

Introduction to Accounting: The Language of Business

Lesson 14: Operational Budgeting

Supplemental Textbook



Operational Budgeting

A manager's perspective

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I began my career with The Coca-Cola Company as an account manager supplying product to local stores and restaurants in my territory. I then spent some time as Area Marketing Manager and Area Sales Development Manager before reaching my current position.

As Regional Vice President and General Manager, I oversee the administration and operations of a region spanning 150,000 square miles, and one of my primary objectives is to maintain a successful return on investment. I manage three division vice presidents and four regional vice presidents, and I try to spend about 60 percent of my time working with account managers who call on retail trade accounts.

In fact, a lot of my job is providing training and inspiration. We hold monthly meetings with each division to assess sales and provide motivation for the account managers. I also monitor daily key indicator reports to track sales performance in the region.

Behind increasing sales, a strong emphasis on training is one of my most important objectives. For example, Coca-Cola recently instituted a six-week training program for new account managers. The program brings new members of the sales team up to speed on the company and sales techniques, then puts them out in the field. Our sales base is constantly expanding, and we are starting to call on different buyers, so we need ongoing training to stay competitive.

All of this training helps the region achieve its number one objective—increasing sales and making the "bottom line". Sales for each division are closely monitored, and we measure employees' performances against the sales budget established for the region.

In managing your personal finances, you may prepare a written plan of your anticipated cash inflows and outflows. In fact, financial advisors often recommend that we prepare a written plan of cash inflows and outflows, then—here is the hard part—follow it. Such a written plan is a budget.

Companies prepare budgets to plan for and then control their revenues (inflows) and expenses (outflows). Failure to prepare a budget could lead to significant cash flow problems or even financial disaster for a company. In fact, one of the leading causes of failure in small businesses is failing to plan and control operations through the use of budgets.

This chapter first provides a conceptual foundation for budgeting. Then we describe and illustrate a master budget. The chapter concludes with special topics relating to budgeting.

The budget—For planning and control

Time and money are scarce resources to all individuals and organizations; the efficient and effective use of these resources requires planning. Planning alone, however, is insufficient. Control is also necessary to ensure that plans actually are carried out. A **budget** is a tool that managers use to plan and control the use of scarce resources. A budget is a plan showing the company's objectives and how management intends to acquire and use resources to attain those objectives.

Companies, nonprofit organizations, and governmental units use many different types of budgets. Responsibility budgets, are designed to judge the performance of an individual segment or manager. Capital budgets, evaluate long-term capital projects such as the addition of equipment or the relocation of a plant. This chapter examines the **master budget**, which consists of a planned operating budget and a financial budget. The **planned operating budget** helps to plan future earnings and results in a projected income statement. The **financial budget** helps management plan the financing of assets and results in a projected balance sheet.

The budgeting process involves planning for future profitability because earning a reasonable return on resources used is a primary company objective. A company must devise some method to deal with the uncertainty of the future. A company that does no planning whatsoever chooses to deal with the future by default and can react to events only as they occur. Most businesses, however, devise a blueprint for the actions they will take given the foreseeable events that may occur.

A budget: (1) shows management's operating plans for the coming periods; (2) formalizes management's plans in quantitative terms; (3) forces all levels of management to think ahead, anticipate results, and take action to remedy possible poor results; and (4) may motivate individuals to strive to achieve stated goals.

Companies can use budget-to-actual comparisons to evaluate individual performance. For instance, the standard variable cost of producing a personal computer at IBM is a budget figure. This figure can be compared with the actual cost of producing personal computers to help evaluate the performance of the personal computer production managers and employees who produce personal computers.

Many other benefits result from the preparation and use of budgets. For example: (1) businesses can better coordinate their activities; (2) managers become aware of other managers' plans; (3) employees become more cost conscious and try to conserve resources; (4) the company reviews its organization plan and changes it when necessary; and (5) managers foster a vision that otherwise might not be developed.

The planning process that results in a formal budget provides an opportunity for various levels of management to think through and commit future plans to writing. In addition, a properly prepared budget allows management to follow the management-by-exception principle by devoting attention to results that deviate significantly from planned levels. For all these reasons, a budget must clearly reflect the expected results.

Failing to budget because of the uncertainty of the future is a poor excuse for not budgeting. In fact, the less stable the conditions, the more necessary and desirable is budgeting, although the process becomes more difficult. Obviously, stable operating conditions permit greater reliance on past experience as a basis for budgeting. Remember, however, that budgets involve more than a company's past results. Budgets also consider a company's future plans and express expected activities. As a result, budgeted performance is more useful than past performance as a basis for judging actual results.

A budget should describe management's assumptions relating to: (1) the state of the economy over the planning horizon; (2) plans for adding, deleting, or changing product lines; (3) the nature of the industry's competition; and

(4) the effects of existing or possible government regulations. If these assumptions change during the budget period, management should analyze the effects of the changes and include this in an evaluation of performance based on actual results.

Budgets are quantitative plans for the future. However, they are based mainly on past experience adjusted for future expectations. Thus, accounting data related to the past play an important part in budget preparation. The accounting system and the budget are closely related. The details of the budget must agree with the company's ledger accounts. In turn, the accounts must be designed to provide the appropriate information for preparing the budget, financial statements, and interim financial reports to facilitate operational control.

Management should frequently compare accounting data with budgeted projections during the budget period and investigate any differences. Budgeting, however, is not a substitute for good management. Instead, the budget is an important tool of managerial control. Managers make decisions in budget preparation that serve as a plan of action.

The period covered by a budget varies according to the nature of the specific activity involved. Cash budgets may cover a week or a month; sales and production budgets may cover a month, a quarter, or a year; and the general operating budget may cover a quarter or a year.

Budgeting involves the coordination of financial and nonfinancial planning to satisfy organizational goals and objectives. No foolproof method exists for preparing an effective budget. However, budget makers should carefully consider the conditions that follow:

Top management support All management levels must be aware of the budget's importance to the company and must know that the budget has top management's support. Top management, then, must clearly state long-range goals and broad objectives. These goals and objectives must be communicated throughout the organization. Long-range goals include the expected quality of products or services, growth rates in sales and earnings, and percentage-of-market targets. Overemphasis on the mechanics of the budgeting process should be avoided.

Participation in goal setting Management uses budgets to show how it intends to acquire and use resources to achieve the company's long-range goals. Employees are more likely to strive toward organizational goals if they participate in setting them and in preparing budgets. Often, employees have significant information that could help in preparing a meaningful budget. Also, employees may be motivated to perform their own functions within budget constraints if they are committed to achieving organizational goals.

Communicating results People should be promptly and clearly informed of their progress. Effective communication implies (1) timeliness, (2) reasonable accuracy, and (3) improved understanding. Managers should effectively communicate results so employees can make any necessary adjustments in their performance.

Flexibility If significant basic assumptions underlying the budget change during the year, the planned operating budget should be restated. For control purposes, after the actual level of operations is known, the actual revenues and expenses can be compared to expected performance at that level of operations.

Follow-up Budget follow-up and data feedback are part of the control aspect of budgetary control. Since the budgets are dealing with projections and estimates for future operating results and financial positions, managers must continuously check their budgets and correct them if necessary. Often management uses performance reports as a follow-up tool to compare actual results with budgeted results.

The term budget has negative connotations for many employees. Often in the past, management has imposed a budget from the top without considering the opinions and feelings of the personnel affected. Such a dictatorial

process may result in resistance to the budget. A number of reasons may underlie such resistance, including lack of understanding of the process, concern for status, and an expectation of increased pressure to perform. Employees may believe that the performance evaluation method is unfair or that the goals are unrealistic and unattainable. They may lack confidence in the way accounting figures are generated or may prefer a less formal communication and evaluation system. Often these fears are completely unfounded, but if employees believe these problems exist, it is difficult to accomplish the objectives of budgeting.

Problems encountered with such imposed budgets have led accountants and management to adopt participatory budgeting. **Participatory budgeting** means that all levels of management responsible for actual performance actively participate in setting operating goals for the coming period. Managers and other employees are more likely to understand, accept, and pursue goals when they are involved in formulating them.

Within a participatory budgeting process, accountants should be compilers or coordinators of the budget, not preparers. They should be on hand during the preparation process to present and explain significant financial data. Accountants must identify the relevant cost data that enables management's objectives to be quantified in dollars. Accountants are responsible for designing meaningful budget reports. Also, accountants must continually strive to make the accounting system more responsive to managerial needs. That responsiveness, in turn, increases confidence in the accounting system.

Although many companies have used participatory budgeting successfully, it does not always work. Studies have shown that in many organizations, participation in the budget formulation failed to make employees more motivated to achieve budgeted goals. Whether or not participation works depends on management's leadership style, the attitudes of employees, and the organization's size and structure. Participation is not the answer to all the problems of budget preparation. However, it is one way to achieve better results in organizations that are receptive to the philosophy of participation.

A **master budget** consists of a projected income statement (planned operating budget) and a projected balance sheet (financial budget) showing the organization's objectives and proposed ways of attaining them. In Exhibit 1, we depict a flowchart of the financial planning process that you can use as an overview of the elements in a master budget. The remainder of this chapter describes how a company prepares a master budget. We emphasize the master budget because of its prime importance to financial planning and control in a business entity.

Illustration 23.1 Flowchart of the Financial Planning Process

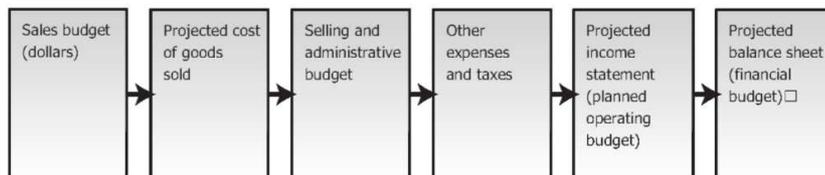


Exhibit 1: Flowchart of the financial planning process

The budgeting process starts with management's plans and objectives for the next period. These plans take into consideration various policy decisions concerning selling price, distribution network, advertising expenditures, and environmental influences from which the company forecasts its sales for the period (in units by product or product line). Managers arrive at the sales budget in dollars by multiplying sales units times sales price per unit. They use

expected production, sales volume, and inventory policy to project cost of goods sold. Next, managers project operating expenses such as selling and administrative expenses.

This chapter cannot cover all areas of budgeting in detail—entire books have been written on budgeting. However, the following presentation provides an overview of a budgeting procedure that many successful companies have used. We begin by discussing the planned operating budget or projected income statement.

The projected balance sheet, or financial budget, depends on many items in the projected income statement. Thus, the logical starting point in preparing a master budget is the projected income statement, or planned operating budget. However, since the planned operating budget shows the net effect of many interrelated activities, management must prepare several supporting budgets (sales, production, and purchases, to name a few) before preparing the planned operating budget. The process begins with the sales budget.

