chapter 9

Budgetary Planning

the navigator

- Scan **Study Objectives** ◯
- Read **Feature Story** ◯
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study objectives

After studying this chapter, you should be able to:

1. Indicate the benefits of budgeting.
2. State the essentials of effective budgeting.
3. Identify the budgets that comprise the master budget.
4. Describe the sources for preparing the budgeted income statement.
5. Explain the principal sections of a cash budget.
6. Indicate the applicability of budgeting in nonmanufacturing companies.

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feature story

The Next Amazon.com? Not Quite

The bursting of the dot-com bubble resulted in countless stories of dot-com failures. Many of these ventures were half-baked, get-rich-quick schemes, rarely based on sound business practices. Initially they saw money flowing in faster than they knew what to do with—which was precisely the problem. Without proper planning and budgeting, much of the money went to waste. In some cases, failure was actually brought on by rapid, uncontrolled growth.

One such example was online discount bookseller, www.Positively-You.com. One of the website's co-founders, Lyle Bowline, had never run a business. However, his experience as an assistant director of an entrepreneurial center had provided him with knowledge about the do's and don'ts of small business. To minimize costs, he started the company small and simple. He invested $5,000 in computer equipment and ran the business out of his basement. In the early months, even though sales were only about $2,000 a month, the company actually made a profit because it kept its costs low (a feat few other dot-coms could boast of).

Things changed dramatically when the company received national publicity in the financial press. Suddenly the company's sales increased to $50,000 a month—fully 25 times the previous level. The "simple" little business suddenly needed a business plan, a strategic plan, and a budget. It needed to rent office space and to hire employees.

Initially, members of a local book club donated time to help meet the sudden demand. Some put in so much time that eventually the company hired them. Quickly the number of paid employees ballooned. The sudden growth necessitated detailed planning and budgeting. The need for a proper budget was accentuated by the fact that the company's gross profit was only 16 cents on each dollar of goods sold. This meant that after paying for its inventory, the company had only 16 cents of every dollar to cover its remaining operating costs.

Unfortunately, the company never got things under control. Within a few months, sales had plummeted to $12,000 per month. At this level of sales the company could not meet the mountain of monthly expenses that it had accumulated in trying to grow. Ironically, the company's sudden success, and the turmoil it created, appears to have been what eventually caused the company to fail.

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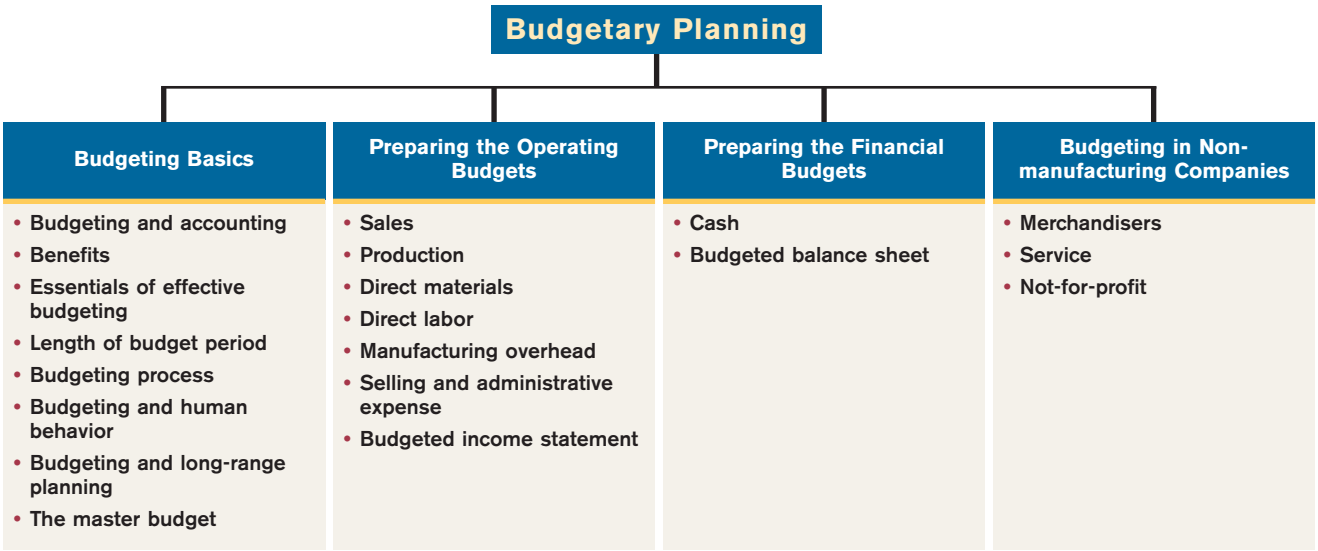
Inside Chapter 9

preview of chapter 9

As the Feature Story about Positively-You.com indicates, budgeting is critical to financial well-being. As a student, you budget your study time and your money. Families budget income and expenses. Governmental agencies budget revenues and expenditures. Business enterprises use budgets in planning and controlling their operations.

Our primary focus in this chapter is budgeting–specifically, how budgeting is used as a *planning tool* by management. Through budgeting, it should be possible for management to maintain enough cash to pay creditors, to have sufficient raw materials to meet production requirements, and to have adequate finished goods to meet expected sales.

The content and organization of Chapter 9 are as follows.



Budgeting Basics

One of management's major responsibilities is planning. As explained in Chapter 1, **planning** is the process of establishing enterprise-wide objectives. A successful organization makes both long-term and short-term plans. These plans set forth the objectives of the company and the proposed way of accomplishing them.

A **budget** is a formal written statement of management's plans for a specified future time period, expressed in financial terms. It normally represents the primary method of communicating agreed-upon objectives throughout the organization. Once adopted, a budget becomes an important basis for evaluating performance. It promotes efficiency and serves as a deterrent to waste and inefficiency. We consider the role of budgeting as a **control device** in Chapter 10.

BUDGETING AND ACCOUNTING

Accounting information makes major contributions to the budgeting process. From the accounting records, companies can obtain historical data on revenues, costs, and expenses. These data are helpful in formulating future budget goals.

Normally, accountants have the responsibility for presenting management's budgeting goals in financial terms. In this role, they translate management's plans and communicate the budget to employees throughout the company. They

prepare periodic budget reports that provide the basis for measuring performance and comparing actual results with planned objectives. The budget itself, and the administration of the budget, however, are entirely management responsibilities.

THE BENEFITS OF BUDGETING

study objective 1
Indicate the benefits of budgeting.

The primary benefits of budgeting are:

1. It requires all levels of management to **plan ahead** and to formalize goals on a recurring basis.
2. It provides **definite objectives** for evaluating performance at each level of responsibility.
3. It creates an **early warning system** for potential problems so that management can make changes before things get out of hand.
4. It facilitates the **coordination of activities** within the business. It does this by correlating the goals of each segment with overall company objectives. Thus, the company can integrate production and sales promotion with expected sales.
5. It results in greater **management awareness** of the entity's overall operations and the impact on operations of external factors, such as economic trends.
6. It **motivates personnel** throughout the organization to meet planned objectives.

A budget is an aid to management; it is not a *substitute* for management. A budget cannot operate or enforce itself. Companies can realize the benefits of budgeting only when managers carefully administer budgets.

ESSENTIALS OF EFFECTIVE BUDGETING

study objective 2
State the essentials of effective budgeting.

Effective budgeting depends on a **sound organizational structure**. In such a structure, authority and responsibility for all phases of operations are clearly defined. Budgets based on **research and analysis** should result in realistic goals that will contribute to the growth and profitability of a company. And, the effectiveness of a budget program is directly related to its **acceptance by all levels of management**.

Once adopted, the budget is an important tool for evaluating performance. Managers should systematically and periodically review variations between actual and expected results to determine their cause(s). However, individuals should not be held responsible for variations that are beyond their control.

LENGTH OF THE BUDGET PERIOD

The budget period is not necessarily one year in length. **A budget may be prepared for any period of time.** Various factors influence the length of the budget period. These factors include the type of budget, the nature of the organization, the need for periodic appraisal, and prevailing business conditions. For example, cash may be budgeted monthly, whereas a plant expansion budget may cover a 10-year period.

The budget period should be long enough to provide an attainable goal under normal business conditions. Ideally, the time period should minimize the impact of seasonal or cyclical fluctuations. On the other hand, the budget period should not be so long that reliable estimates are impossible.

The **most common budget period is one year**. The annual budget, in turn, is often supplemented by monthly and quarterly budgets. Many companies use **continuous 12-month budgets**. These budgets drop the month just ended and

add a future month. One advantage of continuous budgeting is that it keeps management planning a full year ahead.

THE BUDGETING PROCESS

The development of the budget for the coming year generally starts several months before the end of the current year. The budgeting process usually begins with the collection of data from each organizational unit of the company. Past performance is often the starting point from which future budget goals are formulated.

The budget is developed within the framework of a **sales forecast**. This forecast shows potential sales for the industry and the company's expected share of such sales. Sales forecasting involves a consideration of various factors: (1) general economic conditions, (2) industry trends, (3) market research studies, (4) anticipated advertising and promotion, (5) previous market share, (6) changes in prices, and (7) technological developments. The input of sales personnel and top management is essential to the sales forecast.

In small companies like Positively-You.com, the budgeting process is often informal. In larger companies, a **budget committee** has responsibility for coordinating the preparation of the budget. The committee ordinarily includes the president, treasurer, chief accountant (controller), and management personnel from each of the major areas of the company, such as sales, production, and research. The budget committee serves as a review board where managers can defend their budget goals and requests. Differences are reviewed, modified if necessary, and reconciled. The budget is then put in its final form by the budget committee, approved, and distributed.

Accounting Across the Organization

Businesses Often Feel Too Busy to Plan for the Future

A study by Willard & Shullman Group Ltd. found that fewer than 14% of businesses with less than 500 employees do an annual budget or have a written business plan. For many small businesses the basic assumption is that, "As long as I sell as much as I can, and keep my employees paid, I'm doing OK." A few small business owners even say that they see no need for budgeting and planning. Most small business owners, though, say that they understand that budgeting and planning are critical for survival and growth. But given the long hours that they already work addressing day-to-day challenges, they also say that they are "just too busy to plan for the future."

? Describe a situation in which a business "sells as much as it can" but cannot "keep its employees paid."

BUDGETING AND HUMAN BEHAVIOR

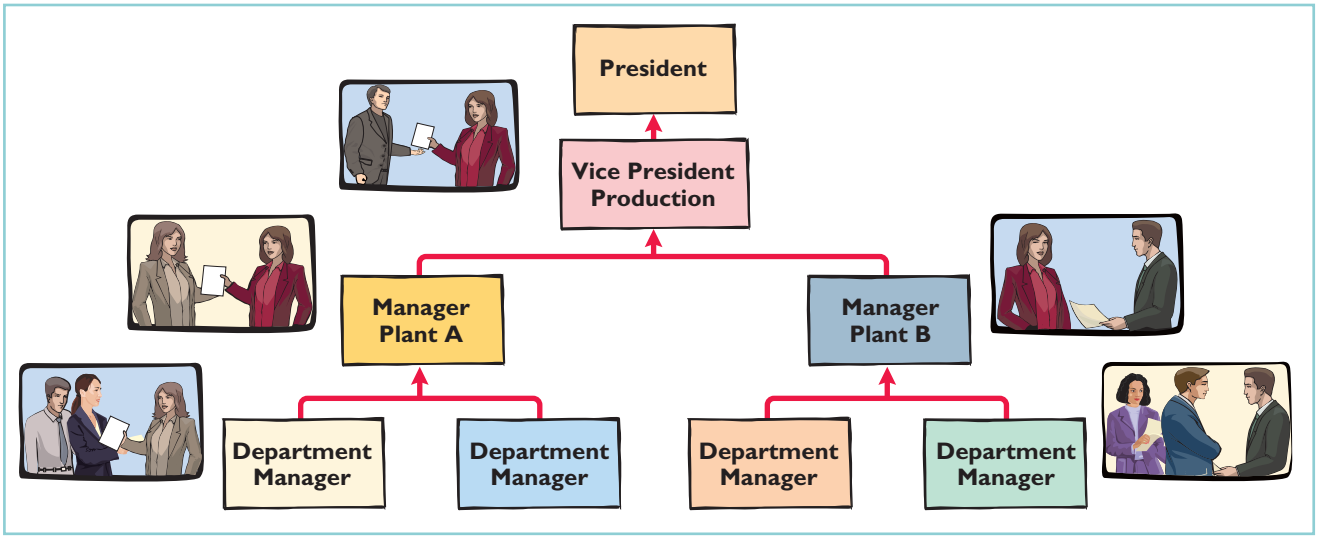
A budget can have a significant impact on human behavior. It may inspire a manager to higher levels of performance. Or, it may discourage additional effort and pull down the morale of a manager. Why do these diverse effects occur? The answer is found in how the budget is developed and administered.

In developing the budget, each level of management should be invited to participate. This "bottom-to-top" approach is referred to as **participative budgeting**.

The advantages of participative budgeting are, first, that lower-level managers have more detailed knowledge of their specific area and thus are able to provide more accurate budgetary estimates. Second, when lower-level managers participate in the budgeting process, they are more likely to perceive the resulting budget as fair. The overall goal is to reach agreement on a budget that the managers consider fair and achievable, but which also meets the corporate goals set by top management. When this goal is met, the budget will provide positive motivation for the managers. In contrast, if the managers view the budget as being unfair and unrealistic, they may feel discouraged and uncommitted to budget goals. The risk of having unrealistic budgets is generally greater when the budget is developed from top management down to lower management than vice versa.

Participative budgeting does, however, have potential disadvantages. First, it is more time-consuming (and thus more costly) than a "top-down" approach, in which the budget is simply dictated to lower-level managers. A second disadvantage is that participative budgeting can foster budgetary "gaming" through budgetary slack. **Budgetary slack** occurs when managers intentionally underestimate budgeted revenues or overestimate budgeted expenses in order to make it easier to achieve budgetary goals. To minimize budgetary slack, higher-level managers must carefully review and thoroughly question the budget projections provided to them by employees whom they supervise. Illustration 9-1 graphically displays the appropriate flow of budget data from bottom to top in an organization.

Illustration 9-1
Flow of budget data from lower levels of management to top levels



For the budget to be effective, top management must completely support the budget. The budget is an important basis for evaluating performance. It also can be used as a positive aid in achieving projected goals. The effect of an evaluation is positive when top management tempers criticism with advice and assistance. In contrast, a manager is likely to respond negatively if top management uses the budget exclusively to assess blame. A budget should not be used as a pressure device to force improved performance. In sum, a budget can be a manager's friend or a foe.

Ethics Note Unrealistic budgets can lead to unethical employee behavior such as cutting corners on the job or distorting internal financial reports.

Accounting Across the Organization

Which Budget Approach Do You Prefer?

At one time, in an effort to revive its plummeting stock, Time Warner's top management determined and publicly announced bold new financial goals for the coming year. Unfortunately, these goals were not reached.

The next year the company got a new CEO who promised, "We will not over promise, and we will deliver." The new budgets were developed with each operating unit setting what it felt were optimistic but attainable goals. In the words of one manager, using this approach created a sense of teamwork: "We're all going forward with our arms locked together."

