the assistant can occasionally handle it. The driver is the number of patients seen, and the cost per unit of driver is $7.25.
d. The activity of assisting doctors is performed by the medical assistants. After the initial screening, the doctor examines the patient and determines the diagnosis and course of treatment. Occasionally, the treatment requires assistance with a procedure (e.g., minor surgery). The driver for the activity is the number of procedures, and the cost per unit of driver is $7.25.
e. Filing insurance claims is handled by the office manager and receptionist. This takes about 60 percent of the office manager's time and the remaining half of

the receptionist's time. Office supplies and computer programs are also required. The driver is the number of claims filed, and the cost is $9.27 per claim filed.

f. Sometimes, insurance claims are disputed by the insurance companies. When this occurs, considerable more time and effort are required by the office manager. She also needs help from the medical assistants to check for errors in charts and clarify diagnoses. Supplies and office machinery (fax machine and long distance calls) are also required. The driver is the number of disputed claims, and the cost is $123.50 per disputed claim.

g. The final activity is providing facilities. These costs total $8,550 per month and include rent, noncomputer depreciation, utilities, janitorial services, accounting and financial services, insurance, and other expenses.

For the month of May, the following amounts of each driver are estimated: 875 phone calls for appointments, 800 patients to be seen, 400 procedures to be performed, 650 insurance claims to be filed, and 40 disputed claims.

Required:

1. Prepare an activity-based overhead budget for the month of May.
2. Based on the given information, what managerial advice would you give to Dorian Dermatology Associates?

8-25 Participative versus Imposed Budgeting

LO6

CMA

An effective budget converts the goals and objectives of an organization into data. The budget serves as a blueprint for management's plans. The budget is also the basis for control. Management performance can be evaluated by comparing actual results with the budget.

Thus, creating the budget is essential for the successful operation of an organization. Finding the resources to implement the budget—that is, moving from a starting point to the ultimate goal—requires the extensive use of human resources. How managers perceive their roles in the process of budgeting is important to the successful use of the budget as an effective tool for planning, communicating, and controlling.

Required:

1. Discuss the behavioral implications of planning and control when a company's management employs:
   a. An imposed budgetary approach
   b. A participative budgetary approach
2. Communications plays an important role in the budgetary process whether a participative or an imposed budgetary approach is used.
   a. Discuss the differences between communication flows in these two budgetary approaches.
   b. Discuss the behavioral implications associated with the communication process for each of the budgetary approaches. *(CMA adapted)*

8-26 Information for Budgeting, Ethics

LO1, LO6

CMA

Norton Company, a manufacturer of infant furniture and carriages, is in the initial stages of preparing the annual budget for 2007. Scott Ford has recently joined Norton's accounting staff and is interested in learning as much as possible about the company's budgeting process. During a recent lunch with Marge Atkins, sales manager, and Pete Granger, production manager, Scott initiated the following conversation.

SCOTT: Since I'm new around here and am going to be involved with the preparation of the annual budget, I'd be interested in learning how the two of you estimate sales and production numbers.

MARGE: We start out very methodically by looking at recent history, discussing what we know about current accounts, potential customers, and the general state of consumer spending. Then, we add that usual dose of intuition to come up with the best forecast we can.

PETE: I usually take the sales projections as the basis for my projections. Of course, we have to make an estimate of what this year's closing inventories will be, which is sometimes difficult.

SCOTT: Why does that present a problem? There must have been an estimate of closing inventories in the budget for the current year.

PETE: Those numbers aren't always reliable since Marge makes some adjustments to the sales numbers before passing them on to me.

SCOTT: What kind of adjustments?

MARGE: Well, we don't want to fall short of the sales projections so we generally give ourselves a little breathing room by lowering the initial sales projection anywhere from 5 to 10 percent.

PETE: So, you can see why this year's budget is not a very reliable starting point. We always have to adjust the projected production rates as the year progresses, and of course, this changes the ending inventory estimates. By the way, we make similar adjustments to expenses by adding at least 10 percent to the estimates; I think everyone around here does the same thing.

Required:

1. Marge Atkins and Pete Granger have described the use of budgetary slack.
   a. Explain why Marge and Pete behave in this manner, and describe the benefits they expect to realize from the use of budgetary slack.
   b. Explain how the use of budgetary slack can adversely affect Marge and Pete.
2. As a management accountant, Scott Ford believes that the behavior described by Marge and Pete may be unethical and that he may have an obligation not to support this behavior. By citing the specific standards of competence, confidentiality, integrity, and/or objectivity from the "Standards of Ethical Conduct for Management Accountants" (in Chapter 1), explain why the use of budgetary slack may be unethical. *(CMA adapted)*

8-27 Collaborative Learning Exercise

LO1

CMA

Karmee Company has been accumulating operating data in order to prepare an annual profit plan. Details regarding Karmee's sales for the first six months of the coming year are as follows:

Estimated Monthly Sales	
January	$600,000
February	650,000
March	700,000
April	625,000
May	720,000
June	800,000

Type of Monthly Sale	
Cash sales	20%
Credit sales	80

Collection Pattern for Credit Sales	
Month of sale	30%
First month following sale	40
Second month following sale	25

Karmee's cost of goods sold averages 40 percent of the sales value. Karmee's objective is to maintain a target inventory equal to 30 percent of the next month's sales. Purchases of merchandise for resale are paid for in the month following the sale.

The variable operating expenses (other than cost of goods sold) for Karmee are 10 percent of sales and are paid for in the month following the sale. The annual fixed operating expenses follow. All of these are incurred uniformly throughout the year and paid monthly except for insurance and property taxes. Insurance is paid quarterly in January, April, July, and October. Property taxes are paid twice a year in April and October.

Annual Fixed Operating Costs	
Advertising	$ 720,000
Salaries	1,080,000
Depreciation	420,000
Property taxes	240,000
Insurance	180,000

Required:

Form groups of two or three. Within each group, calculate the following:

1. The amount of cash collected in March for Karmee Company from the sales made during March.
2. Karmee Company's total cash receipts for the month of April.
3. The purchases of merchandise that Karmee Company will need to make during February.
4. The amount of cost of goods sold that will appear on Karmee Company's pro forma income statement for the month of February.
5. The total cash disbursements that Karmee Company will make for the operating expenses (expenses other than the cost of goods sold) during the month of April. *(CMA adapted)*

8-28 Cyber Research Case

LO1, LO2

Search the Internet for five companies in different industries. Then, see what clues are given on the Web sites as to factors affecting sales budgeting for each company. Write a brief, 1-page description of the factors affecting sales budgeting for each of your companies.