Sales budget The cornerstone of the budgeting process is the sales budget because the usefulness of the entire operating budget depends on it. The sales budget involves estimating or forecasting how much demand exists for a company's goods and then determining if a realistic, attainable profit can be achieved based on this demand. Sales forecasting can involve either formal or informal techniques, or both.

Formal sales forecasting techniques often involve the use of statistical tools. For example, to predict sales for the coming period, management may use economic indicators (or variables) such as the gross national product or gross national personal income, and other variables such as population growth, per capita income, new construction, and population migration.

To use economic indicators to forecast sales, a relationship must exist between the indicators (called independent variables) and the sales that are being forecast (called the dependent variable). Then management can use statistical techniques to predict sales based on the economic indicators.

Management often supplements formal techniques with informal sales forecasting techniques such as intuition or judgment. In some instances, management modifies sales projections using formal techniques based on other changes in the environment. Examples include the effect on sales of any changes in the expected level of advertising expenditures, the entry of new competitors, and/or the addition or elimination of products or sales territories. In other instances, companies do not use any formal techniques. Instead, sales managers and salespersons estimate how much they can sell. Managers then add up the estimates to arrive at total estimated sales for the period.

Usually, the sales manager is responsible for the sales budget and prepares it in units and then in dollars by multiplying the units by their selling price. The sales budget in units is the basis of the remaining budgets that support the operating budget.

Production budget The **production budget** considers the units in the sales budget and the company's inventory policy. Managers develop the production budget in units and then in dollars. Determining production volume is an important task. Companies should schedule production carefully to maintain certain minimum quantities of inventory while avoiding excessive inventory accumulation. The principal objective of the production budget is to coordinate the production and sale of goods in terms of time and quantity.

Companies using a just-in-time inventory system, need to closely coordinate purchasing, sales, and production. In general, maintaining high inventory levels allows for more flexibility in coordinating purchases, sales, and production. However, businesses must compare the convenience of carrying inventory with the cost of carrying inventory; for example, they must consider storage costs and the opportunity cost of funds tied up in inventory.

Firms often subdivide the production budget into budgets for materials, labor, and manufacturing overhead. Usually materials, labor, and some elements of manufacturing overhead vary directly with production within a given relevant range of production. Fixed manufacturing overhead costs do not vary directly with production but are constant in total within a relevant range of production. For example, fixed manufacturing overhead costs may be USD 150,000 when production ranges from 60,000 to 80,000 units. However, when production is 80,001 to 95,000 units, the fixed manufacturing overhead costs might be USD 250,000. To determine fixed manufacturing overhead costs accurately, management must determine the relevant range for the expected level of operations.

Selling, administrative, and other expense budgets (schedules) The costs of selling a product are closely related to the sales forecast. Generally, the higher the forecast, the higher the selling expenses. Administrative expenses are likely to be less dependent on the sales forecast because many of the items are fixed costs (e.g. salaries of administrative personnel and depreciation of administrative buildings and office equipment). Managers must also estimate other expenses such as interest expense, income tax expense, and research and development expenses. Once management has prepared the planned operating budget, the next task is to prepare the financial budget (or projected balance sheet).

Preparing a projected balance sheet, or financial budget, involves analyzing every balance sheet account. The beginning balance for each account is the amount on the balance sheet prepared at the end of the preceding period. Then, managers consider the effects of any planned activities on each account. Many accounts are affected by items appearing in the operating budget and by either cash inflows or outflows. Cash inflows and outflows usually appear in a cash budget discussed later in the chapter.

The complexities encountered in preparing the financial budget often require the preparation of detailed schedules. These schedules analyze such things as planned accounts receivable collections and balances, planned material purchases, planned inventories, changes in all accounts affected by operating costs, and the amount of federal income taxes payable. Dividend policy, inventory policy, financing policy and constraints, credit policy, and planned capital expenditures also affect the amounts in the financial budget.

An accounting perspective:

Business insight

To a manager, a budget is like an architect's blueprints or a house builder's plans. Like the blueprints, a budget shows the details of each part of the plan and how the various parts fit together into the overall plan. Production people focus on production plans, salespeople focus on sales plans, and financial people focus on projected cash receipts and disbursements. The general manager, like the house builder, must be able to see the big picture and tie all of the pieces together.

The master budget illustrated

Earlier this chapter discussed general concepts relating to the preparation of a master budget. This section illustrates the step-by-step preparation of a master budget for 2010 for Leed Company, which manufactures low-priced running shoes.

A company develops its planned operating budget in units rather than dollars. Because revenues and many expenses vary with volume, they can be forecasted more easily after the company estimates sales and production quantities.

To illustrate this step, assume that Leed's management forecasts sales for the year 2010 at 100,000 units (each pair of shoes is one unit). Quarterly sales are expected to be 20,000, 35,000, 20,000, and 25,000 units, reflecting higher demand for shoes in the late spring and again around Christmas.

Assuming the company's policy is to stabilize production, it would produce 100,000 units uniformly throughout the year. Therefore, production would be 25,000 units per quarter (100,000 units/four quarters). To simplify our example, assume the company has no beginning or ending work in process inventories (although it would be equivalent to assume that work in process inventories would remain at a constant amount throughout the year). Finished goods inventory on 2010 January 1, is 10,000 units. From these data, we can prepare the schedule of planned production and sales. Exhibit 2 shows the first two quarters.

**Leed Company
Planned production and Sales
(in units)**

	Quarter 2010 March 31	Ending 2010 June 30
Beginning finished goods inventory	10,000*	15,000
Add: Planned production	25,000	25,000
Units available for sale	35,000	40,000
Less: sales forecast	20,000	35,000
Ending finished goods inventory	15,000	5,000

* Actual on January 1

Exhibit 2: Leed Company: Planned production and sales (in units) for the first two quarters of 2010

Notice that if Leed wants to maintain a stable production of running shoes, it must allow the ending inventory to fluctuate if sales vary. Thus, the finished goods inventory is affected by the difference between production and sales. When establishing inventory policy, Leed's management has decided that it is less costly to deal with fluctuating inventories than with fluctuating production.

Sometimes we receive sales and ending inventory data described as a certain percentage of the next period's sales, and we must calculate the required level of production. Assume Leed Company wishes to have ending inventory of 15,000 units. We could use the following format to calculate planned production:

Sales forecast (units) – current quarter	20,000
Add: Planned ending finished goods inventory	15,000
Total units required for the period	35,000
Deduct: Beginning finished goods inventory	10,000
Planned production (units)	25,000

Next, Leed's management must introduce dollars into the analysis. To do this, management forecasts the expected selling price and costs. Exhibit 3, shows Leed's forecasted selling price and costs. Note that Leed's management classifies costs into variable or fixed categories and budgets accordingly. As noted earlier, **variable costs** vary in total directly with production or sales. **Fixed costs** are unaffected in total by the relative level of production or sales.

Leed Company
Budget Estimates of selling price and costs
For quarters ending March 31 and 2010
June 30

Forecasted selling price	\$ 20
Manufacturing costs:	
Variable (per unit manufactured):	
Direct materials	2
Direct labor	6
Manufacturing overhead	1
Fixed overhead (total each quarter)	75,000
Selling and administrative expenses:	
Variable (per unit sold)	2
Fixed (total each quarter)	100,000

Exhibit 3: Leed Company: Budget estimate of selling price and costs

Management must now prepare a schedule to forecast cost of goods sold, the next major amount in the planned operating budget. Exhibit 4, shows this schedule. Notice that the beginning finished goods inventory amount for the quarter ending March 31 is the amount shown on the 2009 December 31, year-end balance sheet (see Exhibit 9). From the data in Exhibit 3, management calculates the cost of goods manufactured using the variable costs of production plus an allocated amount of fixed manufacturing overhead (USD 75,000/25,000 units). The amount of ending finished goods inventory is the number of units determined to be in ending inventory (from Exhibit 2) times the cost per unit manufactured during the period.

Leed Company
Planned cost of goods sold

	Quarter 2010 March 31	Ending 2010 June 30
Beginning finished goods inventory	\$130,000*	\$180,000
Cost of goods manufactured:		
Direct materials (25,000 x \$2)	\$ 50,000	\$ 50,000
Direct labor (25,000 x \$6)	150,000	150,000
Variable manufacturing overhead (25,000 x \$1)	25,000	25,000
Fixed manufacturing overhead (per Exhibit 3)	75,000	75,000
Cost of goods manufactured (25,000 units at \$12)	\$300,000	\$300,000
Cost of goods available for sale	\$430,000	\$480,000
Ending finished goods inventory:		
(15,000 at \$12)†	180,000	
(5,000 at 12)		60,000
Cost of goods sold	\$250,000	\$420,000

* Actual on January 1 (10,000 at \$13);
see balance sheet Exhibit 9.

† First in, first-out procedure assumed.

Exhibit 4: Leed Company: Planned cost of goods sold

After managers forecast cost of goods sold, they prepare a separate budget for all selling and administrative expenses. Several supporting schedules may be prepared for items such as advertising expense, office expense, and payroll department expense. Although we do not show the schedules to support budgeted selling and administrative expenses here, note the total selling and administrative expenses for each of the first two quarters in the planned operating budget in Exhibit 5.

Exhibit 5 shows the operating budget for Leed Company. We have discussed and explained all of the items appearing in the planned operating budget except the income tax accrual. State and federal income taxes are budgeted for Leed Company at an assumed rate of 40 per cent of income before income taxes.

If the planned operating budget does not show the desired net income, managers must formulate new operating plans and develop a new budget. The purpose of preparing a planned operating budget is to gain some knowledge of the results of a period's activities before they actually occur.

A company seldom operates at the level of operations assumed in preparing the planned operating budget. After the company knows the results of actual operations, management compares actual expenses with budgeted expenses at the actual level of operations. To facilitate adjusting the budgeted items to the actual level of operations, management sometimes prepares in advance flexible budgets for the entire operating budget or for certain expenses. The next section discusses these flexible operating budgets and shows how companies prepare budget variances.

Early in the chapter, you learned that a budget should be adjusted for changes in assumptions or variations in the level of operations. Managers use a technique known as flexible budgeting to deal with budgetary adjustments. A **flexible operating budget** is a special kind of budget that provides detailed information about budgeted expenses (and revenues) at various levels of output.

A broader perspective: Planning in a changing environment

Few industries have changed as much in the past decade as the telephone industry. The old-fashioned phone company monopoly is over; it now faces intense competition from new technologies ranging from wireless telephones to free audio and video calls over the Internet. Many people no longer have land line phones and only use wireless phones. Indeed, the industry has been transformed by rapidly changing technology and accompanying changes in consumer behavior.