Source: Carol J. Loomis, "AOL Time Warner's New Math," *Fortune,* February 4, 2002, pp. 98–102.

? What approach did Time Warner use to prepare the old budget? What approach did it use to prepare the new budget?

BUDGETING AND LONG-RANGE PLANNING

Budgeting and long-range planning are not the same. One important difference is the **time period involved**. The maximum length of a budget is usually one year, and budgets are often prepared for shorter periods of time, such as a month or a quarter. In contrast, long-range planning usually encompasses a period of at least five years.

A second significant difference is in **emphasis**. Budgeting focuses on achieving specific short-term goals, such as meeting annual profit objectives. **Long-range planning**, on the other hand, identifies long-term goals, selects strategies to achieve those goals, and develops policies and plans to implement the strategies. In long-range planning, management also considers anticipated trends in the economic and political environment and how the company should cope with them.

Helpful Hint In comparing a budget with a long-range plan: (1) Which has more detail? (2) Which is done for a longer period of time? (3) Which is more concerned with short-term goals? Answers: (1) Budget. (2) Long-range plan. (3) Budget.

The final difference between budgeting and long-range planning relates to the **amount of detail presented**. Budgets, as you will see in this chapter, can be very detailed. Long-range plans contain considerably less detail. The data in long-range plans are intended more for a review of progress toward long-term goals than as a basis of control for achieving specific results. The primary objective of long-range planning is to develop the best strategy to maximize the company's performance over an extended future period.

THE MASTER BUDGET

study objective 3

Identify the budgets that comprise the master budget.

The term "budget" is actually a shorthand term to describe a variety of budget documents. All of these documents are combined into a master budget. The **master budget** is a set of interrelated budgets that constitutes a plan of action for a specified time period.

The master budget contains two classes of budgets. **Operating budgets** are the individual budgets that result in the preparation of the budgeted income statement. These budgets establish goals for the company's sales and production personnel. In contrast, **financial budgets** are the capital expenditure budget, the cash budget, and the budgeted balance sheet. These budgets focus primarily on the cash resources needed to fund expected operations and planned capital expenditures.

Illustration 9-2 pictures the individual budgets included in a master budget, and the sequence in which they are prepared. The company first develops the operating budgets, beginning with the sales budget. Then it prepares the financial budgets. We will explain and illustrate each budget shown in Illustration 9-2 except the capital expenditure budget. That budget is discussed under the topic of capital budgeting in Chapter 12.

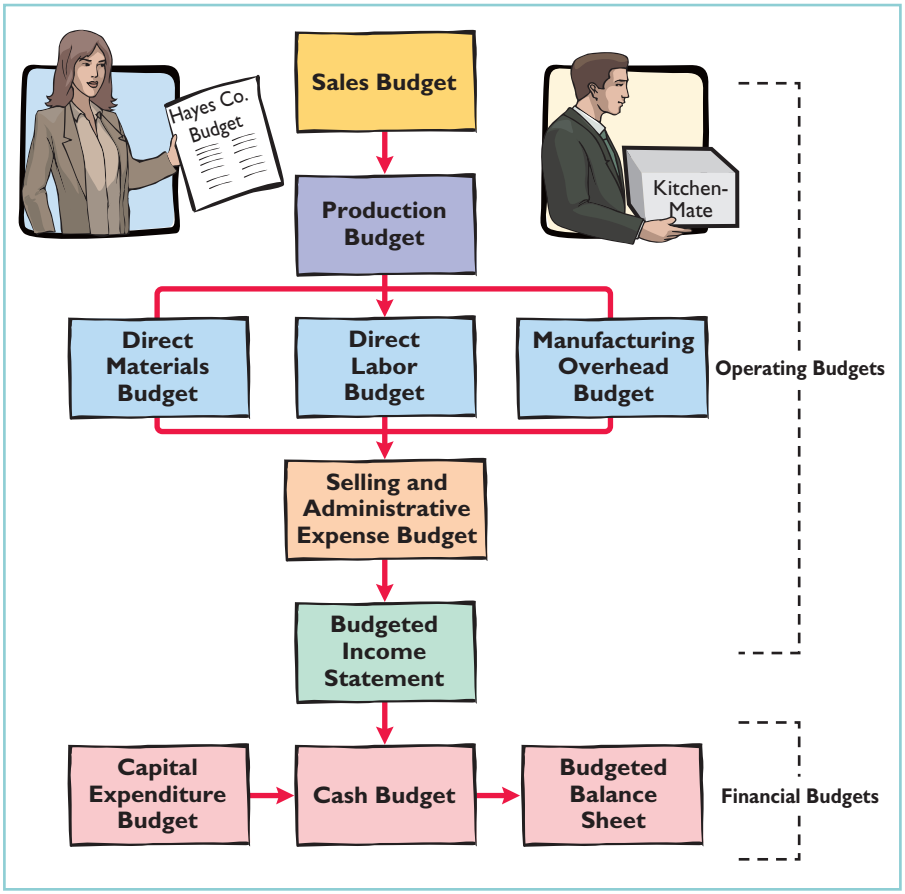


Illustration 9-2
Components of the master budget

before you go on...

Do it!

Budget Terminology

Use this list of terms to complete the sentences that follow.

Long-range planning	Participative budgeting
Sales forecast	Operating budgets
Master budget	Financial budgets

1. A _____ shows potential sales for the industry and a company's expected share of such sales.
2. _____ are used as the basis for the preparation of the budgeted income statement.
3. The _____ is a set of interrelated budgets that constitutes a plan of action for a specified time period.
4. _____ identifies long-term goals, selects strategies to achieve these goals, and develops policies and plans to implement the strategies.
5. Lower-level managers are more likely to perceive results as fair and achievable under a _____ approach.
6. _____ focus primarily on the cash resources needed to fund expected operations and planned capital expenditures.

Action Plan

- Understand the budgeting process, including the importance of the sales forecast.
- Understand the difference between an operating budget and a financial budget.
- Differentiate budgeting from long-range planning.
- Realize that the master budget is a set of interrelated budgets.

Solution

1. Sales forecast.	4. Long-range planning.
2. Operating budgets.	5. Participative budgeting.
3. Master budget.	6. Financial budgets.

Related exercise material: **BE9-1, E9-1,** and **Do it! 9-1.**

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Preparing the Operating Budgets

We use a case study of Hayes Company in preparing the operating budgets. Hayes manufactures and sells a single product, Kitchen-Mate. The budgets are prepared by quarters for the year ending December 31, 2011. Hayes Company begins its annual budgeting process on September 1, 2010, and it completes the budget for 2011 by December 1, 2010.

SALES BUDGET

Helpful Hint For a retail or manufacturing company, what is the starting point in preparing the master budget, and why? Answer: The sales budget is the starting point for the master budget. It sets the level of activity for other functions such as production and purchasing.

As shown in the master budget in Illustration 9-2, **the sales budget is the first budget prepared**. Each of the other budgets depends on the sales budget. The **sales budget** is derived from the sales forecast. It represents management's best estimate of sales revenue for the budget period. An inaccurate sales budget may adversely affect net income. For example, an overly optimistic sales budget may result in excessive inventories that may have to be sold at reduced prices. In contrast, an unduly conservative budget may result in loss of sales revenue due to inventory shortages.

For example, at one time Amazon significantly underestimated demand for its e-book reader, the Kindle. As a consequence, it did not produce enough units and was completely out well before the holiday shopping season. Not only did this represent a huge lost opportunity for Amazon, but it exposed it to potential competitors, who were eager to provide customers with alternatives to the Kindle.

Forecasting sales is challenging. For example, consider the forecasting challenges faced by major sports arenas, whose revenues depend on the success of the home team. Madison Square Garden's revenues from April to June were $193 million when the Knicks made the NBA playoffs. But revenues were only $133.2 million a couple of years later when the team did not make the playoffs. Or consider the challenges faced by Hollywood movie producers in predicting the complicated revenue stream produced by a new movie. Movie theater ticket sales represent only 20% of total revenue. The bulk of revenue comes from global sales, DVDs, video-on-demand, merchandising products, and videogames, all of which are difficult to forecast.

The sales budget is prepared by multiplying the expected unit sales volume for each product by its anticipated unit selling price. Hayes Company expects sales volume to be 3,000 units in the first quarter, with 500-unit increases in each succeeding quarter. Illustration 9-3 shows the sales budget for the year, by quarters, based on a sales price of $60 per unit.

Illustration 9-3
Sales budget

Hayes Company Sales Budget.xls

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	A	B	C	D	E	F
1	HAYES COMPANY					
2	Sales Budget					
3	For the Year Ending December 31, 2011					
4		Quarter				
5		1	2	3	4	Year
6	Expected unit sales	3,000	3,500	4,000	4,500	15,000
7	Unit selling price	× $60	× $60	× $60	× $60	× $60
8	Total sales	$180,000	$210,000	$240,000	$270,000	$900,000

Some companies classify the anticipated sales revenue as cash or credit sales and by geographical regions, territories, or salespersons.

PRODUCTION BUDGET

The **production budget** shows the units to produce to meet anticipated sales. Production requirements are determined from the following formula.[1]

Budgeted Sales Units	+	Desired Ending Finished Goods Units	−	Beginning Finished Goods Units	=	Required Production Units

Illustration 9-4
Production requirements formula

A realistic estimate of ending inventory is essential in scheduling production requirements. Excessive inventories in one quarter may lead to cutbacks in production and employee layoffs in a subsequent quarter. On the other hand, inadequate inventories may result either in added costs for overtime work or in lost sales. Hayes Company believes it can meet future sales requirements by maintaining an ending inventory equal to 20% of the next quarter's budgeted sales volume. For example, the ending finished goods inventory for the first quarter is 700 units (20% × anticipated second-quarter sales of 3,500 units). Illustration 9-5 shows the production budget.

Hayes Company Production Budget.xls

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HAYES COMPANY
Production Budget
For the Year Ending December 31, 2011

	Quarter				
	1	2	3	4	Year
Expected unit sales (Illustration 9-3)	3,000	3,500	4,000	4,500	
Add: Desired ending finished goods units[a]	700	800	900	1,000 [b]	
Total required units	3,700	4,300	4,900	5,500	
Less: Beginning finished goods units	600 [c]	700	800	900	
Required production units	**3,100**	**3,600**	**4,100**	**4,600**	**15,400**

[a]20% of next quarter's sales
[b]Expected 2012 first-quarter sales, 5,000 units × 20%
[c]20% of estimated first-quarter 2011 sales units

Illustration 9-5
Production budget

The production budget, in turn, provides the basis for the budgeted costs for each manufacturing cost element, as explained in the following pages.

[1]This formula ignores any work in process inventories, which are assumed to be nonexistent in Hayes Company.

before you go on...

Production Budget

Do it! Becker Company estimates that 2011 unit sales will be 12,000 in quarter 1, 16,000 in quarter 2, and 20,000 in quarter 3, at a unit selling price of $30. Management desires to have ending finished goods inventory equal to 15% of the next quarter's expected unit sales. Prepare a production budget by quarter for the first 6 months of 2011.

Action Plan

- Begin with budgeted sales in units.
- Add desired ending finished goods inventory.
- Subtract beginning finished goods inventory.

Solution

BECKER COMPANY
Production Budget
For the Six Months Ending June 30, 2011

	Quarter		Six
	1	2	Months
Expected unit sales	12,000	16,000	
Add: Desired ending finished goods	2,400	3,000	
Total required units	14,400	19,000	
Less: Beginning finished goods inventory	1,800	2,400	
Required production units	12,600	16,600	29,200

Related exercise material: **BE9-3, E9-4, E9-6,** and **Do it! 9-2.**

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DIRECT MATERIALS BUDGET

The **direct materials budget** shows both the quantity and cost of direct materials to be purchased. The quantities of direct materials are derived from the following formula.

Illustration 9-6
Formula for direct materials quantities

Direct Materials Units Required for Production + **Desired Ending Direct Materials Units** − **Beginning Direct Materials Units** = **Required Direct Materials Units to Be Purchased**

The company then computes the budgeted cost of direct materials to be purchased by multiplying the required units of direct materials by the anticipated cost per unit.

The desired ending inventory is again a key component in the budgeting process. For example, inadequate inventories could result in temporary shutdowns of production. Because of its close proximity to suppliers, Hayes Company maintains an ending inventory of raw materials equal to 10% of the next quarter's production requirements. The manufacture of each KitchenMate requires 2 pounds of raw materials, and the expected cost per pound is $4. Illustration 9-7 shows the direct materials budget. Assume that the desired ending direct materials amount is 1,020 pounds for the fourth quarter of 2011.

Hayes Company Direct Materials Budget.xls

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	A	B	C	D	E	F	G	H	I	J	K
1	**HAYES COMPANY**										
2	**Direct Materials Budget**										
3	**For the Year Ending December 31, 2011**										
4			Quarter								
5			1		2		3		4		Year
6	Units to be produced (Illustration 9-5)		3,100		3,600		4,100		4,600		
7	Direct materials per unit		× 2		× 2		× 2		× 2		
8	Total pounds needed for production		6,200		7,200		8,200		9,200		
9	Add: Desired ending direct materials (pounds)[a]		720		820		920		1,020		
10	Total materials required		6,920		8,020		9,120		10,220		
11	Less: Beginning direct materials (pounds)		620	[b]	720		820		920		
12	Direct materials purchases		6,300		7,300		8,300		9,300		
13	Cost per pound		× $4		× $4		× $4		× $4		
14	**Total cost of direct materials purchases**		**$25,200**		**$29,200**		**$33,200**		**$37,200**		**$124,800**
15											
16	[a]10% of next quarter's production requirements										
17	[b]10% of estimated first-quarter pounds needed for production										
18											

Illustration 9-7
Direct materials budget

before you go on...

Do it!

Master Budget

Soriano Company is preparing its master budget for 2011. Relevant data pertaining to its sales, production, and direct materials budgets are as follows:

Sales: Sales for the year are expected to total 1,200,000 units. Quarterly sales, as a percent of total sales, are 20%, 25%, 30%, and 25%, respectively. The sales price is expected to be $50 per unit for the first three quarters and $55 per unit beginning in the fourth quarter. Sales in the first quarter of 2012 are expected to be 10% higher than the budgeted sales for the first quarter of 2011.

Production: Management desires to maintain the ending finished goods inventories at 25% of the next quarter's budgeted sales volume.

Direct materials: Each unit requires 3 pounds of raw materials at a cost of $5 per pound. Management desires to maintain raw materials inventories at 5% of the next quarter's production requirements. Assume the production requirements for the first quarter of 2012 are 810,000 pounds.

Prepare the sales, production, and direct materials budgets by quarters for 2011.

Action Plan

- Know the form and content of the sales budget.
- Prepare the sales budget first, as the basis for the other budgets.
- Determine the units that must be produced to meet anticipated sales.
- Know how to compute the beginning and ending finished goods units.
- Determine the materials required to meet production needs.
- Know how to compute the beginning and ending direct materials units.

Solution

Soriano Company Sales Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1	**SORIANO COMPANY**					
2	**Sales Budget**					
3	**For the Year Ending December 31, 2011**					
4		Quarter				
5		1	2	3	4	Year
6	Expected unit sales	240,000	300,000	360,000	300,000	1,200,000
7	Unit selling price	× $50	× $50	× $50	× $55	—
8	**Total sales**	**$12,000,000**	**$15,000,000**	**$18,000,000**	**$16,500,000**	**$61,500,000**

Soriano Company Production Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1	**SORIANO COMPANY**					
2	**Production Budget**					
3	**For the Year Ending December 31, 2011**					
4		Quarter				
5		1	2	3	4	Year
6	Expected unit sales	240,000	300,000	360,000	300,000	
7	Add: Desired ending finished goods units[a]	75,000	90,000	75,000	66,000 [b]	
8	Total required units	315,000	390,000	435,000	366,000	
9	Less: Beginning finished goods units	60,000 [c]	75,000	90,000	75,000	
10	**Required production units**	**255,000**	**315,000**	**345,000**	**291,000**	**1,206,000**
11	[a]25% of next quarter's unit sales					
12	[b]Estimated first-quarter 2012 sales units 240,000 + (240,000 × 10%) = 264,000: 264,000 × 25%					
13	[c]25% of estimated first-quarter 2011 sales units (240,000 × 25%)					
14						

Soriano Company Direct Materials Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F	G	H
1	**SORIANO COMPANY**							
2	**Direct Materials Budget**							
3	**For the Year Ending December 31, 2011**							
4		Quarter						
5		1		2	3	4		Year
6	Units to be produced	255,000		315,000	345,000	291,000		
7	Direct materials per unit	× 3		× 3	× 3	× 3		
8	Total pounds needed for production	765,000		945,000	1,035,000	873,000		
9	Add: Desired ending direct materials (pounds)	47,250		51,750	43,650	40,500	[a]	
10	Total materials required	812,250		996,750	1,078,650	913,500		
11	Less: Beginning direct materials (pounds)	38,250	[b]	47,250	51,750	43,650		
12	Direct materials purchases	774,000		949,500	1,026,900	869,850		
13	Cost per pound	× $5		× $5	× $5	× $5		
14	**Total cost of direct materials purchases**	**$3,870,000**		**$4,747,500**	**$5,134,500**	**$4,349,250**		**$18,101,250**
15								
16	[a]Estimated first-quarter 2012 production requirements 810,000 × 5% = 40,500							
17	[b]5% of estimated first-quarter pounds needed for production							
18								

Related exercise material: **BE9-2, BE9-3, BE9-4, E9-2, E9-3, E9-4, E9-5, E9-6,** and ***Do it!*** **9-3.**

the navigator

DIRECT LABOR BUDGET

Like the direct materials budget, the **direct labor budget** contains the quantity (hours) and cost of direct labor necessary to meet production requirements. The total direct labor cost is derived from the following formula.

Illustration 9-8
Formula for direct labor cost

Units to Be Produced × **Direct Labor Time per Unit** × **Direct Labor Cost per Hour** = **Total Direct Labor Cost**

Direct labor hours are determined from the production budget. At Hayes Company, two hours of direct labor are required to produce each unit of finished goods. The anticipated hourly wage rate is $10. Illustration 9-9 shows these data.

Hayes Company Direct Labor Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F	G	H	I	J
1	**HAYES COMPANY**									
2	**Direct Labor Budget**									
3	**For the Year Ending December 31, 2011**									
4			Quarter							
5			1		2		3		4	Year
6	Units to be produced (Illustration 9-5)		3,100		3,600		4,100		4,600	
7	Direct labor time (hours) per unit		× 2		× 2		× 2		× 2	
8	Total required direct labor hours		6,200		7,200		8,200		9,200	
9	Direct labor cost per hour		× $10		× $10		× $10		× $10	
10	**Total direct labor cost**		**$62,000**		**$72,000**		**$82,000**		**$92,000**	**$308,000**
11										

Illustration 9-9
Direct labor budget

Helpful Hint An important assumption in Illustration 9-9 is that the company can add to and subtract from its work force as needed so that the $10 per hour labor cost applies to a wide range of possible production activity.

The direct labor budget is critical in maintaining a labor force that can meet the expected levels of production.

MANUFACTURING OVERHEAD BUDGET

The **manufacturing overhead budget** shows the expected manufacturing overhead costs for the budget period. As Illustration 9-10 shows, **this budget distinguishes between variable and fixed overhead costs**. Hayes Company expects variable costs to fluctuate with production volume on the basis of the following rates per direct labor hour: indirect materials $1.00, indirect labor $1.40, utilities $0.40, and maintenance $0.20. Thus, for the 6,200 direct labor

Hayes Company Manufacturing Overhead Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1	**HAYES COMPANY**					
2	**Manufacturing Overhead Budget**					
3	**For the Year Ending December 31, 2011**					
4		Quarter				
5		1	2	3	4	Year
6	Variable costs					
7	Indirect materials ($1.00/hour)	$ 6,200	$ 7,200	$ 8,200	$ 9,200	$ 30,800
8	Indirect labor ($1.40/hour)	8,680	10,080	11,480	12,880	43,120
9	Utilities ($0.40/hour)	2,480	2,880	3,280	3,680	12,320
10	Maintenance ($0.20/hour)	1,240	1,440	1,640	1,840	6,160
11	Total variable costs	18,600	21,600	24,600	27,600	92,400
12	Fixed costs					
13	Supervisory salaries	20,000	20,000	20,000	20,000	80,000
14	Depreciation	3,800	3,800	3,800	3,800	15,200
15	Property taxes and insurance	9,000	9,000	9,000	9,000	36,000
16	Maintenance	5,700	5,700	5,700	5,700	22,800
17	Total fixed costs	38,500	38,500	38,500	38,500	154,000
18	**Total manufacturing overhead**	**$57,100**	**$60,100**	**$63,100**	**$66,100**	**$246,400**
19	**Direct labor hours (Illustration 9-9)**	**6,200**	**7,200**	**8,200**	**9,200**	**30,800**
20	**Manufacturing overhead rate per direct labor hour ($246,400 ÷ 30,800)**					**$8**
21						

Illustration 9-10
Manufacturing overhead budget

hours to produce 3,100 units, budgeted indirect materials are $6,200 (6,200 × $1), and budgeted indirect labor is $8,680 (6,200 × $1.40). Hayes also recognizes that some maintenance is fixed. The amounts reported for fixed costs are assumed for our example. The accuracy of budgeted overhead cost estimates can be greatly improved by employing activity-based costing.

At Hayes Company, overhead is applied to production on the basis of direct labor hours. Thus, as Illustration 9-10 shows, the budgeted annual rate is $8 per hour ($246,400 ÷ 30,800).

SELLING AND ADMINISTRATIVE EXPENSE BUDGET

Hayes Company combines its operating expenses into one budget, the **selling and administrative expense budget**. This budget projects anticipated selling and administrative expenses for the budget period. This budget (Illustration 9-11) also classifies expenses as either variable or fixed. In this case, the variable expense rates per unit of sales are sales commissions $3 and freight-out $1. Variable expenses per quarter are based on the unit sales from the sales budget (Illustration 9-3, page 394). For example, Hayes expects sales in the first quarter to be 3,000 units. Thus, Sales Commissions Expense is $9,000 (3,000 × $3), and Freight-out is $3,000 (3,000 × $1). Fixed expenses are based on assumed data. Illustration 9-11 shows the selling and administrative expense budget.

Illustration 9-11
Selling and administrative expense budget

Hayes Company Manufacturing Selling and Administrative Expense Budget.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1	**HAYES COMPANY**					
2	**Selling and Administrative Expense Budget**					
3	**For the Year Ending December 31, 2011**					
4		Quarter				
5		1	2	3	4	Year
6	Budgeted sales in units (Illustration 9-3)	3,000	3,500	4,000	4,500	15,000
7	Variable expenses					
8	Sales commissions ($3 per unit)	$ 9,000	$10,500	$12,000	$ 13,500	$ 45,000
9	Freight-out ($1 per unit)	3,000	3,500	4,000	4,500	15,000
10	Total variable expenses	12,000	14,000	16,000	18,000	60,000
11	Fixed expenses					
12	Advertising	5,000	5,000	5,000	5,000	20,000
13	Sales salaries	15,000	15,000	15,000	15,000	60,000
14	Office salaries	7,500	7,500	7,500	7,500	30,000
15	Depreciation	1,000	1,000	1,000	1,000	4,000
16	Property taxes and insurance	1,500	1,500	1,500	1,500	6,000
17	Total fixed expenses	30,000	30,000	30,000	30,000	120,000
18	**Total selling and administrative expenses**	**$42,000**	**$44,000**	**$46,000**	**$48,000**	**$180,000**
19						

BUDGETED INCOME STATEMENT

study objective 4

Describe the sources for preparing the budgeted income statement.

The **budgeted income statement** is the important end-product of the operating budgets. This budget indicates the expected profitability of operations for the budget period. The budgeted income statement provides the basis for evaluating company performance. Budgeted income statements often act as a call to action. For example, a board member at XM Satellite Radio Holdings felt that budgeted costs were too high relative to budgeted revenues. When management refused to cut its marketing and programming costs, the board member resigned; he felt that without the cuts, the company risked financial crisis.

As you would expect, the budgeted income statement is prepared from the various operating budgets. For example, to find the cost of goods sold, it is first necessary to determine the total unit cost of producing one Kitchen-Mate, as follows.

Illustration 9-12
Computation of total unit cost

	Cost of One Kitchen-Mate			
Cost Element	**Illustration**	**Quantity**	**Unit Cost**	**Total**
Direct materials	9-7	2 pounds	$ 4.00	$ 8.00
Direct labor	9-9	2 hours	$10.00	20.00
Manufacturing overhead	9-10	2 hours	$ 8.00	16.00
Total unit cost				**$44.00**

Hayes Company then determines cost of goods sold by multiplying the units sold by the unit cost. Its budgeted cost of goods sold is $660,000 (15,000 × $44). All data for the income statement come from the individual operating budgets except the following: (1) interest expense is expected to be $100, and (2) income taxes are estimated to be $12,000. Illustration 9-13 shows the budgeted income statement.

Illustration 9-13
Budgeted income statement

HAYES COMPANY
Budgeted Income Statement
For the Year Ending December 31, 2011

Sales (Illustration 9-3)	$900,000
Cost of goods sold (15,000 × $44)	660,000
Gross profit	240,000
Selling and administrative expenses (Illustration 9-11)	180,000
Income from operations	60,000
Interest expense	100
Income before income taxes	59,900
Income tax expense	12,000
Net income	$ 47,900

DECISION TOOLKIT

DECISION CHECKPOINTS	INFO NEEDED FOR DECISION	TOOL TO USE FOR DECISION	HOW TO EVALUATE RESULTS
Has the company met its targets for sales, production expenses, selling and administrative expenses, and net income?	Sales forecasts, inventory levels, projected materials, labor, overhead, and selling and administrative requirements	Master budget–a set of interrelated budgets including sales, production, materials, labor, overhead, and selling and administrative budgets	Results are favorable if revenues exceed budgeted amounts, or if expenses are less than budgeted amounts.

before you go on...

Do it! **Budgeted Income Statement**

Soriano Company is preparing its budgeted income statement for 2011. Relevant data pertaining to its sales, production, and direct materials budgets can be found in the *Do it!* exercise on page 397.

In addition, Soriano budgets 0.5 hours of direct labor per unit, labor costs at $15 per hour, and manufacturing overhead at $25 per direct labor hour. Its budgeted selling and administrative expenses for 2011 are $12,000,000.

(a) Calculate the budgeted total unit cost. (b) Prepare the budgeted income statement for 2011.

Action Plan

- Recall that total unit cost consists of direct materials, direct labor, and manufacturing overhead.
- Recall that direct materials costs are included in the direct materials budget.
- Know the form and content of the income statement.
- Use the total unit sales information from the sales budget to compute annual sales and cost of goods sold.

Solution

(a)

Cost Element	Quantity	Unit Cost	Total
Direct materials	3.0 pounds	$ 5	$ 15.00
Direct labor	0.5 hours	$15	7.50
Manufacturing overhead	0.5 hours	$25	12.50
Total unit cost			**$35.00**

(b)

SORIANO COMPANY
Budgeted Income Statement
For the Year Ending December 31, 2011

Sales (1,200,000 units from sales budget, page 397)	$61,500,000
Cost of goods sold (1,200,000 × $35.00/unit)	42,000,000
Gross profit	19,500,000
Selling and administrative expenses	12,000,000
Net income	$ 7,500,000

Related exercise material: **BE9-8, E9-11, E9-13,** and **Do it! 9-4.**

the navigator

Preparing the Financial Budgets

As shown in Illustration 9-2 (page 393), the financial budgets consist of the capital expenditure budget, the cash budget, and the budgeted balance sheet. We will discuss the capital expenditure budget in Chapter 12; the other budgets are explained in the following sections.

CASH BUDGET

study objective 5
Explain the principal sections of a cash budget.

The **cash budget** shows anticipated cash flows. Because cash is so vital, this budget is often considered to be the most important financial budget.

The cash budget contains three sections (cash receipts, cash disbursements, and financing) and the beginning and ending cash balances, as shown in Illustration 9-14.

Illustration 9-14
Basic form of a cash budget

ANY COMPANY
Cash Budget

Beginning cash balance	$X,XXX
Add: Cash receipts (Itemized)	X,XXX
Total available cash	X,XXX
Less: Cash disbursements (Itemized)	X,XXX
Excess (deficiency) of available cash over cash disbursements	X,XXX
Financing	X,XXX
Ending cash balance	$X,XXX

Helpful Hint Why is the cash budget prepared after the other budgets are prepared? Answer: Because the information generated by the other budgets dictates the expected inflows and outflows of cash.

The **cash receipts section** includes expected receipts from the company's principal source(s) of revenue. These are usually cash sales and collections from customers on credit sales. This section also shows anticipated receipts of interest and

dividends, and proceeds from planned sales of investments, plant assets, and the company's capital stock.

The **cash disbursements section** shows expected cash payments. Such payments include direct materials, direct labor, manufacturing overhead, and selling and administrative expenses. This section also includes projected payments for income taxes, dividends, investments, and plant assets.

The **financing section** shows expected borrowings and the repayment of the borrowed funds plus interest. Companies need this section when there is a cash deficiency or when the cash balance is below management's minimum required balance.

Data in the cash budget are prepared in sequence. The ending cash balance of one period becomes the beginning cash balance for the next period. Companies obtain data for preparing the cash budget from other budgets and from information provided by management. In practice, cash budgets are often prepared for the year on a monthly basis.

To minimize detail, we will assume that Hayes Company prepares an annual cash budget by quarters. Its cash budget is based on the following assumptions.

1. The January 1, 2011, cash balance is expected to be $38,000. Hayes wishes to maintain a balance of at least $15,000.
2. Sales (Illustration 9-3, page 394): 60% are collected in the quarter sold and 40% are collected in the following quarter. Accounts receivable of $60,000 at December 31, 2010, are expected to be collected in full in the first quarter of 2011.
3. Short-term investments are expected to be sold for $2,000 cash in the first quarter.
4. Direct materials (Illustration 9-7, page 397): 50% are paid in the quarter purchased and 50% are paid in the following quarter. Accounts payable of $10,600 at December 31, 2010, are expected to be paid in full in the first quarter of 2011.
5. Direct labor (Illustration 9-9, page 399): 100% is paid in the quarter incurred.
6. Manufacturing overhead (Illustration 9-10, page 399) and selling and administrative expenses (Illustration 9-11, page 400): All items except depreciation are paid in the quarter incurred.
7. Management plans to purchase a truck in the second quarter for $10,000 cash.
8. Hayes makes equal quarterly payments of its estimated annual income taxes.
9. Loans are repaid in the earliest quarter in which there is sufficient cash (that is, when the cash on hand exceeds the $15,000 minimum required balance).