Verizon Communications, Inc. provides telecommunications services. Its old approach to planning and budgeting was not dynamic and creative enough to deal with the new competitive environment. To start thinking about planning in the new environment, the company's managers met to discuss the company's basic values. These managers developed such values as respect and trust in each other, excellence, profitable growth, individual fulfillment, and integrity as the foundation for the company's goals and plans. Management then established corporate goals along the lines of these values, such as profit growth goals, and goals for achieving excellence in customer service, taking the changing competitive environment into account.

Employee participation in setting goals, planning, and budgeting has been key to Verizon Communications, Inc. in communicating corporate values and goals. To communicate the company's goals, top management wrote down the company's basic business problems and the steps they wanted to take to solve these problems. This action put Verizon's goals in terms that employees could understand. After this communication step, employees knew better how to relate their day-to-day work activities to the big picture, namely, ultimate corporate objectives.

**Leed Company
Planned operating budgets**

	Quarter 2010 March 31	Ending 2010 June 30
Forecasted sales (20,000 and 35,000 at \$20, per Exhibit 2 and Exhibit 3)	\$400,000	\$700,000
Cost of goods sold (per Exhibit 4)	250,000	420,000
Gross margin	\$150,000	\$280,000
Selling and administrative expenses:		
Variable (20,000 and 35,000 at \$2,, per Exhibit 3)	\$ 40,000	\$ 70,000
Fixed (per Exhibit 3)	100,000	100,000
Total selling and administrative expenses	\$140,000	\$170,000
Income before income taxes	\$ 10,000	\$110,000
Deduct: Estimated income taxes (assumed to be 40%)	4,000	44,000
Net income	\$ 6,000	\$ 66,000

Exhibit 5: Leed Company: Planned operating budgets

Exhibit 6 shows a flexible budget for Leed Company's manufacturing overhead costs at various levels of output. To keep the example simple, we assume that the first four costs are strictly variable, starting at zero. On the other hand, the last two costs, depreciation and supervision, are fixed costs in this example because they are assumed to be constant over the entire relevant range of activity.

Leed Company Flexible budget for manufacturing overhead					
Element of manufacturing overhead	Volume (per cent Of Capacity)*				
	70%	80%	90%	100%	
Units	17,500	20,000	22,500	25,000	
Supplies	\$ 1,400	\$ 1,600	\$ 1,800	\$ 2,000	
Power	7,000	8,000	9,000	10,000	<---Variable portion is \$25,000
Insurance	4,200	4,800	5,400	6,000	
Maintenance	4,900	5,600	6,300	7,000	
Depreciation	18,000	18,000	18,000	18,000	<--- Fixed portion is \$75,000
Supervision	57,000	57,000	57,000	57,000	
	\$ 92,500	\$ 95,000	\$ 97,500	\$ 100,000	

*Capacity is 25,000 units per three-month period.

Exhibit 6: Leed Company: Flexible budget for manufacturing overhead

Leed's management could prepare a similar flexible budget for selling and administrative expenses with supporting schedules for each expense item. Using flexible budgeting, a company calculates variable expenses for various levels of sales volume, while fixed costs remain constant within the relevant range.

Budget variances When management uses a flexible budget to appraise a department's performance, it bases the evaluation on the amounts budgeted for the level of activity actually experienced. The difference between actual costs incurred and the flexible budget amount for that same level of operations is called a **budget variance**. Budget variances can indicate a department's or company's degree of efficiency, since they emerge from a comparison of what was with what should have been.

To illustrate the computation of budget variances, assume that Leed's management prepared an overhead budget based on an expected volume of 100 per cent, or 25,000 units. At this level of production, the budgeted amount for supplies is USD 2,000. By the end of the period, Leed has used USD 1,900 of supplies. Our first impression is that a favorable variance of USD 100 exists.

However, if Leed's actual production for the period was only 22,500 units (90 per cent of capacity), the company actually has an unfavorable variance of USD 100. Why? Because at 90 per cent of capacity, according to the flexible operating budget, only USD 1,800 of supplies should have been used. Consequently, it appears that Leed used supplies inefficiently.

To give another example using the data in Exhibit 6, Leed's management may have budgeted maintenance at USD 5,600 for a given period assuming the company planned to produce 20,000 units (80 per cent of operating capacity). However, Leed's actual maintenance costs may have been USD 6,200 for the period. This result does not necessarily mean that Leed had an unfavorable variance of USD 600. The variance depends on actual production volume.

Assume once again that Leed actually produced 22,500 units during the period. The company had budgeted maintenance costs at USD 6,300 for that level of production. Therefore, there would actually be a favorable variance of USD 100 (USD 6,300 - USD 6,200).

Flexible budgets often show budgeted amounts for every 10 per cent change in the level of operations, such as at the 70 per cent, 80 per cent, 90 per cent, and 100 per cent levels of capacity. However, actual production may fall between the levels shown in the flexible budget. If so, the company can find the budgeted amounts at that level of operations using the following formula:

Budgeted amount = Budgeted fixed portion of costs + [Budgeted variable portion of cost per unit X Actual units of output]

Flexible operating budget and budget variances illustrated As stated earlier, a flexible operating budget provides detailed information about budgeted expenses at various levels of activity. The main advantage of using a flexible operating budget along with a planned operating budget is that management can appraise performance on two levels. First, management can compare the actual results with the planned operating budget, which enables management to analyze the deviation of actual output from expected output. Second, given the actual level of operations, management can compare actual costs at actual volume with budgeted costs at actual volume. The use of flexible operating budgets gives a valid basis for comparison when actual production or sales volume differs from expectations.

Using the data from Exhibit 3, Exhibit 7 and Exhibit 8, present Leed's detailed planned operating budget and flexible operating budget for the quarter ended 2010 March 31. The planned operating budget was based on a sales forecast of 20,000 units and a production forecast of 25,000 units. Exhibit 7 and Exhibit 8 show actual sales of 19,000 units and actual production of 25,000 units. (As is typically the case, the budgeted and actual amounts are not equal.) The actual selling price was USD 20 per unit, the same price that management had forecasted.

Leed Company
Comparison of planned operating budget
and actual results
For quarter ended 2010 March 31

	Planned budget	Actual
Sales (budgeted 20,000 units, actual 19,000 units)	\$400,000	\$380,000
Cost of goods sold:		
Beginning finished goods inventory	\$130,000	\$130,000
Cost of goods manufactured (25,000 units):		
Direct materials	\$ 50,000	\$ 62,500
Direct labor	150,000	143,750
Variable manufacturing overhead	25,000	31,250
Fixed manufacturing overhead	75,000	75,000
Cost of goods manufactured	\$300,000	\$312,500
Cost of goods available for sale	\$430,000	\$442,500
Ending finished goods inventory	180,000	200,000
Cost of goods sold	\$250,000	\$242,500
Gross margin	\$150,000	\$137,500
Selling and administrative expenses:		
Variable	\$ 40,000	\$ 28,500
Fixed	100,000	95,000
Total selling and administrative expenses	\$ 140,000	\$123,500
Income before income taxes	\$ 10,000	\$ 14,000
Deduct: Estimated income taxes (40%)	4,000	5,600
Net income	\$ 6,000	\$ 8,400

Exhibit 7: Leed Company: Comparison of planned operating budget and actual results

In Exhibit 7 we compare the actual results with the planned operating budget. Comparison of actual results with the planned operating budget yields some useful information because it shows where actual performance deviated from planned performance. For example, sales were 1,000 units lower than expected, sales revenue was USD 20,000 less than expected, gross margin was USD 12,500 less than expected, and net income was USD 2,400 more than expected.

The comparison of actual results with the planned operating budget does not provide a basis for evaluating whether or not management performed efficiently at the actual level of operations. For example, in Exhibit 7, the cost of goods sold was USD 7,500 less than expected. The meaning of this difference is not clear, however, because the actual cost of goods sold relates to the 19,000 units actually sold, while the planned cost of goods sold relates to the 20,000 units expected.

A company makes a valid analysis of expense controls by comparing actual results with a flexible operating budget based on the levels of sales and production that actually occurred. Exhibit 8 shows the comparison of Leed's flexible operating budget with the actual results. Note that the flexible budget in Exhibit 8 is made up of several pieces. The flexible budget amounts for sales revenue and selling and administrative expenses come from a flexible sales budget (not shown) for 19,000 units of sales.

Leed Company
Comparison of flexible operating
budget and actual results
For quarter ended 2010 March 31

	Flexible budget	Actual	Budget variance over (under)
Sales (19,000 units)	\$ 380,000	\$ 380,000	\$ -0-
Cost of goods sold:			
Beginning finished goods inventory	\$ 130,000	\$ 130,000	\$ -0-
Cost of goods manufactured (25,000 units):			
Direct materials	\$ 50,000	\$ 62,500	\$ (12,500)
Direct labor	150,000	143,750	(6,250)
Variable manufacturing overhead	25,000	31,250	6,250
Fixed manufacturing overhead	75,000	75,000	-0-
Cost of goods manufactured)	\$300,000	\$312,500	\$ 12,500
Cost of goods available for sale	\$430,000	\$442,500	\$ 12,500
Ending finished goods inventory	192,000	200,000	8,000
Cost of goods sold (19,000 units)	\$238,000	\$242,500	\$ 4,500
Gross margin	\$ 142,000	\$ 137,500	\$ (4,500)
Selling and administrative expenses:			
Variable	\$ 38,000	\$ 28,500	\$ (9,500)
Fixed	100,000	95,000	(5,000)
Total selling and administrative expenses	\$138,000	\$123,500	\$ (14,500)
Income before income taxes	\$ 4,000	\$ 14,000	\$ 10,000
Deduct: estimated taxes (40%)	1,600	5,600	4,000
Net income	\$ 2,400	\$ 8,400	\$ 6,000

Exhibit 8: Leed Company: Comparison of flexible operating budget and actual results

In comparisons such as these, if the number of units produced is equal to the number sold, many companies do not show their beginning and ending inventories in their flexible operating budgets. Instead, the flexible operating budget may show the number of units actually sold multiplied by the budgeted unit cost of direct materials, direct labor, and manufacturing overhead. This budget also shows actual costs for direct materials, direct labor, and manufacturing overhead for the number of units sold.

The comparison of the actual results with the flexible operating budget (Exhibit 8) reveals some inefficiencies for items in the cost of goods manufactured section. For instance, direct materials and variable overhead costs were considerably higher than expected. Direct labor costs, on the other hand, were somewhat lower than expected. Both variable and fixed selling and administrative expenses were lower than expected. Net income was USD 6,000 more than expected at a sales level of 19,000 units.

Now that Leed's management has prepared the operating budget (or projected income statement), it can prepare its financial budget. Remember that the financial budget is a projected balance sheet.