In preparing the cash budget, it is useful to prepare schedules for collections from customers (assumption No. 2) and cash payments for direct materials (assumption No. 4). These schedules are shown in Illustrations 9-15 and 9-16.

Illustration 9-15
Collections from customers

HAYES COMPANY
Schedule of Expected Collections from Customers

	Quarter			
	1	2	3	4
Accounts receivable, 12/31/10	$ 60,000			
First quarter ($180,000)	108,000	$ 72,000		
Second quarter ($210,000)		126,000	$ 84,000	
Third quarter ($240,000)			144,000	$ 96,000
Fourth quarter ($270,000)				162,000
Total collections	$168,000	$198,000	$228,000	$258,000

Illustration 9-16
Payments for direct materials

HAYES COMPANY
Schedule of Expected Payments for Direct Materials

	Quarter			
	1	2	3	4
Accounts payable, 12/31/10	$10,600			
First quarter ($25,200)	12,600	$12,600		
Second quarter ($29,200)		14,600	$14,600	
Third quarter ($33,200)			16,600	$16,600
Fourth quarter ($37,200)				18,600
Total payments	$23,200	$27,200	$31,200	$35,200

Illustration 9-17 shows the cash budget for Hayes Company. The budget indicates that Hayes will need $3,000 of financing in the second quarter to maintain a minimum cash balance of $15,000. Since there is an excess of available cash over disbursements of $22,500 at the end of the third quarter, the borrowing, plus $100 interest, is repaid in this quarter.

Illustration 9-17
Cash budget

Hayes Company Cash Budget.xls

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HAYES COMPANY
Cash Budget
For the Year Ending December 31, 2011

			Quarter			
	Assumption	1	2	3	4
Beginning cash balance	1	$ 38,000	$ 25,500	$ 15,000	$ 19,400
Add: Receipts					
Collections from customers	2	168,000	198,000	228,000	258,000
Sale of securities	3	2,000	0	0	0
Total receipts		170,000	198,000	228,000	258,000
Total available cash		208,000	223,500	243,000	277,400
Less: Disbursements					
Direct materials	4	23,200	27,200	31,200	35,200
Direct labor	5	62,000	72,000	82,000	92,000
Manufacturing overhead	6	53,300	[a] 56,300	59,300	62,300
Selling and administrative expenses	6	41,000	[b] 43,000	45,000	47,000
Purchase of truck	7	0	10,000	0	0
Income tax expense	8	3,000	3,000	3,000	3,000
Total disbursements		182,500	211,500	220,500	239,500
Excess (deficiency) of available cash over cash disbursements		25,500	12,000	22,500	37,900
Financing					
Borrowings		0	**3,000**	0	0
Repayments-plus $100 interest	9	0	0	**3,100**	0
Ending cash balance		$ 25,500	$ 15,000	$ 19,400	$ 37,900

[a] $57,100-$3,800 depreciation
[b] $42,000-$1,000 depreciation

Service Company Insight

Without a Budget, Can the Games Begin?

Behind the grandeur of the Olympic Games lies a huge financial challenge–how to keep budgeted costs in line with revenues. For example, the 2006 Winter Olympics in Turin, Italy, narrowly avoided going into bankruptcy before the Games even started. In order for the event to remain solvent, organizers cancelled glitzy celebrations and shifted promotional responsibilities to an Italian state-run agency. Despite these efforts, after the Games were over, the Italian government created a lottery game to cover its financial losses.

As another example, organizers of the 2002 Winter Olympics in Salt Lake City cut budgeted costs by $200 million shortly before the events began. According to the chief operating and financial officer, the organizers went through every line item in the budget, sorting each one into "must have" versus "nice to have." As a result, the Salt Lake City Games produced a surplus of $100 million.

Source: Gabriel Kahn and Roger Thurow, "In Turin, Paying for Games Went Down to the Wire," *Wall Street Journal,* February 10, 2006.

? Why does it matter whether the Olympic Games exceed their budget?

A cash budget contributes to more effective cash management. It shows managers when additional financing is necessary well before the actual need arises. And, it indicates when excess cash is available for investments or other purposes.

DECISION TOOLKIT

DECISION CHECKPOINTS	INFO NEEDED FOR DECISION	TOOL TO USE FOR DECISION	HOW TO EVALUATE RESULTS
Is the company going to need to borrow funds in the coming quarter?	Beginning cash balance, cash receipts, cash disbursements, and desired cash balance	Cash budget	The company will need to borrow money if the cash budget indicates a projected cash deficiency of available cash over cash disbursements for the quarter.

BUDGETED BALANCE SHEET

The **budgeted balance sheet** is a projection of financial position at the end of the budget period. This budget is developed from the budgeted balance sheet for the preceding year and the budgets for the current year. Pertinent data from the budgeted balance sheet at December 31, 2010, are as follows.

Buildings and equipment	$182,000	Common stock	$225,000
Accumulated depreciation	$ 28,800	Retained earnings	$ 46,480

Illustration 9-18 show Hayes Company's budgeted balance sheet at December 31, 2011.

Illustration 9-18
Budgeted balance sheet

HAYES COMPANY
Budgeted Balance Sheet
December 31, 2011

Assets		
Cash		$ 37,900
Accounts receivable		108,000
Finished goods inventory		44,000
Raw materials inventory		4,080
Buildings and equipment	$192,000	
Less: Accumulated depreciation	48,000	144,000
Total assets		$337,980
Liabilities and Stockholders' Equity		
Accounts payable		$ 18,600
Common stock		225,000
Retained earnings		94,380
Total liabilities and stockholders' equity		$337,980

The computations and sources of the amounts are explained below.

Cash: Ending cash balance $37,900, shown in the cash budget (Illustration 9-17, page 404).

Accounts receivable: 40% of fourth-quarter sales $270,000, shown in the schedule of expected collections from customers (Illustration 9-15, page 403).

Finished goods inventory: Desired ending inventory 1,000 units, shown in the production budget (Illustration 9-5, page 395) times the total unit cost $44 (shown in Illustration 9-12, page 401).

Raw materials inventory: Desired ending inventory 1,020 pounds, times the cost per pound $4, shown in the direct materials budget (Illustration 9-7, page 397).

Buildings and equipment: December 31, 2010, balance $182,000, plus purchase of truck for $10,000 (Illustration 9-17, page 404).

Accumulated depreciation: December 31, 2010, balance $28,800, plus $15,200 depreciation shown in manufacturing overhead budget (Illustration 9-10, page 399) and $4,000 depreciation shown in selling and administrative expense budget (Illustration 9-11, page 400).

Accounts payable: 50% of fourth-quarter purchases $37,200, shown in schedule of expected payments for direct materials (Illustration 9-16, page 404).

Common stock: Unchanged from the beginning of the year.

Retained earnings: December 31, 2010, balance $46,480, plus net income $47,900, shown in budgeted income statement (Illustration 9-13, page 401).

After budget data are entered into the computer, Hayes prepares the various budgets (sales, cash, etc.), as well as the budgeted financial statements. Using spreadsheets, management can also perform "what if" (sensitivity) analyses based on different hypothetical assumptions. For example, suppose that sales managers project that sales will be 10% higher in the coming quarter. What impact does this change have on the rest of the budgeting process and the financing needs of the business? The impact of the various assumptions on the budget

is quickly determined by the spreadsheet. Armed with these analyses, managers make more informed decisions about the impact of various projects. They also anticipate future problems and business opportunities. As seen in this chapter, budgeting is an excellent use of electronic spreadsheets.

before you go on...

Do it! Martian Company management wants to maintain a minimum monthly cash balance of $15,000. At the beginning of March, the cash balance is $16,500, expected cash receipts for March are $210,000, and cash disbursements are expected to be $220,000. How much cash, if any, must be borrowed to maintain the desired minimum monthly balance?

Cash Budget

Action Plan

- Write down the basic form of the cash budget, starting with the beginning cash balance, adding cash receipts for the period, deducting cash disbursements, and identifying the needed financing to achieve the desired minimum ending cash balance.
- Insert the data given into the outlined form of the cash budget.

Solution

MARTIAN COMPANY
Cash Budget
For the Month Ending March 31, 2011

Beginning cash balance	$ 16,500
Add: Cash receipts for March	210,000
Total available cash	226,500
Less: Cash disbursements for March	220,000
Excess of available cash over cash disbursements	6,500
Financing	8,500
Ending cash balance	$ 15,000

To maintain the desired minimum cash balance of $15,000, Martian Company must borrow $8,500 of cash.

Related exercise material: **BE9-9, E9-13, E9-14, E9-15, E9-16,** and **Do it! 9-5.**

the navigator

Budgeting in Nonmanufacturing Companies

study objective 6

Indicate the applicability of budgeting in nonmanufacturing companies.

Budgeting is not limited to manufacturers. Budgets are also used by merchandisers, service enterprises, and not-for-profit organizations.

MERCHANDISERS

As in manufacturing operations, the sales budget for a merchandiser is both the starting point and the key factor in the development of the master budget. The major differences between the master budgets of a merchandiser and a manufacturer are these:

1. A merchandiser **uses a merchandise purchases budget instead of a production budget**.
2. A merchandiser **does not use the manufacturing budgets (direct materials, direct labor, and manufacturing overhead)**.

The **merchandise purchases budget** shows the estimated cost of goods to be purchased to meet expected sales. The formula for determining budgeted merchandise purchases is:

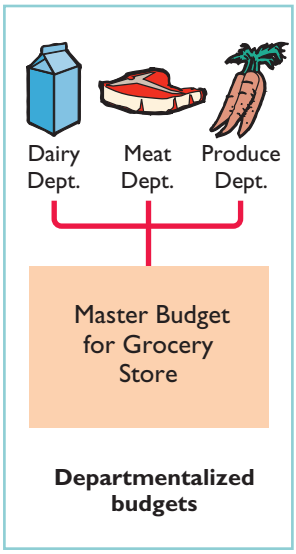
Budgeted Cost of Goods Sold	+	Desired Ending Merchandise Inventory	−	Beginning Merchandise Inventory	=	Required Merchandise Purchases

Illustration 9-19
Merchandise purchases formula

To illustrate, assume that the budget committee of Lima Company is preparing the merchandise purchases budget for July 2011. It estimates that budgeted sales will be $300,000 in July and $320,000 in August. Cost of goods sold is expected to be 70% of sales—that is, $210,000 in July (.70 × $300,000) and $224,000 in August (.70 × $320,000). The company's desired ending inventory is 30% of the following month's cost of goods sold. Required merchandise purchases for July are $214,200, computed as follows.

Illustration 9-20
Merchandise purchases budget

LIMA COMPANY Merchandise Purchases Budget For the Month Ending July 31, 2011	
Budgeted cost of goods sold ($300,000 × 70%)	$ 210,000
Add: Desired ending merchandise inventory ($224,000 × 30%)	67,200
Total	277,200
Less: Beginning merchandise inventory ($210,000 × 30%)	63,000
Required merchandise purchases for July	**$214,200**



Departmentalized budgets

When a merchandiser is departmentalized, it prepares separate budgets for each department. For example, a grocery store prepares sales budgets and purchases budgets for each of its major departments, such as meats, dairy, and produce. The store then combines these budgets into a master budget for the store. When a retailer has branch stores, it prepares separate master budgets for each store. Then it incorporates these budgets into master budgets for the company as a whole.

SERVICE ENTERPRISES

In a service enterprise, such as a public accounting firm, a law office, or a medical practice, the critical factor in budgeting is **coordinating professional staff needs with anticipated services**. If a firm is overstaffed, several problems may result: Labor costs are disproportionately high. Profits are lower because of the additional salaries. Staff turnover sometimes increases because of lack of challenging work. In contrast, if a service enterprise is understaffed, it may lose revenue because existing and prospective client needs for service cannot be met. Also, professional staff may seek other jobs because of excessive work loads.

Service enterprises can obtain budget data for service revenue from **expected output** or **expected input**. When output is used, it is necessary to determine the expected billings of clients for services provided. In a public accounting firm, for example, output is the sum of its billings in auditing, tax, and consulting services. When input data are used, each professional staff member projects his or her billable time. The firm then applies billing rates to billable time to produce expected service revenue.

NOT-FOR-PROFIT ORGANIZATIONS

Budgeting is just as important for not-for-profit organizations as for profit-oriented enterprises. The budget process, however, is different. In most cases, not-for-profit entities budget **on the basis of cash flows (expenditures and receipts), rather than on a revenue and expense basis**. Further, the starting point in the process is usually expenditures, not receipts. For the not-for-profit entity, management's task generally is to find the receipts needed to support the planned expenditures. The activity index is also likely to be significantly different. For example, in a

not-for-profit entity, such as a university, budgeted faculty positions may be based on full-time equivalent students or credit hours expected to be taught in a department.

For some governmental units, voters approve the budget. In other cases, such as state governments and the federal government, legislative approval is required. After the budget is adopted, it must be followed. Overspending is often illegal. In governmental budgets, authorizations tend to be on a line-by-line basis. That is, the budget for a municipality may have a specified authorization for police and fire protection, garbage collection, street paving, and so on. The line-item authorization of governmental budgets significantly limits the amount of discretion management can exercise. The city manager often cannot use savings from one line item, such as street paving, to cover increased spending in another line item, such as snow removal.

Service Company Insight

Budget Shortfalls as Far as the Eye Can See

All organizations need to stick to budgets. The Museum of Contemporary Art in Los Angeles learned this the hard way. Over a 10-year period, its endowment shrunk from $50 million to $6 million as its newly hired director strove to build the museum's reputation through spending. The director consistently ran budget deficits, which eventually threatened the museum's survival.

The most recent recession has created budgeting challenges for nearly all governmental agencies. Tax revenues dropped rapidly as earnings declined and unemployment skyrocketed. At the same time, sources of debt financing dried up. To meet a projected shortfall of nearly $50 billion, California proposed to cut the school year by five days, give state workers two unpaid days off per month, and raise the state's sales tax percentage. Even Princeton University, with the largest endowment per student of any U.S. university ($2 million per student), experienced a 25% drop in the value of its endowment when the financial markets plunged. Because the endowment supports 45% of the university's $1.25 billion budget, when the endowment fell the university had to make cuts. Many raises were capped at $2,000, administrative budgets were cut by 5%, and major construction projects were put on hold.

Sources: Edward Wyatt and Jori Finkel, "Soaring in Art, Museum Trips Over Finances," *Wall Street Journal Online*, December 4, 2008; Stu Woo, "California's Plans to Close Gap Become More Drastic," *Wall Street Journal Online*, January 8, 2009; John Hechinger, "Princeton Cuts Budget as Endowment Slides," *Wall Street Journal Online*, January 9, 2009.

? Why would a university's budgeted scholarships probably fall when the stock market suffers a serious drop?