To prepare a projected balance sheet, Leed's management must analyze each balance sheet account. Managers take the beginning balance from the balance sheet at the end of the preceding period. Look at Exhibit 9, Leed Company's balance sheet as of 2009 December 31. Management must consider the effects of planned activities on these balances. Many accounts are affected by items in the planned operating budget, by cash inflows and outflows, and by policy decisions. Management uses the planned operating budget in Exhibit 5 and the other illustrations previously given to prepare Leed Company's financial budget for the first two quarters of 2010.

Leed Company
Balance sheet
2009 December 31

Assets

Current assets:

Cash	\$ 130,000
Accounts receivable	200,000

Inventories:		
Materials	\$ 40,000	
Finished goods	130,000	170,000
Prepaid expenses		20,000
Total current assets		\$ 520,000
Property, plant, and equipment:		
Land		\$ 60,000
Buildings	\$1,000,000	
Less: accumulated depreciation	400,000	600,000
Equipment	\$ 600,000	
Less: accumulated depreciation	180,000	420,000
Total property, plant, and equipment		\$ 1,080,000
Total assets		\$ 1,600,000
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 80,000	
Accrued liabilities payable	160,000	
Income taxes payable	100,000	
Total current liabilities	\$ 340,000	
Stockholders' equity:		
Capital stock 100,000 shares of \$10 par value)	\$ 1,000,000	
Retained earnings	260,000	
Total stockholders' equity	\$ 1,260,000	
Total liabilities and stockholders' equity	\$ 1,600,000	

Exhibit 9: Leed Company: Balance sheet at beginning of period

Accounts receivable Leed must prepare several new schedules to prepare a financial budget. The first of these schedules is the accounts receivable schedule in Exhibit 10. Assume that Leed will collect 60 per cent of the current quarter's sales in that quarter, and the remaining 40 per cent will be collected in the following quarter. Thus, collections for the first quarter will be USD 440,000. The USD 440,000 equals 60 per cent of budgeted sales of USD 400,000 for the first quarter plus the uncollected sales of the previous quarter [(0.6 X USD 400,000) + USD 200,000]. Second quarter collections would be USD 580,000 [(0.6 X USD 700,000) + USD 160,000]. We have simplified the illustration by assuming all sales are on credit, and that there are no sales returns or allowances, no discounts, and no uncollectible accounts.

**Leed company
Planned accounts receivable
collections and balances**

	Quarter 2010 March 31	Ending 2010 June 30
Planned balance at beginning of quarter	\$200,000*	\$160,000
Planned sales for period (per Exhibit 5)	400,000	700,000
Total	\$600,000	\$860,000
Projected collections during quarter (per discussion in text)	440,000	580,000
Planned balance at end of quarter	\$160,000	\$280,000

*Actual on January 1

Exhibit 10: Leed Company: Planned accounts receivable collections and balances

Inventories Leed's management must prepare a schedule of planned materials purchases and inventories. Planned usage and cost per unit of materials are from the planned cost of goods sold schedule (Exhibit 4). We assume no work in process inventories to simplify the illustration; there are only materials and finished goods inventories.

In Exhibit 11, we show a schedule of planned purchases and inventories of materials for Leed Company. Leed normally maintains its materials inventory at a level of one-half of next quarter's planned usage. The USD 40,000 beginning inventory was greater than normal because of a strike threat in the supplier company. This threat has

now passed, and the materials inventory is reduced at the end of the first quarter to the normal planned level. In Exhibit 4, we calculated the planned ending finished goods inventories.

**Leed Company
Planned materials purchases
and inventories**

	Quarter 2010 March 31	Ending 2010 June 30
Planned usage (25,000 x \$2) (per Exhibit 4)	\$50,000	\$50,000
Planned ending inventory (1/2 x 25,000 x2) (per discussion in text)	25,000	25,000
Planned materials available for use	\$ 75,000	\$75,000
Inventory at beginning of quarter	40,000*	25,000
Planned purchases for the quarter	\$35,000	\$50,000

*Actual on January 1

Exhibit 11: Leed Company: Planned materials purchases and inventories

Accounts affected by operating costs Leed's management would prepare individual schedules for each of the accounts affected by operating costs. For illustrative purposes, however, we prepare a schedule that combines all the accounts affected by materials purchases or operating costs. We assume that:

- All purchases of materials are made on account.
- Direct labor incurred is credited to Accrued Liabilities Payable.
- Manufacturing overhead incurred is credited to the following accounts:

	Quarter March 31	Ending June 30
Accounts payable	\$ 16,000	\$ 13,000
Accrued liabilities payable	60,000	64,000
Prepaid expenses	6,000	5,000
Accumulated depreciation – Building	5,000	5,000
Accumulated depreciation – Equipment	13,000	13,000
Total	\$100,000	\$100,000

- Selling and administrative expenses incurred are credited to the following accounts:

	Quarter March 31	Ending June 30
Accounts payable	\$ 5,000	\$ 10,000
Accrued liabilities payable	130,000	154,000
Prepaid expenses	2,000	3,000
Accumulated depreciation – Building	1,000	1,000
Accumulated depreciation – Equipment	2,000	2,000
Total	\$140,000	\$170,000

- Planned cash payments are as follows:

	Quarter March 31	Ending June 30
Accounts payable	\$ 80,000	\$ 56,000
Accrued liabilities payable	330,000	354,000
Prepaid expenses	-0-	10,000
Total	\$410,000	\$420,000

Exhibit 12, shows analyses of the accounts credited as a result of these data. The illustration provides a considerable amount of information needed in constructing financial budgets for the quarters ended 2010 March 31, and 2010 June 30. The balances on both dates for Accounts Payable, Accrued Liabilities Payable, Prepaid Expenses (the only debit balance account shown), Accumulated Depreciation—Building, and Accumulated Depreciation—Equipment are computed in the schedule.

Income taxes payable A separate schedule could be prepared showing the changes in the state and federal Income Taxes Payable account, but in this example, a brief discussion suffices. Balances reported in the financial budgets assume that Leed pays one-half of the USD 100,000 liability in the 2009 December 31, balance sheet in

each of the first two quarters of 2010 (shown in Exhibit 15). The accrual for the current quarter is added (Exhibit 5). Thus, the balance on 2010 March 31, is USD 54,000, calculated as (USD 100,000 - USD 50,000 + USD 4,000). The balance on 2010 June 30, is USD 48,000, calculated as (USD 54,000 - USD 50,000 + USD 44,000). On June 30, the balance equals the accrual for the current year, USD 4,000 for the first quarter and USD 44,000 for the second quarter.

Analysis of accounts For quarters ending March 31 and 2010	Credited for materials Total debits	Leed Company	costs		Accumulated depreciation	
		Purchases and operating June 30 Accounts payable	Accrued liabilities payable	Prepaid expenses	Building	Equipment
Beginning balances, January 1 (per Exhibit 9)		\$ 80,000	\$ 160,000	\$ 20,000*	\$ 400,000	\$ 180,000
Purchases or operating costs, quarter ending March 31 (credits made to accounts shown at right):						
Direct materials (per Exhibit 11)	\$ 35,000*	\$ 35,000				
Direct labor (per Exhibit 4)	150,000*		\$ 150,000			
Manufacturing overhead (per Exhibit 4 and above schedules)	100,000*	16,000	60,000	\$ 6,000	\$ 5,000	\$ 13,000
Selling and administrative expenses (per Exhibit 5 and above schedules)	140,000*	5,000	130,000	2,000	1,000	2,000
Total	\$425,000	\$ 56,000	\$ 340,000	\$ 8,000	\$ 6,000	\$ 15,000
Total including January 1 balances		\$136,000	\$ 500,000	\$ 12,000*	\$ 406,000	\$ 195,000
Planned cash payments (debits made to accounts shown)		80,000*	330,000*			
Planned balances, March 31		\$ 56,000	\$ 170,000	\$ 12,000*	\$ 406,000	\$ 195,000
Purchases or operating costs, quarter ending June 30 (credits made to accounts shown at right):						
Direct materials (per Exhibit 11)	\$ 50,000*	\$ 50,000				
Direct labor (per Exhibit 4)	150,000*		\$ 150,000			
Manufacturing overhead (per Exhibit 4 and above schedules)	100,000*	13,000	64,000	\$ 5,000	\$ 5,000	\$ 13,000
Selling and administrative expenses (per Exhibit 5 and above schedules)	170,000*	10,000	154,000	3,000	1,000	2,000
Total	\$470,000	\$ 73,000	\$368,000	\$ 8,000	\$ 6,000	\$ 15,000
Total including March 31 balances		\$129,000	\$538,000	\$ 4,000*	\$412,000	\$210,000
Planned cash payments (debits made to accounts shown)		56,000*	354,000*	10,000*		
Planned balances, June 30		\$ 73,000	\$ 184,000	\$ 14,000*	\$ 412,000	\$ 210,000

*Debit balance or debit to account.

Exhibit 12: Leed Company: Analyses of accounts credited for materials purchases and operating costs

Cash budget After the preceding analyses have been prepared, sufficient information is available to prepare the cash budget and compute the balance in the Cash account on March 31 and 2010 June 30. Preparing a cash budget requires information about cash receipts and cash disbursements.

Cash receipts We can prepare the cash receipts schedule from the information used to compute the accounts receivable schedule (Exhibit 10). In Exhibit 13, we show the schedule of planned cash receipts for Leed Company.

Cash disbursements Companies need cash to pay for purchases, wages, rent, interest, income taxes, cash dividends, and most other expenses. We can obtain the amount of each cash disbursement from other budgets or schedules. Look at Exhibit 14, the cash disbursements schedule for Leed Company. You can see where the information came from, except for the payment of income taxes and dividends. Income taxes are assumed to be 40 per cent of income before income taxes. We assume that USD 20,000 of dividends will be paid in the first quarter and USD 40,000 in the second quarter.

**Leed Company
Planned Cash receipts**

	Quarter 2010 March 31	ending 2010 June 30
Collections on accounts receivable:		
From preceding quarter's sales	\$200,000	\$160,000 (0.4 x \$400,000)
From current quarter's sales	240,000 (0.6 x \$400,000)	420,000 (0.6 x \$700,000)
Total cash receipts (per Exhibit 10)	\$440,000	\$580,000

Exhibit 13: Leed Company: Planned cash receipts

**Leed Company
Planned cash disbursements**

	Quarter 2010 March 31	Ending 2010 June 30
Payment of accounts payable (per Exhibit 12)	\$ 80,000	\$ 56,000
Payment of accrued liabilities payable (per Exhibit 12)	330,000	354,000
Payment of income tax liability	50,000	50,000
Payment of dividends	20,000	40,000
Expenses prepaid (per Exhibit 12)	-0-	10,000
Total cash disbursements	\$480,000	\$510,000

Exhibit 14: Leed Company: Planned cash disbursements

Once cash receipts and disbursements have been determined, we can prepare a cash budget for Leed Company, as shown in Exhibit 15. The **cash budget** is a plan indicating expected inflows and outflows of cash.

**Leed company
Planned cash flows and cash balances**

	Quarter 2010 March 31	ending 2010 June 30
Planned balance at beginning of quarter	\$130,000*	\$ 90,000
Planned cash receipts:		
Collections of accounts receivable (per Exhibit 13)	440,000	580,000
	\$570,000	\$670,000
Planned cash disbursements:		
Payment of accounts payable (per Exhibit 12)	\$ 80,000	\$ 56,000
Payment of accrued liabilities payable (per Exhibit 12)	330,000	354,000
Payment of income tax liability	50,000	50,000
Payment of dividends	20,000	40,000
Expenses prepaid (per Exhibit 12)	-0-	10,000
Total cash disbursements	\$480,000	\$510,000
Planned balance at end of quarter	\$ 90,000	\$ 160,000

*Actual on January 1.

Exhibit 15: Leed Company: Planned cash flows and cash balances

This cash budget helps management to decide whether enough cash will be available for short-term needs. If a company's cash budget indicates a cash shortage at a certain date, the company may need to borrow money on a

short-term basis. If the company's cash budget indicates a cash excess, the company may wish to invest the extra funds for short periods to earn interest rather than leave the cash idle. Knowing in advance that a possible cash shortage or excess may occur allows management sufficient time to plan for such occurrences and avoid a cash crisis.

The preparation of Leed's financial budget for the quarters ending March 31 and June 30 (Exhibit 16) completes the master budget. Management now has information to help appraise the policies it has adopted before implementing them. If the master budget shows the results of these policies to be unsatisfactory, the company can change its policies before serious problems arise.

Leed Company
Projected balance sheet
As of March 31 and 2010 June 30

	2010 March 31	2010 June 30
Assets		
Current assets:		
Cash (per Exhibit 15)	\$ 90,000	\$ 160,000
Accounts receivable (per Exhibit 10)	160,000	280,000
Inventories:		
Materials (per Exhibit 11)	25,000	25,000
Finished goods (per Exhibit 4)	180,000	60,000
Prepaid expenses (per Exhibit 12)	12,000	14,000
Total current assets	\$ 467,000	539,000
Property, plant, and equipment:		
Land (per Exhibit 9)	\$ 60,000	\$ 60,000
Buildings, net (\$1,000,000 less accumulated depreciation of \$406,000 and \$412,000) (per Exhibit 9 and Exhibit 12)	594,000	588,000
Equipment, net (\$600,000 less accumulated depreciation of \$195,000 and \$210,000) (per Exhibit 9 and Exhibit 12)	405,000	390,000
Total property, plant, and equipment	\$1,059,000	\$1,038,000
Total assets	\$1,526,000	\$1,577,000
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable (per Exhibit 12)	\$ 56,000	\$ 73,000
Accrued liabilities payable (per Exhibit 12)	170,000	184,000
Income taxes payable (per discussion in the text)	54,000	48,000
Total current liabilities	\$ 280,000	\$ 305,000
Stockholders' equity:		
Capital stock (100,000 shares of \$10 par value) (per Exhibit 9)	\$1,000,000	\$1,000,000
Retained earnings (see footnotes below)	246,000*	272,000†
Total stockholders' equity	\$1,246,000	\$1,272,000
Total liabilities and stockholders' equity	\$1,526,000	\$ 1,577,000
* \$260,000 (per Exhibit 9) + Income of \$6,000 – Dividends of \$20,000.		
† \$246,000 + Income of \$66,000 – Dividends of \$40,000.		

Exhibit 16: Leed Company: Projected balance sheet

For example, Leed Company's management had a policy of stable production each period. The master budget shows that production can be stabilized even though sales fluctuate widely. However, the planned ending inventory at June 30 may be considered somewhat low in view of the fluctuations in sales. Management now knows this in advance and can take corrective action if necessary.

An accounting perspective:

Uses of technology

Imagine the difficulty of coordinating budgets in companies having worldwide operations, companies such as PepsiCo and BP. BP has oil and gas exploration, production, and marketing facilities in various countries. The BP plant in Singapore, for example, has to transmit its budget information to corporate headquarters in London, where managers coordinate the budgets of various operations worldwide, request additional information, require revisions in the budgets, and otherwise interact constantly with far-flung operations. Recent advances in telecommunications networks and collaboration software have made this process much faster and easier. Managers in the Singapore plant of BP can get reactions from corporate headquarters almost immediately. Corporate headquarters can get answers to its questions fast and can coordinate the budgets from various worldwide operations quickly.

Budgeting in merchandising companies

Budget preparation for merchandising companies and service companies is similar to budgeting for manufacturing companies. This section discusses budgeting in merchandising companies.

Throughout this chapter, we have focused on budgeting in a manufacturing company. Suppose managers in a retail merchandising business, such as a dress shop or a furniture store, prepare a budget. In this case, the company prepares a purchases budget instead of a production budget. To compute the purchases for each quarter, management must estimate the cost of the goods to be sold during the quarter and the inventory required at the end of the quarter.

Suppose Strobel Furniture Company prepared a sales budget like the one in Exhibit 17. Assume the company maintains sufficient inventory to cover one-half of the next quarter's sales. Cost of goods sold is 55 per cent of sales. The ending inventory on 2009 December 31, was USD 8,250. The purchases budget can now be prepared, as shown in Exhibit 18. For the first quarter of 2010, notice that the ending inventory is one-half of the second quarter's cost of goods sold [$0.5 \times (0.55 \times \text{USD } 80,000) = \text{USD } 22,000$].

Strobel can now use the information in its purchases budget to prepare the cost of goods sold section of the operating budget, to prepare cash disbursements schedules, and to prepare the inventory and accounts payable amounts in the financial budget.

Strobel Furniture Sales budget For quarters ending through 2011 March 31		Company 2010 March 31, 2010 September 30 2010 December 31 2011 March 31		
2010 March 31	2010 June 30	2010 September 30	2010 December 31	2011 March 31
\$30,000	\$80,000	\$50,000	\$90,000	\$40,000

Exhibit 17: Strobel furniture company: Sales budget

	Strobel Furniture Purchase budget For quarters ending 2010 December 31 2010 March 31	Company March 31 Through 2010 June 30	2010 September 30	2010 December 31
Ending inventory desired*	\$22,000	\$13,750	\$24,750	\$11,000
Cost of goods sold (55% of sales)	16,500	44,000	27,500	49,500
Total	\$38,500	\$57,750	\$52,520	\$60,500
Less: beginning inventory	8,250	22,000	13,750	24,750
Purchases required	\$30,250	\$35,750	\$38,500	\$35,750
*Next period's sales x 55% x 50%				

Exhibit 18: Strobel furniture company: Purchases budget

Budgeting in service companies

The concepts discussed in this chapter are equally applicable to service companies. Service firms have service revenues and operating expenses that must be budgeted. Projected income statements and balance sheets can be prepared for service companies using the techniques described in this chapter.

Additional concepts related to budgeting

Two additional concepts that affect budgeting are sometimes used in industry. These concepts are just-in-time inventory systems and zero-base budgeting.

Recall that the just-in-time inventory system provides that materials are bought just in time to be put into the manufacturing process; small parts, or subparts, are purchased just in time to be assembled into a final product; and goods are produced and delivered just in time to be sold.

The overall purpose of the just-in-time inventory system is to decrease, or in some cases eliminate, inventories in a company. By eliminating inventory, companies reduce the buffer stock between purchasing, production, and sales. Consequently, companies using just-in-time inventory must budget purchasing, production, and sales so the goods are purchased just in time for production and produced just in time for sales.

Zero-base budgeting became popular in the 1970s, particularly when President Jimmy Carter supported it for state and federal governmental units. It has received less attention since then.

Under **zero-base budgeting**, managers in a company start each year with zero budget levels and must justify every dollar that appears in the budget. Managers do not assume any costs incurred in previous years should be incurred this year. Each manager prepares decision packages that describe the nature and cost of tasks that can be performed by that unit and the consequences of not performing each task. Top organization officials rank the decision packages and approve those that they believe are most worthy. A major drawback to the use of this concept is the massive amounts of paperwork and time needed to prepare and rank decision packages, especially in large organizations.

This chapter discussed the general concepts of budgeting.

The next chapter discusses standard costs, which are used in budgeting and are important in controlling operations.

Understanding the learning objectives

- A budget is a plan showing the company's objectives and how management intends to acquire and use resources to attain those objectives.

- Several kinds of budgets are responsibility, capital, master, planned operating, and financial budgets.
- A budget: (1) shows management's operating plans for the coming periods; (2) formalizes management's plans in quantitative terms; (3) forces all levels of management to think ahead, anticipate results, and take action to remedy possible poor results; and (4) may motivate individuals to strive to achieve stated goals.
- Other benefits are: business activities are better coordinated; managers become aware of other managers' plans; employees may become cost conscious and try to conserve resources; the company reviews its organization plan and changes it when necessary; and managers foster a vision that might not otherwise be developed.
- Top management support: All management levels must be aware of the budget's importance to the company and must know that the budget has top management's support.
- Participation in goal setting: Employees are generally more likely to strive toward organizational goals if they participate in setting them.
- Communicating results: People should be promptly and clearly informed of their progress.
- Flexibility: The operating budget should be restated if the basic assumptions underlying the budget change during the year. For control purposes, after the actual level of operations is known, the actual revenues and expenses should be compared to the expected performance at that level of operations.
- Follow-up: Managers should check budgets continuously and correct them whenever necessary because budgets deal with projections and estimates of future operating results, cash flows, and financial position.
- Managers develop a planned operating budget in units rather than dollars. Managers forecast sales units for the year. Then, based on the sales forecast and the company's inventory policy, they forecast production requirements in units.
- Next, dollars must be introduced into the analysis. A forecast of expected selling prices must be made, and costs must be analyzed.
- Management then prepares a schedule to forecast cost of goods sold.
- After forecasting the cost of goods sold, management prepares a separate budget for all selling and administrative expenses. Several supporting schedules may be involved for other various expenses.
- The totals on the separate budgets are combined to form the planned operating budget, which shows the budgeted income after income taxes for a certain period.
- A flexible operating budget is a special kind of budget that provides detailed information about budgeted expenses (and revenues) at various levels of output.
- This budget shows the effect that different volume changes, in per cents of capacity, have on the expenses of a company.
- Preparing a financial budget involves analyzing every balance sheet account in light of the planned activities expressed in the income statement.
- Managers usually prepare a separate cash budget to show sources, uses, and net changes in cash for the period.
- Supporting budgets also may be developed for accounts receivable, inventories, accounts affected by operating costs, and federal income taxes payable.