Be sure to read
all about YOU
Avoiding Personal Financial Disaster
on page 410 for information on how topics in this chapter apply to you.

Avoiding Personal Financial Disaster

You might hear people say that they "need to learn to live within a budget." The funny thing is that most people who say this haven't actually prepared a personal budget, nor do they intend to. Instead, what they are referring to is a vaguely defined, poorly specified collection of rough ideas of how much they should spend on various aspects of their life. You can't live within or even outside of something that doesn't exist. With that in mind, let's take a look at personal budgets.

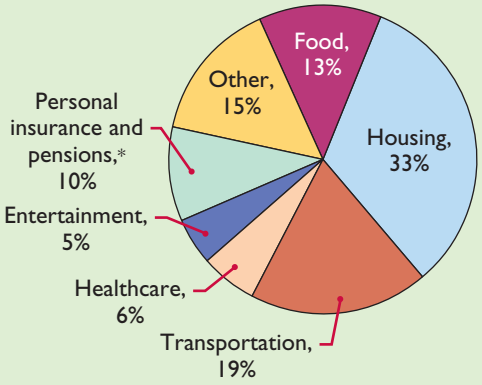
Some Facts

* The average American household income is $49,430, before taxes.
* The average family spends $5,375 on food each year. Of this, $3,099 is for food consumed at home, and $2,276 is for food consumed away from home.
* The average family spends $13,283 annually on housing costs. Of this amount, $7,829 is the actual cost of shelter, $2,684 is for utilities, and $1,518 is for furnishings and equipment.
* The average family spends $7,759 per year on transportation. Of this, $3,665 goes to vehicle purchase payments, and $1,235 is spent on fuel. The average family spends only $389 per year on public transportation.

About the Numbers

Obviously people spend their income in different ways. For example, the percentage of your income spent on necessities declines as your income increases. Nonetheless, it is interesting to see how the average family spends its money.

Average U.S. Household Expenditures



* This includes Social Security tax.

Source: "Consumer Expenditures in 2004," U.S. Department of Labor and U.S. Bureau of Labor Statistics, Report 992, April 2006.

What Do You Think?

Many worksheet templates that are provided for personal budgets for college students treat student loans as an income source. See, for example, the template provided at *http://financialplan.about.com/cs/budgeting/l/blmocolbud.htm.* Based on your knowledge of accounting, is this correct?

YES: Student loans provide a source of cash, which can be used to pay costs. As the saying goes, "It all spends the same." Therefore, student loans are income.

NO: Student loans must eventually be repaid; therefore, they are not income. As the name suggests, they are loans.

The authors' comments on this situation appear on page 433.

USING THE DECISION TOOLKIT

The University of Wisconsin and its subunits must prepare budgets. One unique subunit of the University of Wisconsin is Babcock Ice Cream, a functioning producer of dairy products (and famous, at least on campus, for its delicious ice cream).

Assume that Babcock Ice Cream prepares monthly cash budgets. Relevant data from assumed operating budgets for 2011 are:

	January	February
Sales	$460,000	$412,000
Direct materials purchases	185,000	210,000
Direct labor	70,000	85,000
Manufacturing overhead	50,000	65,000
Selling and administrative expenses	85,000	95,000

Babcock sells its ice cream in shops on campus, as well as to local stores. Collections are expected to be 75% in the month of sale, and 25% in the month following sale. Babcock pays 60% of direct materials purchases in cash in the month of purchase, and the balance due in the month following the purchase. All other items above are paid in the month incurred. (Depreciation has been excluded from manufacturing overhead and selling and administrative expenses.)

Other data:

(1) Sales: December 2010, $320,000
(2) Purchases of direct materials: December 2010, $175,000
(3) Other receipts: January—Donation received, $2,000
February—Sale of used equipment, $4,000
(4) Other disbursements: February—Purchased equipment, $10,000
(5) Repaid debt: January, $30,000

The company's cash balance on January 1, 2011, is expected to be $50,000. The company wants to maintain a minimum cash balance of $45,000.

Instructions

(a) Prepare schedules for (1) expected collections from customers and (2) expected payments for direct materials purchases.
(b) Prepare a cash budget for January and February in columnar form.

Solution

(a) (1) **Expected Collections from Customers**

	January	February
December ($320,000)	$ 80,000	$ 0
January ($460,000)	345,000	115,000
February ($412,000)	0	309,000
Totals	$425,000	$424,000

(2) **Expected Payments for Direct Materials**

	January	February
December ($175,000)	$ 70,000	$ 0
January ($185,000)	111,000	74,000
February ($210,000)	0	126,000
Totals	$181,000	$200,000

(b)

BABCOCK ICE CREAM
Cash Budget
For the Two Months Ending February 28, 2011

	January	February
Beginning cash balance	$ 50,000	$ 61,000
Add: Receipts		
Collections from customers	425,000	424,000
Donations received	2,000	0
Sale of used equipment	0	4,000
Total receipts	427,000	428,000
Total available cash	477,000	489,000
Less: Disbursements		
Direct materials	181,000	200,000
Direct labor	70,000	85,000
Manufacturing overhead	50,000	65,000
Selling and administrative expenses	85,000	95,000
Purchase of equipment	0	10,000
Total disbursements	386,000	455,000
Excess (deficiency) of available cash over cash disbursements	91,000	34,000
Financing		
Borrowings	0	11,000
Repayments	30,000	0
Ending cash balance	$ 61,000	$ 45,000

Summary of Study Objectives

1 Indicate the benefits of budgeting. The primary advantages of budgeting are that it (a) requires management to plan ahead, (b) provides definite objectives for evaluating performance, (c) creates an early warning system for potential problems, (d) facilitates coordination of activities, (e) results in greater management awareness, and (f) motivates personnel to meet planned objectives.

2 State the essentials of effective budgeting. The essentials of effective budgeting are (a) sound organizational structure, (b) research and analysis, and (c) acceptance by all levels of management.

3 Identify the budgets that comprise the master budget. The master budget consists of the following budgets: (a) sales, (b) production, (c) direct materials, (d) direct labor, (e) manufacturing overhead, (f) selling and administrative expense, (g) budgeted income statement, (h) capital expenditure budget, (i) cash budget, and (j) budgeted balance sheet.

4 Describe the sources for preparing the budgeted income statement. The budgeted income statement is prepared from (a) the sales budget; (b) the budgets for direct materials, direct labor, and manufacturing overhead; and (c) the selling and administrative expense budget.

5 Explain the principal sections of a cash budget. The cash budget has three sections (receipts, disbursements, and financing) and the beginning and ending cash balances.

6 Indicate the applicability of budgeting in nonmanufacturing companies. Budgeting may be used by merchandisers for development of a merchandise purchases budget. In service enterprises, budgeting is a critical factor in coordinating staff needs with anticipated services. In not-for-profit organizations, the starting point in budgeting is usually expenditures, not receipts.

DECISION TOOLKIT A SUMMARY

DECISION CHECKPOINTS	INFO NEEDED FOR DECISION	TOOL TO USE FOR DECISION	HOW TO EVALUATE RESULTS
Has the company met its targets for sales, production expenses, selling and administrative expenses, and net income?	Sales forecasts, inventory levels, projected materials, labor, overhead, and selling and administrative requirements	Master budget–a set of interrelated budgets including sales, production, materials, labor, overhead, and selling and administrative budgets	Results are favorable if revenues exceed budgeted amounts, or if expenses are less than budgeted amounts.
Is the company going to need to borrow funds in the coming quarter?	Beginning cash balance, cash receipts, cash disbursements, and desired cash balance	Cash budget	The company will need to borrow money if the cash budget indicates a projected cash deficiency of available cash over cash disbursements for the quarter.

Glossary

Budget *(p. 388)* A formal written statement of management's plans for a specified future time period, expressed in financial terms.

Budget committee *(p. 390)* A group responsible for coordinating the preparation of the budget.

Budgetary slack *(p. 391)* The amount by which a manager intentionally underestimates budgeted revenues or overestimates budgeted expenses in order to make it easier to achieve budgetary goals.

Budgeted balance sheet *(p. 405)* A projection of financial position at the end of the budget period.

Budgeted income statement *(p. 400)* An estimate of the expected profitability of operations for the budget period.

Cash budget *(p. 402)* A projection of anticipated cash flows.

Direct labor budget *(p. 398)* A projection of the quantity and cost of direct labor necessary to meet production requirements.

Direct materials budget *(p. 396)* An estimate of the quantity and cost of direct materials to be purchased.

Financial budgets *(p. 392)* Individual budgets that focus primarily on the cash resources needed to fund expected operations and planned capital expenditures.

Long-range planning *(p. 392)* A formalized process of selecting strategies to achieve long-term goals and developing policies and plans to implement the strategies.

Manufacturing overhead budget *(p. 399)* An estimate of expected manufacturing overhead costs for the budget period.

Master budget *(p. 392)* A set of interrelated budgets that constitutes a plan of action for a specific time period.

Merchandise purchases budget *(p. 407)* The estimated cost of goods to be purchased by a merchandiser to meet expected sales.

Operating budgets *(p. 392)* Individual budgets that result in a budgeted income statement.

Participative budgeting *(p. 390)* A budgetary approach that starts with input from lower-level managers and works upward so that managers at all levels participate.

Production budget *(p. 395)* A projection of the units that must be produced to meet anticipated sales.

Sales budget *(p. 394)* An estimate of expected sales revenue for the budget period.

Sales forecast *(p. 390)* The projection of potential sales for the industry and the company's expected share of such sales.

Selling and administrative expense budget *(p. 400)* A projection of anticipated selling and administrative expenses for the budget period.

Comprehensive *Do it!*

Asheville Company is preparing its master budget for 2011. Relevant data pertaining to its sales and production budgets are as follows:

Sales: Sales for the year are expected to total 1,200,000 units. Quarterly sales, as a percentage of total sales, are 20%, 25%, 30%, and 25%, respectively. The sales price is expected to be $50 per unit for the first three quarters and $55 per unit beginning in

the fourth quarter. Sales in the first quarter of 2012 are expected to be 10% higher than the budgeted sales volume for the first quarter of 2011.

Production: Management desires to maintain ending finished goods inventories at 25% of the next quarter's budgeted sales volume.

Instructions

Prepare the sales budget and production budget by quarters for 2011.

Action Plan

- Know the form and content of the sales budget.
- Prepare the sales budget first as the basis for the other budgets.
- Determine the units that must be produced to meet anticipated sales.
- Know how to compute the beginning and ending finished goods units.

Solution to Comprehensive Do it!

ASHEVILLE COMPANY
Sales Budget
For the Year Ending December 31, 2011

	Quarter				
	1	2	3	4	Year
Expected unit sales	240,000	300,000	360,000	300,000	1,200,000
Unit selling price	× $50	× $50	× $50	× $55	—
Total sales	$12,000,000	$15,000,000	$18,000,000	$16,500,000	$61,500,000

ASHEVILLE COMPANY
Production Budget
For the Year Ending December 31, 2011

	Quarter				
	1	2	3	4	Year
Expected unit sales	240,000	300,000	360,000	300,000	
Add: Desired ending finished goods units	75,000	90,000	75,000	66,000[1]	
Total required units	315,000	390,000	435,000	366,000	
Less: Beginning finished goods units	60,000[2]	75,000	90,000	75,000	
Required production units	255,000	315,000	345,000	291,000	1,206,000

[1]Estimated first-quarter 2012 sales volume 240,000 + (240,000 × 10%) = 264,000; 264,000 × 25%.
[2]25% of estimated first-quarter 2011 sales units (240,000 × 25%).

the navigator

Self-Study Questions

WILEY PLUS

Answers are at the end of the chapter.

(SO 1) **1.** Which of the following is not a benefit of budgeting?
(a) Management can plan ahead.
(b) An early warning system is provided for potential problems.
(c) It enables disciplinary action to be taken at every level of responsibility.
(d) The coordination of activities is facilitated.

(SO 1) **2.** A budget:
(a) is the responsibility of management accountants.
(b) is the primary method of communicating agreed-upon objectives throughout an organization.
(c) ignores past performance because it represents management's plans for a future time period.
(d) may promote efficiency but has no role in evaluating performance.

(SO 2) **3.** The essentials of effective budgeting do *not* include:
(a) top-down budgeting.
(b) management acceptance.
(c) research and analysis.
(d) sound organizational structure.

(SO 2) **4.** Compared to budgeting, long-range planning generally has the:
(a) same amount of detail.
(b) longer time period.
(c) same emphasis.
(d) same time period.

(SO 3) **5.** A sales budget is:
(a) derived from the production budget.
(b) management's best estimate of sales revenue for the year.
(c) not the starting point for the master budget.
(d) prepared only for credit sales.

(SO 3) **6.** The formula for the production budget is budgeted sales in units plus:
(a) desired ending merchandise inventory less beginning merchandise inventory.
(b) beginning finished goods units less desired ending finished goods units.
(c) desired ending direct materials units less beginning direct materials units.
(d) desired ending finished goods units less beginning finished goods units.

(SO 3) **7.** Direct materials inventories are kept in pounds in Byrd Company, and the total pounds of direct materials needed for production is 9,500. If the beginning inventory is 1,000 pounds and the desired ending inventory is 2,200 pounds, the total pounds to be purchased is:
(a) 9,400.
(b) 9,500.
(c) 9,700.
(d) 10,700.

(SO 3) **8.** The formula for computing the direct labor budget is to multiply the direct labor cost per hour by the:
(a) total required direct labor hours.
(b) physical units to be produced.
(c) equivalent units to be produced.
(d) No correct answer is given.

(SO 4) **9.** Each of the following budgets is used in preparing the budgeted income statement *except* the:
(a) sales budget.
(b) selling and administrative budget.
(c) capital expenditure budget.
(d) direct labor budget.

(SO 4) **10.** The budgeted income statement is:
(a) the end-product of the operating budgets.
(b) the end-product of the financial budgets.
(c) the starting point of the master budget.
(d) dependent on cash receipts and cash disbursements.

(SO 5) **11.** The budgeted balance sheet is:
(a) developed from the budgeted balance sheet for the preceding year and the budgets for the current year.
(b) the last operating budget prepared.
(c) used to prepare the cash budget.
(d) All of the above.

(SO 5) **12.** The format of a cash budget is:
(a) Beginning cash balance + Cash receipts + Cash from financing − Cash disbursements = Ending cash balance.
(b) Beginning cash balance + Cash receipts − Cash disbursements +/− Financing = Ending cash balance.
(c) Beginning cash balance + Net income − Cash dividends = Ending cash balance.
(d) Beginning cash balance + Cash revenues − Cash expenses = Ending cash balance.

(SO 5) **13.** Expected direct materials purchases in Read Company are $70,000 in the first quarter and $90,000 in the second quarter. Forty percent of the purchases are paid in cash as incurred, and the balance is paid in the following quarter. The budgeted cash payments for purchases in the second quarter are:
(a) $96,000.
(b) $90,000.
(c) $78,000.
(d) $72,000.

(SO 6) **14.** The budget for a merchandiser differs from a budget for a manufacturer because:
(a) a merchandise purchases budget replaces the production budget.
(b) the manufacturing budgets are not applicable.
(c) None of the above.
(d) Both (a) and (b) above.

(SO 6) **15.** In most cases, not-for-profit entities:
(a) prepare budgets using the same steps as those used by profit-oriented enterprises.
(b) know budgeted cash receipts at the beginning of a time period, so they budget only for expenditures.
(c) begin the budgeting process by budgeting expenditures rather than receipts.
(d) can ignore budgets because they are not expected to generate net income.

Go to the book's companion website, **www.wiley.com/college/weygandt**, for Additional Self-Study Questions.

Questions

1. (a) What is a budget?
(b) How does a budget contribute to good management?

2. Karen Bay and Frank Barone are discussing the benefits of budgeting. They ask you to identify the primary advantages of budgeting. Comply with their request.

3. Tina Haworth asks your help in understanding the essentials of effective budgeting. Identify the essentials for Tina.

4. (a) "Accounting plays a relatively unimportant role in budgeting." Do you agree? Explain.
(b) What responsibilities does management have in budgeting?

5. What criteria are helpful in determining the length of the budget period? What is the most common budget period?

6. Megan Pedigo maintains that the only difference between budgeting and long-range planning is time. Do you agree? Why or why not?

7. What is participative budgeting? What are its potential benefits? What are its potential disadvantages?

8. What is budgetary slack? What incentive do managers have to create budgetary slack?
9. Distinguish between a master budget and a sales forecast.
10. What budget is the starting point in preparing the master budget? What may result if this budget is inaccurate?
11. "The production budget shows both unit production data and unit cost data." Is this true? Explain.
12. Cali Company has 15,000 beginning finished goods units. Budgeted sales units are 160,000. If management desires 20,000 ending finished goods units, what are the required units of production?
13. In preparing the direct materials budget for Mast Company, management concludes that required purchases are 64,000 units. If 52,000 direct materials units are required in production and there are 7,000 units of beginning direct materials, what is the desired units of ending direct materials?
14. The production budget of Rooney Company calls for 80,000 units to be produced. If it takes 30 minutes to make one unit and the direct labor rate is $16 per hour, what is the total budgeted direct labor cost?
15. Morales Company's manufacturing overhead budget shows total variable costs of $198,000 and total fixed costs of $162,000. Total production in units is expected to be 160,000. It takes 15 minutes to make one unit, and the direct labor rate is $15 per hour. Express the manufacturing overhead rate as (a) a percentage of direct labor cost, and (b) an amount per direct labor hour.
16. Elbert Company's variable selling and administrative expenses are 10% of net sales. Fixed expenses are $50,000 per quarter. The sales budget shows expected sales of $200,000 and $250,000 in the first and second quarters, respectively. What are the total budgeted selling and administrative expenses for each quarter?
17. For Nolte Company, the budgeted cost for one unit of product is direct materials $10, direct labor $20, and manufacturing overhead 90% of direct labor cost. If 25,000 units are expected to be sold at $69 each, what is the budgeted gross profit?
18. Indicate the supporting schedules used in preparing a budgeted income statement through gross profit for a manufacturer.
19. Identify the three sections of a cash budget. What balances are also shown in this budget?
20. Van Gundy Company has credit sales of $500,000 in January. Past experience suggests that 45% is collected in the month of sale, 50% in the month following the sale, and 5% in the second month following the sale. Compute the cash collections from January sales in January, February, and March.
21. What is the formula for determining required merchandise purchases for a merchandiser?
22. How may expected revenues in a service enterprise be computed?

Brief Exercises

Prepare a diagram of a master budget. (SO 3)

BE9-1 Voorhees Manufacturing Company uses the following budgets: Balance Sheet, Capital Expenditure, Cash, Direct Labor, Direct Materials, Income Statement, Manufacturing Overhead, Production, Sales, and Selling and Administrative. Prepare a diagram of the interrelationships of the budgets in the master budget. Indicate whether each budget is an operating or a financial budget.

Prepare a sales budget. (SO 3)

BE9-2 Mussatto Company estimates that unit sales will be 10,000 in quarter 1; 12,000 in quarter 2; 14,000 in quarter 3; and 18,000 in quarter 4. Using a sales price of $80 per unit, prepare the sales budget by quarters for the year ending December 31, 2011.

Prepare a production budget for 2 quarters. (SO 3)

BE9-3 Sales budget data for Mussatto Company are given in BE9-2. Management desires to have an ending finished goods inventory equal to 20% of the next quarter's expected unit sales. Prepare a production budget by quarters for the first 6 months of 2011.

Prepare a direct materials budget for 1 month. (SO 3)

BE9-4 Hannon Company has 1,600 pounds of raw materials in its December 31, 2011, ending inventory. Required production for January and February of 2012 are 4,000 and 5,500 units, respectively. Two pounds of raw materials are needed for each unit, and the estimated cost per pound is $6. Management desires an ending inventory equal to 20% of next month's materials requirements. Prepare the direct materials budget for January.

Prepare a direct labor budget for 2 quarters. (SO 3)

BE9-5 For Cobb Company, units to be produced are 5,000 in quarter 1 and 6,000 in quarter 2. It takes 1.5 hours to make a finished unit, and the expected hourly wage rate is $14 per hour. Prepare a direct labor budget by quarters for the 6 months ending June 30, 2011.

Prepare a manufacturing overhead budget. (SO 3)

BE9-6 For Eckert Inc., variable manufacturing overhead costs are expected to be $20,000 in the first quarter of 2011, with $4,000 increments in each of the remaining three quarters. Fixed overhead costs are estimated to be $35,000 in each quarter. Prepare the manufacturing overhead budget by quarters and in total for the year.

BE9-7 Kaspar Company classifies its selling and administrative expense budget into variable and fixed components. Variable expenses are expected to be $25,000 in the first quarter, and $5,000 increments are expected in the remaining quarters of 2011. Fixed expenses are expected to be $40,000 in each quarter. Prepare the selling and administrative expense budget by quarters and in total for 2011.

Prepare a selling and administrative expense budget. (SO 3)

BE9-8 Paige Company has completed all of its operating budgets. The sales budget for the year shows 50,000 units and total sales of $2,000,000. The total unit cost of making one unit of sales is $22. Selling and administrative expenses are expected to be $300,000. Income taxes are estimated to be $150,000. Prepare a budgeted income statement for the year ending December 31, 2011.

Prepare a budgeted income statement for the year. (SO 4)

BE9-9 Wasson Industries expects credit sales for January, February, and March to be $200,000, $260,000, and $310,000, respectively. It is expected that 70% of the sales will be collected in the month of sale, and 30% will be collected in the following month. Compute cash collections from customers for each month.

Prepare data for a cash budget. (SO 5)

BE9-10 Pargo Wholesalers is preparing its merchandise purchases budget. Budgeted sales are $400,000 for April and $475,000 for May. Cost of goods sold is expected to be 60% of sales. The company's desired ending inventory is 20% of the following month's cost of goods sold. Compute the required purchases for April.

Determine required merchandise purchases for 1 month. (SO 6)

Do it! Review

Do it! 9-1 Use this list of terms to complete the sentences that follow.

Identify budget terminology. (SO 2, 3)

Long-range plans	Participative budgeting
Sales forecast	Operating budgets
Master budget	Financial budgets

1. _____ establish goals for the company's sales and production personnel.
2. The _____ is a set of interrelated budgets that constitutes a plan of action for a specified time period.
3. _____ reduces the risk of having unrealistic budgets.
4. _____ include the cash budget and the budgeted balance sheet.
5. The budget is formed within the framework of a _____.
6. _____ contain considerably less detail than budgets.

Do it! 9-2 Wellstone Company estimates that 2011 unit sales will be 18,000 in quarter 1, 24,000 in quarter 2, and 30,000 in quarter 3, at a unit selling price of $20. Management desires to have ending finished goods inventory equal to 10% of the next quarter's expected unit sales. Prepare a production budget by quarter for the first 6 months of 2011.

Production budget. (SO 3)

Do it! 9-3 Oak Creek Company is preparing its master budget for 2011. Relevant data pertaining to its sales, production, and direct materials budgets are as follows.

Prepare sales, production, and direct materials budgets. (SO 3)

Sales: Sales for the year are expected to total 1,000,000 units. Quarterly sales are 20%, 25%, 25%, and 30%, respectively. The sales price is expected to be $40 per unit for the first three quarters and $45 per unit beginning in the fourth quarter. Sales in the first quarter of 2012 are expected to be 10% higher than the budgeted sales for the first quarter of 2011.

Production: Management desires to maintain the ending finished goods inventories at 20% of the next quarter's budgeted sales volume.

Direct materials: Each unit requires 2 pounds of raw materials at a cost of $10 per pound. Management desires to maintain raw materials inventories at 10% of the next quarter's production requirements. Assume the production requirements for first quarter of 2012 are 500,000 pounds.

Prepare the sales, production, and direct materials budgets by quarters for 2011.

Do it! 9-4 Oak Creek Company is preparing its budgeted income statement for 2011. Relevant data pertaining to its sales, production, and direct materials budgets can be found in **Do it!** 9-3.

Calculate budgeted total unit cost and prepare budgeted income statement. (SO 4)

In addition, Oak Creek budgets 0.3 hours of direct labor per unit, labor costs at $14 per hour, and manufacturing overhead at $20 per direct labor hour. Its budgeted selling and administrative expenses for 2011 are $7,000,000.

(a) Calculate the budgeted total unit cost.
(b) Prepare the budgeted income statement for 2011.

Determine amount of financing needed. (SO 5)

Do it! 9-5 Venetian Company management wants to maintain a minimum monthly cash balance of $20,000. At the beginning of April, the cash balance is $22,000, expected cash receipts for March are $245,000, and cash disbursements are expected to be $256,000. How much cash, if any, must be borrowed to maintain the desired minimum monthly balance?

Exercises

Explain the concept of budgeting. (SO 1, 2, 3)

E9-1 Raney Company has always done some planning for the future, but the company has never prepared a formal budget. Now that the company is growing larger, it is considering preparing a budget.

Instructions
Write a memo to Jim Thome, the president of Raney Company, in which you define budgeting, identify the budgets that comprise the master budget, identify the primary benefits of budgeting, and discuss the essentials of effective budgeting.

Prepare a sales budget for 2 quarters. (SO 3)

E9-2 Trusler Electronics Inc. produces and sells two models of pocket calculators, XQ-103 and XQ-104. The calculators sell for $12 and $25, respectively. Because of the intense competition Trusler faces, management budgets sales semiannually. Its projections for the first 2 quarters of 2011 are as follows.

	Unit Sales	
Product	**Quarter 1**	**Quarter 2**
XQ-103	20,000	25,000
XQ-104	12,000	15,000

No changes in selling prices are anticipated.

Instructions
Prepare a sales budget for the 2 quarters ending June 30, 2011. List the products and show for each quarter and for the 6 months, units, selling price, and total sales by product and in total.

Prepare a sales budget for four quarters. (SO 3, 6)

E9-3 Crede and Rensing, CPAs, are preparing their service revenue (sales) budget for the coming year (2011). The practice is divided into three departments: auditing, tax, and consulting. Billable hours for each department, by quarter, are provided below.

Department	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Auditing	2,200	1,600	2,000	2,400
Tax	3,000	2,400	2,000	2,500
Consulting	1,500	1,500	1,500	1,500

Average hourly billing rates are: auditing $80, tax $90, and consulting $100.

Instructions
Prepare the service revenue (sales) budget for 2011 by listing the departments and showing for each quarter and the year in total, billable hours, billable rate, and total revenue.

Prepare quarterly production budgets. (SO 3)

E9-4 Pletcher Company produces and sells automobile batteries, the heavy-duty HD-240. The 2011 sales forecast is as follows.

Quarter	HD-240
1	5,000
2	7,000
3	8,000
4	10,000

The January 1, 2011, inventory of HD-240 is 2,500 units. Management desires an ending inventory each quarter equal to 50% of the next quarter's sales. Sales in the first quarter of 2012 are expected to be 30% higher than sales in the same quarter in 2011.

Instructions
Prepare quarterly production budgets for each quarter and in total for 2011.

E9-5 Dewitt Industries has adopted the following production budget for the first 4 months of 2012.

Prepare a direct materials purchases budget. (SO 3)

Month	Units	Month	Units
January	10,000	March	5,000
February	8,000	April	4,000

Each unit requires 3 pounds of raw materials costing $2 per pound. On December 31, 2011, the ending raw materials inventory was 9,000 pounds. Management wants to have a raw materials inventory at the end of the month equal to 30% of next month's production requirements.

Instructions
Prepare a direct materials purchases budget by month for the first quarter.

E9-6 On January 1, 2012, the Lovell Company budget committee has reached agreement on the following data for the 6 months ending June 30, 2012.

Prepare production and direct materials budgets by quarters for 6 months. (SO 3)

Sales units:	First quarter 5,000; second quarter 6,000; third quarter 7,000
Ending raw materials inventory:	50% of the next quarter's production requirements
Ending finished goods inventory:	30% of the next quarter's expected sales units
Third-quarter production:	7,250 units

The ending raw materials and finished goods inventories at December 31, 2011, follow the same percentage relationships to production and sales that occur in 2012. Three pounds of raw materials are required to make each unit of finished goods. Raw materials purchased are expected to cost $4 per pound.

Instructions
(a) Prepare a production budget by quarters for the 6-month period ended June 30, 2012.
(b) Prepare a direct materials budget by quarters for the 6-month period ended June 30, 2012.

E9-7 Kirkland Ltd. estimates sales for the second quarter of 2011 will be as follows:

Prepare raw materials purchase budget in dollars. (SO 3)

Month	Units
April	2,550
May	2,475
June	2,390

The target ending inventory of finished products is as follows:

March 31	2,000
April 30	2,230
May 31	2,190
June 30	2,310

Two units of material are required for each unit of finished product. Production for July is estimated at 2,700 units to start building inventory for the fall sales period. Kirkland's policy is to have an inventory of raw materials at the end of each month equal to 60% of the following month's production requirements.

Raw materials are expected to cost $4 per unit throughout the period.

Instructions
Calculate the May raw materials purchases in dollars.

(CGA adapted)

E9-8 Gonzales, Inc., is preparing its direct labor budget for 2011 from the following production budget based on a calendar year.

Prepare a direct labor budget. (SO 3)

Quarter	Units	Quarter	Units
1	20,000	3	35,000
2	25,000	4	30,000

Each unit requires 1.6 hours of direct labor.

Instructions

Prepare a direct labor budget for 2011. Wage rates are expected to be $15 for the first 2 quarters and $16 for quarters 3 and 4.

Prepare production and direct labor budgets. (SO 3)

E9-9 Choo-Foo Company makes and sells artistic frames for pictures. The controller is responsible for preparing the master budget and has accumulated the following information for 2011.

	January	February	March	April	May
Estimated unit sales	10,000	12,000	8,000	9,000	9,000
Sales price per unit	$50.00	$47.50	$47.50	$47.50	$47.50
Direct labor hours per unit	2.0	2.0	1.5	1.5	1.5
Wage per direct labor hour	$8.00	$8.00	$8.00	$9.00	$9.00

Choo-Foo has a labor contract that calls for a wage increase to $9.00 per hour on April 1. New labor-saving machinery has been installed and will be fully operational by March 1.

Choo-Foo expects to begin the year with 16,000 frames on hand and has a policy of carrying an end-of-month inventory of 100% of the following month's sales, plus 50% of the second following month's sales.