Demonstration problem

During January 2010, Ramos Company plans to sell 40,000 units of its product at a price of USD 30 per unit. The company estimates selling expenses to be USD 120,000 plus 2 per cent of sales revenue. Administrative expenses are estimated to be USD 90,000 plus 1 per cent of sales revenue. Federal income tax expense is estimated to be 40 per cent of income before federal income taxes.

Ramos plans to produce 50,000 units during January with estimated variable costs per unit as follows: USD 3 for material, USD 7.50 for labor, and USD 4.50 for variable overhead. Estimated fixed overhead cost is USD 60,000 per month. The finished goods inventory at 2010 January 1, is 8,000 units with a cost per unit of USD 15. The company uses FIFO inventory procedure.

Prepare a projected income statement for January 2010.

Solution to demonstration problem

Ramos Company Projected income statement For January 2010		
Sales (40,000 x \$30)		\$1,200,000
Cost of goods sold (see planned cost of goods sold)		638,400
Gross margin		\$561,600
Selling expenses:		
Fixed	\$120,000	
Variable (0.02 x \$120,000)	24,000	
Administrative expenses:		
Fixed	90,000	
Variable (0.01 x \$1,200,000)	12,000	246,000
Income before federal income taxes		\$315,600
Deduct: Federal income tax expense (40%)		126,600
Net income		\$189,360
Ramos Company Planned cost of goods sold		
Beginning finished goods inventory (8,000 x \$15)		\$ 120,000
Cost of goods manufactured:		
Direct materials (50,000 x \$3)	\$150,000	
Direct labor (50,000 x \$7.50)	375,000	
Variable manufacturing overhead (50,000 x \$4.50)	225,000	
Fixed manufacturing overhead	60,000	
Cost of goods manufactured (50,000 x \$16,20)		810,000
Cost of goods available for sale		\$ 930,000
Ending finished goods inventory (18,000 x \$16,20)		291,600
Cost of goods sold		\$ 638,400

Key terms*

Budget A plan showing a company's objectives and proposed ways of attaining the objectives. Major types of budgets are (1) master budget, (2) responsibility budget, and (3) capital budget.

Budgeting The coordination of financial and nonfinancial planning to satisfy an organization's goals.

Budget variance The difference between an actual cost incurred (or revenue earned) at a certain level of operations and the budgeted amount for the same level of operations.

Cash budget A plan indicating expected inflows (receipts) and outflows (disbursements) of cash; it helps management decide whether enough cash will be available for short-term needs.

Financial budget The projected balance sheet portion of a master budget.

Fixed costs Costs that are unaffected in total by the relative level of production or sales.

Flexible operating budget A special budget that provides detailed information about budgeted expenses (and revenues) at various levels of output.

Just-in-time inventory system Provides that goods are produced and delivered just in time to be sold.

Master budget The projected income statement (planned operating budget) and projected balance sheet (financial budget) showing the organization's objectives and proposed ways of attaining them; includes supporting budgets for various items in the master budget; also called master profit plan. The master budget is the overall plan of the enterprise and ideally consists of all of the various segmental budgets.

Participatory budgeting A method of preparing the budget that includes the participation of all levels of management responsible for actual performance.

Planned operating budget The projected income statement portion of a master budget.

Production budget A budget that takes into account the units in the sales budget and the company's inventory policy.

Variable costs Costs that vary in total directly with production or sales and are a constant dollar amount per unit of output over different levels of output or sales.

Zero-base budgeting Managers in a company start each year with zero budget levels and must justify every dollar that will appear in the budget.

*Some terms listed in earlier chapters are repeated here for your convenience.

Self-test

True-false

Indicate whether each of the following statements is true or false.

Budgets are based on more than past results.

Cash budgets may cover a week or a month, sales and production budgets a month, a quarter, or a year, and general operating budgets may cover a quarter or a year.

The planned operating budget is developed first in units and then in dollars.

Planned operating budgets based on planned activity levels and flexible budgets are the same if planned activity levels and actual activity levels are not the same.

Multiple-choice

Select the best answer for each of the following questions.

Which of the following best describes some of the benefits related to the preparation and use of budgets:

- Business activities are better coordinated.
- Managers become aware of other managers' plans.
- Employees may become cost conscious and try to conserve resources.
- Managers may review the organizational plan and make necessary changes more often.
- All of the above.

When preparing a projected income statement, which of the following budgets is prepared first?

- Projected cost of goods sold budget.
- Selling and administrative budget.
- Sales budget.
- Financial budget.

Fixed costs are USD 60,000, variable cost per unit is USD 1.20, and budgeted units of output are 200,000 units.

Determine the budgeted production costs.

- USD 300,000.
- USD 360,000.
- USD 240,000.

d. USD 276,000.

Production costs (including USD 30,000 of fixed costs) are budgeted at USD 150,000 for an expected output of 100,000 units. Actual output was 90,000 units, while actual costs were USD 142,500. What is the budget variance and is it favorable or unfavorable?

- a. USD 5,500 unfavorable.
- b. USD 6,500 favorable.
- c. USD 6,500 unfavorable.
- d. USD 4,500 unfavorable.

Now turn to “Answers to self-test” at the end of the chapter to check your answers.

Questions

- What are three purposes of budgeting?
- What are the purposes of a master, planned operating, and financial budget?
- How does the management by exception concept relate to budgeting?
- What are five basic principles which, if followed, should improve the probability of preparing a meaningful budget? Why is each important?
- What is the difference between an imposed budget and a participatory budget?
- Define and explain a budget variance.
- What are the two major budgets in the master budget? Which should be prepared first? Why?
- Distinguish between a master budget and a responsibility budget.
- The budget established at the beginning of a given period carried an item for supplies expense in the amount of USD 40,000. At the end of the period, the supplies used amounted to USD 44,000. Can it be concluded from these data that there was an inefficient use of supplies or that care was not exercised in purchasing the supplies?
- Management must make certain assumptions about the business environment when preparing a budget. What areas should be considered?
- Why is budgeted performance better than past performance as a basis for judging actual results?
- Describe the concepts of just-in-time inventory systems and zero-base budgeting.
- **Real world question** Refer to the financial statements for a publicly traded company. An industry analyst has asked you to forecast sales for each of the next five years (after the current year). Assume sales increase each year by the same percentage. That is, the percentage increase for next year is expected to be the same as it was last year. What is your estimate of sales in each of the next five years?
- **Real world question** Refer to your forecasts of sales for the company in the previous question. Evaluate the simple forecasting method you were asked to use in that question. What additional factors should be used in forecasting sales?
- **Real world question** Do you think the sales for a particular grocery store in your neighborhood will go up, go down, or stay the same next year compared to this year? Give your answer in sales volume, then give it in sales dollars.

- **Real world question** The text refers to the benefits of participation in budgeting. Assume your college bookstore is preparing a budget for next year and wants to include employees in the budgeting process. Give examples of the people who should be included and state what information they could provide.

Exercises

Exercise A Hike n' Run Company has decided to produce 288,000 pairs of socks at a uniform rate throughout 2010. The sales department of Hike n' Run has estimated sales for 2010 according to the following schedule:

	Sales of pairs of socks
First quarter	76,800
Second quarter	62,400
Third quarter	72,000
Fourth quarter	100,800
Total for 2010	312,000

Assume the 2009 December 31, inventory is estimated to be 38,400 pairs of socks. Prepare a schedule of planned sales and production for the first two quarters of 2010.

Exercise B DePaul Company projects sales of 25,000 units during May at USD 6 per unit. Production costs are USD 1.80 per unit. Variable selling and administrative expenses are USD 0.60 per unit; fixed selling and administrative expenses are USD 60,000. Compute the budgeted income before income taxes.

Exercise C Skaters Plus Company plans to sell 90,000 skateboards next quarter at a price of USD 36 per unit. Production costs are USD 14.40 per unit. Selling and administrative expenses are: variable, USD 7.20 per unit; and fixed, USD 604,800 per quarter. What are the budgeted earnings for next quarter? (Do not consider federal income taxes.)

Exercise D Duke Corporation considers materials and labor to be completely variable costs. Expected production for the year is 50,000 units. At that level of production, direct materials cost is budgeted at USD 198,000, and direct labor cost is budgeted at USD 450,000. Prepare a flexible budget for materials and labor for possible production levels of 52,500, 60,000, and 67,500 units of product.

Exercise E Assume that in the previous exercise the actual production was 60,000 units, materials cost was USD 247,000, and labor cost was USD 510,000. What are the budget variances?

Exercise F Fixed production costs for Alexia Company are budgeted at USD 576,000, assuming 40,000 units of production. Actual sales for the period were 35,000 units, while actual production was 40,000 units. Actual fixed costs used in computing cost of goods sold amounted to USD 504,000. What is the budget variance?

Exercise G The shoe department of Noardstone's Department Store has prepared a sales budget for April calling for a sales volume of USD 75,000. The department expects to begin in April with a USD 50,000 inventory and to end the month with an USD 42,500 inventory. Its cost of goods sold averages 70 per cent of sales.

Prepare a purchases budget for the department showing the amount of goods to be purchased during April.

Problems

Problem A Joyce Corporation prepares monthly operating and financial budgets. The operating budgets for June and July are based on the following data:

	Units produced	Units sold
June	400,000	360,000
July	360,000	400,000

All sales are at USD 30 per unit. Direct materials, direct labor, and variable manufacturing overhead are estimated at USD 3, USD 6, and USD 3 per unit, respectively. Total fixed manufacturing overhead is budgeted at

USD 1,080,000 per month. Selling and administrative expenses are budgeted at USD 1,200,000 plus 10 per cent of sales, while federal income taxes are budgeted at 40 per cent of income before federal income taxes. The inventory at June 1 consists of 200,000 units with a cost of USD 17.10 each.

- a. Prepare monthly budget estimates of cost of goods sold assuming that FIFO inventory procedure is used.
- b. Prepare planned operating budgets for June and July.

Problem B The computation of operating income for Frisco Company for 2008 follows:

Sales		\$1,800,000	
Cost of goods manufactured and sold:			
Direct materials	\$360,000		
Direct labor	240,000		
Variable manufacturing overhead	120,000		
Fixed manufacturing overhead	240,000	960,000	
Gross margin			\$ 840,000
Selling expenses:			
Variable	\$132,000		
Fixed	168,000	300,000	
Administrative expenses:			
Variable	\$156,000		
Fixed	192,000	348,000	
Net operating income			\$ 192,000

An operating budget is prepared for 2009 with sales forecasted at a 25 per cent increase in volume. Direct materials, direct labor, and all costs labeled as variable are completely variable. Fixed costs are expected to continue except for a USD 24,000 increase in fixed administrative costs. Actual operating data for 2009 are:

Sales	\$2,160,000
Direct materials	444,000
Direct labor	288,000
Variable manufacturing overhead	148,800
Fixed manufacturing overhead	246,000
Variable selling expenses	186,000
Fixed selling expenses	157,200
Variable administrative expenses	198,000
Fixed administrative expenses	218,200

- a. Prepare a budget report comparing the 2009 planned operating budget with actual 2009 data.
- b. Prepare a budget report that would be useful in appraising the performance of the various persons charged with responsibility to provide satisfactory income. (Hint: Prepare budget data on a flexible basis and use the percentage by which sales were actually experienced.)
- c. Comment on the differences revealed by the two reports.