Instructions

Prepare a production budget and a direct labor budget for Choo-Foo Company by month and for the first quarter of the year. The direct labor budget should include direct labor hours.

(CMA-Canada adapted)

Prepare a manufacturing overhead budget for the year. (SO 3)

E9-10 Frizell Company is preparing its manufacturing overhead budget for 2011. Relevant data consist of the following.

Units to be produced (by quarters): 10,000, 12,000, 14,000, 16,000.
Direct labor: Time is 1.5 hours per unit.
Variable overhead costs per direct labor hour: Indirect materials $0.70; indirect labor $1.20; and maintenance $0.50.
Fixed overhead costs per quarter: Supervisory salaries $35,000; depreciation $16,000; and maintenance $12,000.

Instructions

Prepare the manufacturing overhead budget for the year, showing quarterly data.

Prepare a selling and administrative expense budget for 2 quarters. (SO 3)

E9-11 Medina Company combines its operating expenses for budget purposes in a selling and administrative expense budget. For the first 6 months of 2011, the following data are available.

1. Sales: 20,000 units quarter 1; 22,000 units quarter 2.
2. Variable costs per dollar of sales: Sales commissions 5%, delivery expense 2%, and advertising 3%.
3. Fixed costs per quarter: Sales salaries $10,000, office salaries $6,000, depreciation $4,200, insurance $1,500, utilities $800, and repairs expense $600.
4. Unit selling price: $20.

Instructions

Prepare a selling and administrative expense budget by quarters for the first 6 months of 2011.

Prepare a production and a direct materials budget. (SO 3)

E9-12 Ortiz Company's sales budget projects unit sales of part 198Z of 10,000 units in January, 12,000 units in February, and 13,000 units in March. Each unit of part 198Z requires 2 pounds of materials, which cost $3 per pound. Ortiz Company desires its ending raw materials inventory to equal 40% of the next month's production requirements, and its ending finished goods inventory to equal 25% of the next month's expected unit sales. These goals were met at December 31, 2010.

Instructions

(a) Prepare a production budget for January and February 2011.
(b) Prepare a direct materials budget for January 2011.

Prepare a budgeted income statement for the year. (SO 3, 4)

E9-13 Yono Company has accumulated the following budget data for the year 2011.

1. Sales: 30,000 units, unit selling price $80.
2. Cost of one unit of finished goods: Direct materials 2 pounds at $5 per pound, direct labor 3 hours at $12 per hour, and manufacturing overhead $6 per direct labor hour.

3. Inventories (raw materials only): Beginning, 10,000 pounds; ending, 15,000 pounds.
4. Raw materials cost: $5 per pound.
5. Selling and administrative expenses: $200,000.
6. Income taxes: 30% of income before income taxes.

Instructions

(a) Prepare a schedule showing the computation of cost of goods sold for 2011.
(b) Prepare a budgeted income statement for 2011.

Prepare a cash budget for 2 months. (SO 5)

E9-14 Malone Company expects to have a cash balance of $46,000 on January 1, 2011. Relevant monthly budget data for the first 2 months of 2011 are as follows.

Collections from customers: January $85,000, February $150,000.

Payments for direct materials: January $50,000, February $70,000.

Direct labor: January $30,000, February $45,000. Wages are paid in the month they are incurred.

Manufacturing overhead: January $21,000, February $25,000. These costs include depreciation of $1,000 per month. All other overhead costs are paid as incurred.

Selling and administrative expenses: January $15,000, February $20,000. These costs are exclusive of depreciation. They are paid as incurred.

Sales of marketable securities in January are expected to realize $10,000 in cash. Malone Company has a line of credit at a local bank that enables it to borrow up to $25,000. The company wants to maintain a minimum monthly cash balance of $20,000.

Instructions

Prepare a cash budget for January and February.

Prepare a cash budget. (SO 5)

E9-15 Fultz Corporation is projecting a cash balance of $31,000 in its December 31, 2010, balance sheet. Fultz's schedule of expected collections from customers for the first quarter of 2011 shows total collections of $180,000. The schedule of expected payments for direct materials for the first quarter of 2011 shows total payments of $41,000. Other information gathered for the first quarter of 2011 is: sale of equipment $3,500; direct labor $70,000, manufacturing overhead $35,000, selling and administrative expenses $45,000; and purchase of securities $12,000. Fultz wants to maintain a balance of at least $25,000 cash at the end of each quarter.

Instructions

Prepare a cash budget for the first quarter.

Prepare cash budget for a month. (SO 5)

E9-16 The controller of Harrington Company wants to improve the company's control system by preparing a month-by-month cash budget. The following information is for the month ending July 31, 2011.

June 30, 2011 cash balance	$45,000
Dividends to be declared on July 15*	12,000
Cash expenditures to be paid in July for operating expenses	36,800
Amortization expense in July	4,500
Cash collections to be received in July	89,000
Merchandise purchases to be paid in cash in July	56,200
Equipment to be purchased for cash in July	20,500

*Dividends are payable 30 days after declaration to shareholders of record on the declaration date.

Harrington Company wants to keep a minimum cash balance of $25,000.

Instructions

(a) Prepare a cash budget for the month ended July 31, 2011, and indicate how much money, if any, Harrington Company will need to borrow to meet its minimum cash requirement.
(b) Explain how cash budgeting can reduce the cost of short-term borrowing.

(CGA adapted)

Prepare schedules of expected collections and payments. (SO 5)

E9-17 CDK Company's budgeted sales and direct materials purchases are as follows.

	Budgeted Sales	Budgeted D.M. Purchases
January	$200,000	$30,000
February	220,000	35,000
March	270,000	41,000

CDK's sales are 40% cash and 60% credit. Credit sales are collected 10% in the month of sale, 50% in the month following sale, and 36% in the second month following sale; 4% are uncollectible. CDK's purchases are 50% cash and 50% on account. Purchases on account are paid 40% in the month of purchase, and 60% in the month following purchase.

Instructions

(a) Prepare a schedule of expected collections from customers for March.
(b) Prepare a schedule of expected payments for direct materials for March.

Prepare schedules for cash receipts and cash payments, and determine ending balances for balance sheet. (SO 5, 6)

E9-18 Green Landscaping Inc. is preparing its budget for the first quarter of 2011. The next step in the budgeting process is to prepare a cash receipts schedule and a cash payments schedule. To that end the following information has been collected.

Clients usually pay 60% of their fee in the month that service is provided, 30% the month after, and 10% the second month after receiving service.

Actual service revenue for 2010 and expected service revenues for 2011 are: November 2010, $90,000; December 2010, $80,000; January 2011, $100,000; February 2011, $120,000; March 2011, $130,000.

Purchases of landscaping supplies (direct materials) are paid 40% in the month of purchase and 60% the following month. Actual purchases for 2010 and expected purchases for 2011 are: December 2010, $14,000; January 2011, $12,000; February 2011, $15,000; March 2011, $18,000.

Instructions

(a) Prepare the following schedules for each month in the first quarter of 2011 and for the quarter in total:
  (1) Expected collections from clients.
  (2) Expected payments for landscaping supplies.
(b) Determine the following balances at March 31, 2011:
  (1) Accounts receivable.
  (2) Accounts payable.

Prepare a cash budget for two quarters. (SO 5, 6)

E9-19 Deitz Dental Clinic is a medium-sized dental service specializing in family dental care. The clinic is currently preparing the master budget for the first 2 quarters of 2011. All that remains in this process is the cash budget. The following information has been collected from other portions of the master budget and elsewhere.

Beginning cash balance	$ 30,000
Required minimum cash balance	25,000
Payment of income taxes (2nd quarter)	4,000
Professional salaries:	
1st quarter	140,000
2nd quarter	140,000
Interest from investments (2nd quarter)	5,000
Overhead costs:	
1st quarter	75,000
2nd quarter	100,000
Selling and administrative costs, including $3,000 depreciation:	
1st quarter	50,000
2nd quarter	70,000
Purchase of equipment (2nd quarter)	50,000
Sale of equipment (1st quarter)	15,000
Collections from clients:	
1st quarter	230,000
2nd quarter	380,000
Interest payments (2nd quarter)	300

Instructions

Prepare a cash budget for each of the first two quarters of 2011.

Prepare a purchases budget and budgeted income statement for a merchandiser. (SO 6)

E9-20 In May 2011, the budget committee of Dalby Stores assembles the following data in preparation of budgeted merchandise purchases for the month of June.

1. Expected sales: June $500,000, July $600,000.
2. Cost of goods sold is expected to be 70% of sales.

3. Desired ending merchandise inventory is 40% of the following (next) month's cost of goods sold.
4. The beginning inventory at June 1 will be the desired amount.

Instructions

(a) Compute the budgeted merchandise purchases for June.
(b) Prepare the budgeted income statement for June through gross profit.

Exercises: Set B

Visit the book's companion website at **www.wiley.com/college/weygandt**, and choose the Student Companion site, to access Exercise Set B.

Problems: Set A

P9-1A Zelmer Farm Supply Company manufactures and sells a pesticide called Snare. The following data are available for preparing budgets for Snare for the first 2 quarters of 2012.

Prepare budgeted income statement and supporting budgets.
(SO 3, 4)

1. Sales: Quarter 1, 28,000 bags; quarter 2, 42,000 bags. Selling price is $60 per bag.
2. Direct materials: Each bag of Snare requires 4 pounds of Gumm at a cost of $4 per pound and 6 pounds of Tarr at $1.50 per pound.
3. Desired inventory levels:

Type of Inventory	January 1	April 1	July 1
Snare (bags)	8,000	12,000	18,000
Gumm (pounds)	9,000	10,000	13,000
Tarr (pounds)	14,000	20,000	25,000

4. Direct labor: Direct labor time is 15 minutes per bag at an hourly rate of $14 per hour.
5. Selling and administrative expenses are expected to be 15% of sales plus $175,000 per quarter.
6. Income taxes are expected to be 30% of income from operations.

Your assistant has prepared two budgets: (1) The manufacturing overhead budget shows expected costs to be 150% of direct labor cost. (2) The direct materials budget for Tarr shows the cost of Tarr purchases to be $297,000 in quarter 1 and $439,500 in quarter 2.

Instructions

Prepare the budgeted income statement for the first 6 months and all required operating budgets by quarters. (*Note:* Use variable and fixed in the selling and administrative expense budget.) Do not prepare the manufacturing overhead budget or the direct materials budget for Tarr.

Net income $600,250
Cost per bag $33.75

P9-2A Jantzen Inc. is preparing its annual budgets for the year ending December 31, 2012. Accounting assistants furnish the data shown below.

Prepare sales, production, direct materials, direct labor, and income statement budgets.
(SO 3, 4)

	Product JB 50	Product JB 60
Sales budget:		
Anticipated volume in units	400,000	200,000
Unit selling price	$20	$25
Production budget:		
Desired ending finished goods units	25,000	15,000
Beginning finished goods units	30,000	10,000
Direct materials budget:		
Direct materials per unit (pounds)	2	3
Desired ending direct materials pounds	30,000	15,000
Beginning direct materials pounds	40,000	10,000
Cost per pound	$3	$4
Direct labor budget:		
Direct labor time per unit	0.4	0.6
Direct labor rate per hour	$12	$12
Budgeted income statement:		
Total unit cost	$12	$21

An accounting assistant has prepared the detailed manufacturing overhead budget and the selling and administrative expense budget. The latter shows selling expenses of $660,000 for product JB 50 and $360,000 for product JB 60, and administrative expenses of $540,000 for product JB 50 and $340,000 for product JB 60. Income taxes are expected to be 30%.

Instructions

(a) Total sales $13,000,000
(b) Required production units: JB 50, 395,000 JB 60, 205,000
(c) Total cost of direct materials purchases $4,820,000
(d) Total direct labor cost $3,372,000
(e) Net income $1,470,000

Prepare the following budgets for the year. Show data for each product. Quarterly budgets should not be prepared.

(a) Sales
(b) Production
(c) Direct materials
(d) Direct labor
(e) Income statement (*Note:* Income taxes are not allocated to the products.)

Prepare sales and production budgets and compute cost per unit under two plans.
(SO 3, 4)

P9-3A Nieto Industries had sales in 2011 of $6,400,000 and gross profit of $1,100,000. Management is considering two alternative budget plans to increase its gross profit in 2012.

Plan A would increase the selling price per unit from $8.00 to $8.40. Sales volume would decrease by 5% from its 2011 level. Plan B would decrease the selling price per unit by $0.50. The marketing department expects that the sales volume would increase by 150,000 units.

At the end of 2011, Nieto has 40,000 units of inventory on hand. If Plan A is accepted, the 2012 ending inventory should be equal to 5% of the 2012 sales. If Plan B is accepted, the ending inventory should be equal to 50,000 units. Each unit produced will cost $1.80 in direct labor, $1.25 in direct materials, and $1.20 in variable overhead. The fixed overhead for 2012 should be $1,895,000.

Instructions

(c) Unit cost: Plan A $6.75, Plan B $6.22
(d) Gross profit: Plan A $1,254,000, Plan B $1,216,000

(a) Prepare a sales budget for 2012 under each plan.
(b) Prepare a production budget for 2012 under each plan.
(c) Compute the production cost per unit under each plan. Why is the cost per unit different for each of the two plans? (Round to two decimals.)
(d) Which plan should be accepted? (*Hint:* Compute the gross profit under each plan.)

Prepare cash budget for 2 months.
(SO 5)

P9-4A Dinkle Company prepares monthly cash budgets. Relevant data from operating budgets for 2012 are:

	January	February
Sales	$350,000	$400,000
Direct materials purchases	110,000	130,000
Direct labor	90,000	100,000
Manufacturing overhead	70,000	75,000
Selling and administrative expenses	79,000	86,000

All sales are on account. Collections are expected to be 50% in the month of sale, 30% in the first month following the sale, and 20% in the second month following the sale. Sixty percent (60%) of direct materials purchases are paid in cash in the month of purchase, and the balance due is paid in the month following the purchase. All other items above are paid in the month incurred except for selling and administrative expenses that include $1,000 of depreciation per month.

Other data:

1. Credit sales: November 2011, $260,000; December 2011, $320,000.
2. Purchases of direct materials: December 2011, $100,000.
3. Other receipts: January—Collection of December 31, 2011, notes receivable $15,000; February—Proceeds from sale of securities $6,000.
4. Other disbursements: February—Withdrawal of $5,000 cash for personal use of owner, Nick Haniwall.

The company's cash balance on January 1, 2012, is expected to be $60,000. The company wants to maintain a minimum cash balance of $50,000.

(a) January: collections $323,000, payments $106,000
(b) Ending cash balance: January $54,000, February $50,000

Instructions

(a) Prepare schedules for (1) expected collections from customers and (2) expected payments for direct materials purchases.
(b) Prepare a cash budget for January and February in columnar form.

Prepare purchases and income statement budgets for a merchandiser.
(SO 6)

P9-5A The budget committee of Hardesty Company collects the following data for its San Miguel Store in preparing budgeted income statements for May and June 2012.

1. Sales for May are expected to be $800,000. Sales in June and July are expected to be 10% higher than the preceding month.