Problem C Use the following data to prepare a planned operating budget for Hi-Lo Company for the year ending 2009 December 31:

Plant capacity	100,000 units
Expected sales volume	90,000 units
Expected production	90,000 units
Actual production	90,000 units
Forecasted selling price	\$ 12,00 per unit
Actual selling price	\$ 13,50 per unit
Manufacturing costs:	
Variable (per unit):	
Direct materials	\$3.60
Direct labor	\$1.50
Manufacturing overhead	\$2.25
Fixed manufacturing overhead	\$108,000
Selling and administrative expenses:	
Variable (per unit)	\$1.20
Fixed	\$60,000

Assume no beginning or ending inventory. Federal income taxes are budgeted at 40 per cent of income before federal income taxes.

The actual operating data for the year ending 2009 December 31, follow:

Sales		\$1,080,000
Cost of goods sold:		
Direct materials	\$337,500	
Direct labor	135,000	
Variable manufacturing overhead	202,500	
Fixed manufacturing overhead	108,000	
Total	\$783,000	
Less: Ending inventory (\$783,000 x 10/90)	87,000	696,000
Gross margin		\$384,000
Selling expenses:		
Variable	102,000	
Fixed	72,000	174,000
Income before federal income taxes		\$210,000
Deduct: Federal income taxes at 40%		84,000
Net income		\$126,000

a. Prepare a planned operating budget for the year ended 2009 December 31, for part (1).

b. Using a flexible operating budget, analyze the efficiency of operations and comment on the company's sales policy for part (2).

Problem D Kim Company wants you to prepare a flexible budget for selling and administrative expenses. The general manager and the sales manager have met with all the department heads, who provided the following information regarding selling and administrative expenses:

The company presently employs 30 full-time salespersons with a base of USD 3,600 each per month plus commissions and 10 full-time salespersons with a salary of USD 6,000 each per month plus commissions. In addition, the company employs nine regional sales managers with a salary of USD 21,600 per month, none of whom is entitled to any commissions.

If sales volume exceeds USD 80 million per year, the company must hire four more salespersons, each at a salary of USD 3,600 per month plus commissions.

Sales commissions are either 10 per cent or 5 per cent of the selling price, depending on the product sold. Typically, a 10 per cent commission applies on 60 per cent of sales, and a 5 per cent commission applies on the remaining 40 per cent of sales.

Salespersons' travel allowances average USD 1,500 per month per salesperson (excluding managers).

Advertising expenses average USD 150,000 per month plus 3 per cent of sales.

Selling supplies expense is estimated at 1 per cent of sales.

Administrative salaries are USD 300,000 per month.

Other administrative expenses include the following:

Rent—USD 48,000 per month

Office supplies—2 per cent of sales

Other administrative expenses (telephone, etc.)—USD 12,000 per month

Prepare a flexible budget for selling and administrative expenses for sales volume of USD 36 million, USD 48 million, and USD 60 million per year.

Problem E Galaxy Lighting Company manufactures and sells lighting fixtures. Estimated sales for the next three months are:

September	\$350,000
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October	500,000
November	400,000

Sales for August were USD 400,000. All sales are on account. Galaxy Lighting Company estimates that 60 per cent of the accounts receivable are collected in the month of sale with the remaining 40 per cent collected the following month. The units sell for USD 30 each. The cash balance for September 1 is USD 100,000.

Generally, 60 per cent of purchases are due and payable in the month of purchase with the remainder due the following month. Purchase cost per unit for materials is USD 18. The company maintains an end-of-the-month inventory of 1,000 units plus 10 per cent of next month's unit sales.

Prepare a cash receipts schedule for September and October and a purchases budget for August, September, and October.

Problem F Refer to the previous problem. In addition to the information given, selling and administrative expenses paid in cash are USD 120,000 per month.

Prepare a monthly cash budget for September and October for Galaxy Lighting Company.

Alternate problems

Alternate problem A Cougars Company prepares monthly operating and financial budgets. Estimates of sales in units are made for each month. Production is scheduled at a level high enough to take care of current needs and to carry into each month one-half of the next month's unit sales. Direct materials, direct labor, and variable manufacturing overhead are estimated at USD 12, USD 6, and USD 4 per unit, respectively. Total fixed manufacturing overhead is budgeted at USD 480,000 per month. Sales for April, May, June, and July 2009 are estimated at 100,000, 120,000, 160,000, and 120,000 units. The inventory at 2009 April 1, consists of 50,000 units with a cost of USD 28.80 per unit.

- Prepare a schedule showing the budgeted production in units for April, May, and June 2009.
- Prepare a schedule showing the budgeted cost of goods sold for the same three months assuming that the FIFO method is used for inventories.

Alternate problem B Following is a summary of operating data of Bugs Company for the year 2008:

Sales		\$ 7,000,000
Cost of goods manufactured and sold:		
Direct materials	\$1,200,000	
Direct labor	1,100,000	
Variable manufacturing overhead	300,000	
Fixed manufacturing overhead	800,000	3,400,000
Gross margin		\$ 3,600,000
Selling expenses:		
Variable	\$ 300,000	
Fixed	400,000	700,000
		2,900,000
General and administrative expenses:		
Variable	\$ 100,000	
Fixed	1,200,000	1,300,000
Net operating income		\$ 1,600,000

Sales volume for 2009 is budgeted at 90 per cent of 2008 sales volume. Prices are not expected to change. The 2009 budget amounts for the various other costs and expenses differ from those reported in 2008 only for the expected volume change in the variable items. Actual operating data for 2009 follow:

Sales	\$5,800,000
Direct materials	1,300,000
Direct labor	1,100,000

Variable manufacturing overhead	300,000
Fixed manufacturing overhead	780,000
Variable selling expenses	270,000
Fixed selling expenses	290,000
Variable administrative expenses	110,000
Fixed administrative expenses	1,100,000

a. Prepare a budget report comparing the planned operating budget for 2009 with the actual results for that year.

b. Prepare a budget report that would be useful in pinpointing responsibility for the poor showing in 2009. (Hint: Prepare a flexible operating budget.)

Alternate problem C Use the following data for Andrea Company in preparing its 2009 planned operating budget:

Plant capacity	500,000 units
Expected sales volume	450,000 units
Expected production	500,000 units
Forecasted selling price	\$72 per unit
Variable manufacturing costs per unit:	
Direct materials	\$ 27.00
Direct labor	9.00
Manufacturing overhead	6.00
Fixed manufacturing overhead per period	\$900,000
Selling and administrative expenses:	
Variable (per unit)	\$ 3.00
Fixed (per period)	\$ 750,000

Assume no beginning inventory. Federal income taxes are budgeted at 40 per cent of income before income taxes.

The actual results for Andrea Company for the year ended 2009 December 31, follow. (Note: The actual sales price was USD 80 per unit. Actual unit production was equal to actual unit sales.)

Sales (500,000 units @ \$80 per unit)		\$40,000,000
Cost of goods sold:		
Direct materials	\$12,000,000	
Direct labor	4,400,000	
Variable manufacturing overhead	4,000,000	
Fixed manufacturing overhead	1,000,000	21,400,000
Gross margin		\$18,600,000
Selling and administrative expenses:		
Variable	\$ 1,400,000	
Fixed	800,000	2,200,000
Income before federal income taxes		\$16,400,000
Deduct: Federal income taxes		6,560,000
Net income		\$ 9,840,000

- Prepare a planned operating budget for the year ended 2009 December 31, for (1).
- Using a flexible operating budget, analyze the efficiency of operations. Comment on the results of 2009 and on the company's sales policy in (2).

Alternate problem D Rocklin Company gathered the following budget information for the quarter ending 2009 September 30:

Sales	\$540,000
Purchases	450,000
Salaries and wages	194,000
Rent	10,000
Supplies	8,000
Insurance	2,000
Other cash expenses	12,000

A cash balance of USD 36,000 is planned for July 1. Accounts receivable are expected to be USD 60,000 on July 1. All but one-half of 1 per cent of the July 1 Accounts Receivable balance will be collected in the quarter ending

September 30. The company's sales collection pattern is 95 per cent in the quarter of sale and 5 per cent in the quarter after sale. Accounts payable will be USD 30,000 on July 1 and will be paid during the coming quarter. The company's purchases payment pattern is 75 per cent in the quarter of purchase and 25 per cent in the quarter after purchase. Expenses are paid in the quarter in which they are incurred.

Prepare a cash budget for the quarter ending 2009 September 30.

Beyond the numbers—Critical thinking

Business decision case A Golden State Company has applied at a local bank for a short-term loan of USD 150,000 starting on 2009 October 1. The bank's loan officer has requested a cash budget from the company for the quarter ending 2009 December 31. The following information is needed to prepare the cash budget:

Sales	\$600,000
Purchases	350,000
Salaries and wages to be paid	125,000
Rent payments	7,000
Supplies (payments for)	4,500
Insurance payments	1,500
Other cash payments	22,000

A cash balance of USD 24,000 is planned for October 1. Accounts receivable are expected to be USD 48,000 on October 1. All of these accounts will be collected in the quarter ending December 31. In general, sales are collected as follows: 90 per cent in the quarter of sale, and 10 per cent in the quarter after sale. Accounts payable will be USD 480,000 on October 1 and will be paid during the quarter ending December 31. All purchases are paid in the quarter after purchase.

a. Prepare a cash budget for the quarter ending 2009 December 31. Assume that the USD 150,000 loan will be made on October 1 and will be repaid with interest at 10 per cent on December 31.

b. Will the company be able to repay the loan on December 31? If the company desires a minimum cash balance of USD 18,000, will the company be able to repay the loan as planned?

Ethics case B The state of California, USA faced large budget deficits. Meanwhile, officials in a particular community college district were looking for ways to spend the money that had been budgeted for the district. The community college was entering the last three months of the fiscal year with excess funds because the area had experienced a mild winter resulting in lower than usual utilities and maintenance costs.

At a budget meeting, one official commented, "You know what will happen if we do not spend all of our budget. The state will claim we do not need as much money next year. What happens if we have a hard winter next year? We will need every cent we can get!"

The community college's accounting manager commented, "We are legally entitled to spend all of the money this year that has been budgeted to us. I am concerned about the memorandum that we received requesting that we cut expenditures wherever possible to help reduce the state's deficit."

The first official responded, "That deficit is the state's problem, not ours. We would not have a deficit in the first place if the state administrators were able to estimate taxes and do a better job of budgeting. Let us deal with our problems and let them deal with theirs!"

Write a response from the point of view of the taxpayers of the state of California. Should the community college spend all of the money that had been budgeted for it?

Broader perspective C Refer to the Broader perspective, "Planning in a changing environment". Describe and evaluate Verizon Communications, Inc.'s new approach to planning. How would you advise company management to communicate the company's values and plans to employees?

Group project D In groups of three, develop a budget for an organization that publishes financial statements, such as The Coca-Cola Company or Maytag Corporation. Your budget should include three different types of projected income statements for the coming month, quarter, or year. These three income statements should be for optimistic, pessimistic, and expected scenarios. Collect or develop as much information as possible to prepare the budget. For example, to prepare a budgeted income statement for a publicly traded company such as Coca-Cola, look at previous annual reports and collect whatever additional information you can from news reports. Be sure to state the assumptions used in preparing the budget in a memorandum you write as a team. The heading of the memorandum should contain the date, to whom it is written, from whom, and the subject matter. Do not forget to include the three different projected income statements.

Group project E The chief executive officer (CEO) of Rigid Plastics Corporation remarked to a colleague, "I do not understand why other companies waste so much time in the budgeting process. I set our company goals, and everyone strives to meet them. What is wrong with that approach?" In groups of two or three students, write a memorandum to your instructor stating whether you agree with this comment or not and explain why. The heading of the memorandum should contain the date, to whom it is written, from whom, and the subject matter.

Group project F Multigoal Corporation has established a bonus plan for its employees. An employee receives a bonus if his or her department meets or is below the cost levels specified in the annual budget plan. If the department's costs exceed the budget, its employees earn no bonus. In groups of two or three students, write a memorandum to your instructor stating the problems that might arise with this bonus plan. The heading of the memorandum should contain the date, to whom it is written, from whom, and the subject matter.

Using the Internet—A view of the real world

Visit the website for a high technology company that provides recent annual reports. Examples include Intel Corporation, IBM, and Dell. Develop a budgeted income statement (operating budget) for the coming year and include three categories for optimistic, pessimistic, and expected scenarios. Collect or develop as much information as possible to prepare the budget. For example, look at previous annual reports and collect whatever additional information you can from news reports. Be sure to state the assumptions used in preparing the budget in a memorandum. The heading of the memorandum should contain the date, to whom it is written, from whom, and the subject matter. Do not forget to include the three different projected income statements.

Visit the website for a retail company that provides recent annual reports. Develop a budgeted income statement (operating budget) for the coming year and include three categories for optimistic, pessimistic, and expected scenarios. Collect or develop as much information as possible to prepare the budget. For example, look at previous annual reports and collect whatever additional information you can from news reports. Be sure to state the assumptions used in preparing the budget in a memorandum. The heading of the memorandum should contain the date, to whom it is written, from whom, and the subject matter. Do not forget to include the three different projected income statements.

Comprehensive problems

Wimerick Corporation prepares annual budgets by quarters. The company's post-closing trial balance as of 2010 December 31, is as follows:

	Debits	Credits
Cash	\$138,000	
Accounts receivable	360,000	
Allowance for uncollectible accounts		\$ 12,000
Inventories	156,000	
Prepaid expenses	12,000	
Furniture and equipment	180,000	
Accumulated depreciation – Furniture and equipment		12,000
Accounts payable		120,000
Accrued liabilities payable		36,000
Notes payable, 5% (due 2008)		480,000
Capital stock		300,000
Retained earnings (deficit)	114,000	
	\$960,000	\$960,000

All of the capital stock of the company was recently acquired by Juan Jackson. After the purchase, Jackson loaned substantial sums of money to the corporation, which still owes him USD 480,000 on a 5 per cent note. There are no accrued federal income taxes payable, but future earnings will be subject to income taxation.

Jackson is anxious to withdraw USD 120,000 from the corporation (as a payment on the note payable to him) but will not do so if it reduces the corporation's cash balance below USD 120,000. Thus, he is quite interested in the budgets for the quarter ending 2011 March 31.

Sales for the coming quarter ending 2011 March 31, are forecasted at USD 1,200,000; for the following quarter they are forecasted at USD 1,500,000. All sales are priced to yield a gross margin of 40 per cent. Inventory is to be maintained on hand at the end of any quarter in an amount equal to 20 per cent of the goods to be sold in the next quarter. All sales are on account, and 95 per cent of the 2010 December 31, receivables plus 70 per cent of the current quarter's sales will be collected during the quarter ending 2011 March 31.

Selling expenses are budgeted at USD 48,000 plus 6 per cent of sales; USD 24,000 will be incurred on account, USD 66,000 accrued, USD 27,000 from expiration of prepaid rent and prepaid insurance, and USD 3,000 from allocated depreciation.

Purchasing expenses are budgeted at USD 34,800 plus 5 per cent of purchases for the quarter; USD 9,000 will be incurred on account, USD 48,000 accrued, USD 13,800 from expired prepaid expenses, and USD 1,200 from allocated depreciation.

Administrative expenses are budgeted at USD 42,000 plus 2 per cent of sales; USD 3,000 will be incurred on account, USD 36,000 accrued, USD 13,200 from expired prepayments, and USD 1,800 from allocated depreciation. Uncollectible accounts are estimated at 1 per cent of sales.

Interest accrues at 5 per cent annually on the notes payable and is credited to Accrued Liabilities Payable.

All of the beginning balances in Accounts Payable and Accrued Liabilities Payable, plus 80 per cent of the current credits to Accounts Payable, and all but USD 30,000 of the current accrued liabilities will be paid during the quarter. An USD 18,000 insurance premium is to be paid prior to March 31, and a full year's rent of USD 144,000 is due on January 2.

Federal income taxes are budgeted at 40 per cent of the income before federal income taxes. The taxes should be accrued, and no payments are due in the first quarter.

- a. Prepare a planned operating budget for the quarter ending 2011 March 31, including supporting schedules for planned purchases and operating expenses.
- b. Prepare a financial budget for 2011 March 31. Supporting schedules should be included that (1) analyze accounts credited for purchases and operating expenses, (2) show planned accounts receivable collections and balance, and (3) show planned cash flows and cash balance.
- c. Will Jackson be able to collect the USD 120,000 on his note?

Davis Corporation is a rapidly expanding company. The company's post-closing balance as of 2010 December 31, is as follows:

Davis corporation		
Post-closing trial		
balance		
2010 December 31		
	Debits	Credits
Cash	\$240,000	
Accounts receivable	480,000	
Allowance for uncollectible accounts		\$ 36,000
Inventories	600,000	
Prepaid expenses	72,000	
Land	600,000	
Buildings and equipment	1,800,000	
Accumulated depreciation		240,000
– Buildings and equipment		
Accounts payable		360,000
Accrued liabilities payable (including income taxes)		240,000
Capital stock		2,400,000
Retained earnings		516,000
	\$3,792,000	\$3,792,000

Sales in the last quarter of 2010 amounted to USD 2,400,000 and are projected at USD 3,000,000 and USD 4,800,000 for the first two quarters of 2011. This expansion has created a need for cash. Management is especially concerned about the probable cash balance of 2011 March 31, since a payment of USD 360,000 for some new equipment must be made on delivery on April 2. The current cash balance of USD 240,000 is considered to be the minimum workable balance.

Purchases, all on account, are to be scheduled so that the inventory at the end of any quarter is equal to one-third of the goods expected to be sold in the coming quarter. Cost of goods sold averages 60 per cent of sales.

Selling expenses are budgeted at USD 120,000 plus 8 per cent of sales; USD 24,000 is expected to be incurred on account, USD 288,000 accrued, USD 33,600 from expired prepayments, and USD 14,400 from allocated depreciation.

Purchasing expenses are budgeted at USD 84,000 plus 5 per cent of purchases; USD 12,000 will be incurred on account, USD 156,000 accrued, USD 13,200 from expired prepayments, and USD 10,800 from allocated depreciation.

Administrative expenses are budgeted at USD 150,000 plus 3 per cent of sales; USD 24,000 will be incurred on account, USD 132,000 accrued, USD 13,200 from expired prepayments, and USD 10,800 from allocated depreciation.

Federal income taxes are budgeted at 40 per cent of income before federal income taxes and are recorded as accrued liabilities. Payments on these taxes are included in the payments on accrued liabilities discussed in item 6.

All 2010 December 31, accounts payable plus 80 per cent of current credits to this account will be paid in the first quarter. All of the 2010 December 31, accrued liabilities payable (except for USD 72,000) will be paid in the first quarter. Of the current quarter's accrued liabilities, all but USD 288,000 will be paid during the first quarter.

Cash outlays for various expenses normally prepaid will amount to USD 96,000 during the quarter.

All sales are made on account; 80 per cent of the sales are collected in the quarter in which made, and all of the remaining sales are collected in the following quarter, except for 2 per cent which is never collected. The Allowance for Uncollectible Accounts account shows the estimated amount of accounts receivable at 2010 December 31, arising from 2010 sales that will not be collected.

a. Prepare an operating budget for the quarter ending 2011 March 31. Supporting schedules for planned purchases and operating expenses should be included.

b. Prepare a financial budget for 2011 March 31. Include supporting schedules that (1) analyze accounts credited for purchases and expenses, (2) show planned cash flows and cash balance, and (3) show planned collections of accounts receivable and the accounts receivable balance.

c. Will sufficient cash be on hand April 2 to pay for the new equipment?

Answers to self-test

True-false

True. Budgets are estimates of the future and should consider future plans and conditions.

True. Cash budgets may cover a week or a month; sales and production budgets a month, a quarter, or a year; and general operating budgets may cover a quarter or a year.

True. The planned operating budget is developed first in units, then in dollars.

False. Flexible budgets are based on actual activity and planned operating budgets are based on planned activity. Planned operating budgets based on planned activity levels and flexible budgets are not the same if planned activity levels and actual activity levels are not the same.

Multiple-choice

e. The benefits of budgeting include a through d.

c. The sales budget is first. We need to know sales before we predict cost of goods sold, selling and administrative expenses, and the financial budget.

a. Budgeted amount = Fixed cost + (Variable cost per unit x Units of output)
 = USD 60,000 + (USD 1.20 x 200,000)
 = USD 60,000 + USD 240,000
 = USD 300,000 budgeted amount

d. USD 150,000 – USD 30,000 = USD 120,000 variable cost

$$\frac{\text{USD } 120,000}{100,000 \text{ units}} = \text{USD } 1.20 \text{ per unit variable cost}$$

Budgeted costs at 90,000 units:	
90,000 x USD 1.20	USD 108,000
Fixed costs	30,000
	USD 138,000

Actual costs	142,500
Unfavorable budget variance	USD 4,500

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