2. Cost of goods sold is expected to be 75% of sales.
3. Company policy is to maintain ending merchandise inventory at 20% of the following month's cost of goods sold.
4. Operating expenses are estimated to be:

Sales salaries	$30,000 per month
Advertising	5% of monthly sales
Delivery expense	3% of monthly sales
Sales commissions	4% of monthly sales
Rent expense	$5,000 per month
Depreciation	$800 per month
Utilities	$600 per month
Insurance	$500 per month

5. Income taxes are estimated to be 30% of income from operations.

(a) Purchases:
May $612,000
June $673,200
(b) Net income:
May $46,970
June $54,250

Instructions

(a) Prepare the merchandise purchases budget for each month in columnar form.
(b) Prepare budgeted income statements for each month in columnar form. Show in the statements the details of cost of goods sold.

P9-6A Clarke Industries' balance sheet at December 31, 2011, is presented below.

Prepare budgeted income statement and balance sheet. (SO 4, 5)

CLARKE INDUSTRIES
Balance Sheet
December 31, 2011

Assets

Current assets		
Cash		$ 7,500
Accounts receivable		82,500
Finished goods inventory (2,000 units)		30,000
Total current assets		120,000
Property, plant, and equipment		
Equipment	$40,000	
Less: Accumulated depreciation	10,000	30,000
Total assets		$150,000

Liabilities and Stockholders' Equity

Liabilities		
Notes payable		$ 25,000
Accounts payable		45,000
Total liabilities		70,000
Stockholders' equity		
Common stock	$50,000	
Retained earnings	30,000	
Total stockholders' equity		80,000
Total liabilities and stockholders' equity		$150,000

Additional information accumulated for the budgeting process is as follows.

Budgeted data for the year 2012 include the following.

	4th Qtr. of 2012	Year 2012 Total
Sales budget (8,000 units at $35)	$84,000	$280,000
Direct materials used	17,000	69,400
Direct labor	12,500	56,600
Manufacturing overhead applied	10,000	54,000
Selling and administrative expenses	18,000	76,000

To meet sales requirements and to have 3,000 units of finished goods on hand at December 31, 2012, the production budget shows 9,000 required units of output. The total unit cost of production is expected to be $20. Clarke Industries uses the first-in, first-out (FIFO) inventory costing method. Selling and administrative expenses include $4,000 for depreciation on equipment. Interest expense is expected to be $3,500 for the year. Income taxes are expected to be 30% of income before income taxes.

All sales and purchases are on account. It is expected that 60% of quarterly sales are collected in cash within the quarter and the remainder is collected in the following quarter. Direct materials purchased from suppliers are paid 50% in the quarter incurred and the remainder in the following quarter. Purchases in the fourth quarter were the same as the materials used. In 2012, the company expects to purchase additional equipment costing $19,000. It expects to pay $8,000 on notes payable plus all interest due and payable to December 31 (included in interest expense $3,500, above). Accounts payable at December 31, 2012, includes amounts due suppliers (see above) plus other accounts payable of $5,700. In 2012, the company expects to declare and pay a $5,000 cash dividend. Unpaid income taxes at December 31 will be $5,000. The company's cash budget shows an expected cash balance of $7,950 at December 31, 2012.

Instructions

Net income $35,350
Total assets $146,550

Prepare a budgeted income statement for 2012 and a budgeted balance sheet at December 31, 2012. In preparing the income statement, you will need to compute cost of goods manufactured (direct materials + direct labor + manufacturing overhead) and finished goods inventory (December 31, 2012).

Problems: Set B

Prepare budgeted income statement and supporting budgets.
(SO 3, 4)

P9-1B Suppan Farm Supply Company manufactures and sells a fertilizer called Basic II. The following data are available for preparing budgets for Basic II for the first 2 quarters of 2011.

1. Sales: Quarter 1, 40,000 bags; quarter 2, 50,000 bags. Selling price is $65 per bag.
2. Direct materials: Each bag of Basic II requires 6 pounds of Crup at a cost of $4 per pound and 10 pounds of Dert at $1.50 per pound.
3. Desired inventory levels:

Type of Inventory	January 1	April 1	July 1
Basic II (bags)	10,000	15,000	20,000
Crup (pounds)	9,000	12,000	15,000
Dert (pounds)	15,000	20,000	25,000

4. Direct labor: Direct labor time is 15 minutes per bag at an hourly rate of $10 per hour.
5. Selling and administrative expenses are expected to be 10% of sales plus $160,000 per quarter.
6. Income taxes are expected to be 30% of income from operations.

Your assistant has prepared two budgets: (1) The manufacturing overhead budget shows expected costs to be 100% of direct labor cost. (2) The direct materials budget for Dert which shows the cost of Dert to be $682,500 in quarter 1 and $832,500 in quarter 2.

Instructions

Net income $689,500
Cost per bag $44.00

Prepare the budgeted income statement for the first 6 months of 2011 and all required supporting budgets by quarters. (*Note:* Use variable and fixed in the selling and administrative expense budget.) Do not prepare the manufacturing overhead budget or the direct materials budget for Dert.

Prepare sales, production, direct materials, direct labor, and income statement budgets.
(SO 3, 4)

P9-2B Durham Inc. is preparing its annual budgets for the year ending December 31, 2011. Accounting assistants furnish the following data.

	Product LN 35	Product LN 40
Sales budget:		
Anticipated volume in units	400,000	240,000
Unit selling price	$25	$35
Production budget:		
Desired ending finished goods units	30,000	25,000
Beginning finished goods units	20,000	15,000
Direct materials budget:		
Direct materials per unit (pounds)	2	3
Desired ending direct materials pounds	50,000	20,000
Beginning direct materials pounds	40,000	10,000
Cost per pound	$2	$3
Direct labor budget:		
Direct labor time per unit	0.5	0.75
Direct labor rate per hour	$12	$12
Budgeted income statement:		
Total unit cost	$11	$20

An accounting assistant has prepared the detailed manufacturing overhead budget and the selling and administrative expense budget. The latter shows selling expenses of $750,000 for product LN 35 and $590,000 for product LN 40, and administrative expenses of $420,000 for product LN 35 and $380,000 for product LN 40. Income taxes are expected to be 30%.

(a) Total sales $18,400,000
(b) Required production units: LN 35, 410,000
(c) Total cost of direct materials purchases $3,940,000
(d) Total direct labor cost $4,710,000
(e) Net income $4,942,000

Instructions

Prepare the following budgets for the year. Show data for each product. You do not need to prepare quarterly budgets.

(a) Sales
(b) Production
(c) Direct materials
(d) Direct labor
(e) Income statement (*Note:* Income taxes are not allocated to the products.)

P9-3B Speier Industries has sales in 2011 of $5,600,000 (800,000 units) and gross profit of $1,344,000. Management is considering two alternative budget plans to increase its gross profit in 2012.

Prepare sales and production budgets and compute cost per unit under two plans. (SO 3, 4)

Plan A would increase the selling price per unit from $7.00 to $7.60. Sales volume would decrease by 10% from its 2011 level. Plan B would decrease the selling price per unit by 5%. The marketing department expects that the sales volume would increase by 100,000 units.

At the end of 2011, Speier has 70,000 units on hand. If Plan A is accepted, the 2012 ending inventory should be equal to 90,000 units. If Plan B is accepted, the ending inventory should be equal to 100,000 units. Each unit produced will cost $2.00 in direct materials, $1.50 in direct labor, and $0.50 in variable overhead. The fixed overhead for 2012 should be $925,000.

Instructions

(a) Prepare a sales budget for 2012 under (1) Plan A and (2) Plan B.
(b) Prepare a production budget for 2012 under (1) Plan A and (2) Plan B.
(c) Compute the cost per unit under (1) Plan A and (2) Plan B. Explain why the cost per unit is different for each of the two plans. (Round to two decimals.)
(d) Which plan should be accepted? (*Hint:* Compute the gross profit under each plan.)

(c) Unit cost: Plan A $5.25 Plan B $4.99
(d) Gross profit: Plan A $1,692,000 Plan B $1,494,000

P9-4B Vidro Company prepares monthly cash budgets. Relevant data from operating budgets for 2012 are:

Prepare cash budget for 2 months. (SO 5)

	January	February
Sales	$350,000	$400,000
Direct materials purchases	120,000	110,000
Direct labor	85,000	115,000
Manufacturing overhead	60,000	75,000
Selling and administrative expenses	75,000	80,000

All sales are on account. Collections are expected to be 60% in the month of sale, 30% in the first month following the sale, and 10% in the second month following the sale.

Thirty percent (30%) of direct materials purchases are paid in cash in the month of purchase, and the balance due is paid in the month following the purchase. All other items above are paid in the month incurred. Depreciation has been excluded from manufacturing overhead and selling and administrative expenses.

Other data:

1. Credit sales: November 2011, $200,000; December 2011, $280,000.
2. Purchases of direct materials: December 2011, $90,000.
3. Other receipts: January—Collection of December 31, 2011, interest receivable $3,000;
   February—Proceeds from sale of securities $5,000.
4. Other disbursements: February—payment of $20,000 for land.

The company's cash balance on January 1, 2012, is expected to be $50,000. The company wants to maintain a minimum cash balance of $40,000.

(a) January: collections $314,000
payments $99,000
(b) Ending cash balance:
January $48,000
February $40,000

Instructions

(a) Prepare schedules for (1) expected collections from customers and (2) expected payments for direct materials purchases.
(b) Prepare a cash budget for January and February in columnar form.

Prepare purchases and income statement budgets for a merchandiser.
(SO 6)

P9-5B The budget committee of Guzman Company collects the following data for its Westwood Store in preparing budgeted income statements for July and August 2011.

1. Expected sales: July $400,000, August $450,000, September $500,000.
2. Cost of goods sold is expected to be 60% of sales.
3. Company policy is to maintain ending merchandise inventory at 20% of the following month's cost of goods sold.
4. Operating expenses are estimated to be:

Sales salaries	$50,000 per month
Advertising	4% of monthly sales
Delivery expense	2% of monthly sales
Sales commissions	3% of monthly sales
Rent expense	$3,000 per month
Depreciation	$700 per month
Utilities	$500 per month
Insurance	$300 per month

5. Income taxes are estimated to be 30% of income from operations.

Instructions

(a) Prepare the merchandise purchases budget for each month in columnar form.
(b) Prepare budgeted income statements for each month in columnar form. Show the details of cost of goods sold in the statements.

(a) Purchases: July $246,000
August $276,000
(b) Net income: July $48,650
August $59,500

Problems: Set C

Visit the book's companion website at **www.wiley.com/college/weygandt**, and choose the Student Companion site, to access Problem Set C.

Waterways Continuing Problem

(This is a continuation of the Waterways Problem from Chapters 1 through 8.)

WCP9 Waterways Corporation is preparing its budget for the coming year, 2012. The first step is to plan for the first quarter of that coming year. The company has gathered information from its managers in preparation of the budgeting process. This problem asks you to prepare the various budgets that comprise the master budget for 2012.

Go to the book's companion website,
www.wiley.com/college/weygandt,
to find the remainder of this problem.

broadening your perspective

Decision Making Across the Organization

BYP9-1 Lanier Corporation operates on a calendar-year basis. It begins the annual budgeting process in late August when the president establishes targets for the total dollar sales and net income before taxes for the next year.

The sales target is given first to the marketing department. The marketing manager formulates a sales budget by product line in both units and dollars. From this budget, sales quotas by product line in units and dollars are established for each of the corporation's sales districts. The marketing manager also estimates the cost of the marketing activities required to support the target sales volume and prepares a tentative marketing expense budget.

The executive vice president uses the sales and profit targets, the sales budget by product line, and the tentative marketing expense budget to determine the dollar amounts that can be devoted to manufacturing and corporate office expense. The executive vice president prepares the budget for corporate expenses. She then forwards to the production department the product-line sales budget in units and the total dollar amount that can be devoted to manufacturing.

The production manager meets with the factory managers to develop a manufacturing plan that will produce the required units when needed within the cost constraints set by the executive vice president. The budgeting process usually comes to a halt at this point because the production department does not consider the financial resources allocated to be adequate.

When this standstill occurs, the vice president of finance, the executive vice president, the marketing manager, and the production manager meet together to determine the final budgets for each of the areas. This normally results in a modest increase in the total amount available for manufacturing costs and cuts in the marketing expense and corporate office expense budgets. The total sales and net income figures proposed by the president are seldom changed. Although the participants are seldom pleased with the compromise, these budgets are final. Each executive then develops a new detailed budget for the operations in his or her area.

None of the areas has achieved its budget in recent years. Sales often run below the target. When budgeted sales are not achieved, each area is expected to cut costs so that the president's profit target can be met. However, the profit target is seldom met because costs are not cut enough. In fact, costs often run above the original budget in all functional areas (marketing, production, and corporate office).

The president is disturbed that Lanier has not been able to meet the sales and profit targets. He hired a consultant with considerable experience with companies in Lanier's industry. The consultant reviewed the budgets for the past 4 years. He concluded that the product line sales budgets were reasonable and that the cost and expense budgets were adequate for the budgeted sales and production levels.

Instructions

With the class divided into groups, answer the following.

(a) Discuss how the budgeting process employed by Lanier Corporation contributes to the failure to achieve the president's sales and profit targets.

(b) Suggest how Lanier Corporation's budgeting process could be revised to correct the problems.

(c) Should the functional areas be expected to cut their costs when sales volume falls below budget? Explain your answer. (CMA adapted)

Managerial Analysis

BYP9-2 Bedner & Flott Inc. manufactures ergonomic devices for computer users. Some of its more popular products include glare screens (for computer monitors), keyboard stands with wrist rests, and carousels that allow easy access to discs. Over the past 5 years, it experienced rapid growth, with sales of all products increasing 20% to 50% each year.

Last year, some of the primary manufacturers of computers began introducing new products with some of the ergonomic designs, such as glare screens and wrist rests, already built in. As a result, sales of Bedner & Flott's accessory devices have declined somewhat. The company believes that the disc carousels will probably continue to show growth, but that the other products will probably continue to decline. When the next year's budget was prepared, increases were built into research and development so that

replacement products could be developed or the company could expand into some other product line. Some product lines being considered are general-purpose ergonomic devices including back supports, foot rests, and sloped writing pads.

The most recent results have shown that sales decreased more than was expected for the glare screens. As a result, the company may have a shortage of funds. Top management has therefore asked that all expenses be reduced 10% to compensate for these reduced sales. Summary budget information is as follows.

Direct materials	$240,000
Direct labor	110,000
Insurance	50,000
Depreciation	90,000
Machine repairs	30,000
Sales salaries	50,000
Office salaries	80,000
Factory salaries (indirect labor)	50,000
Total	$700,000

Instructions

Using the information above, answer the following questions.

(a) What are the implications of reducing each of the costs? For example, if the company reduces direct materials costs, it may have to do so by purchasing lower-quality materials. This may affect sales in the long run.

(b) Based on your analysis in (a), what do you think is the best way to obtain the $70,000 in cost savings requested? Be specific. Are there any costs that cannot or should not be reduced? Why?

Real-World Focus

BYP9-3 Network Computing Devices, Inc. was founded in 1988 in Mountain View, California. The company develops software products such as X-terminals, Z-mail, PC X-ware, and related hardware products. Presented below is a discussion by management in its annual report.

NETWORK COMPUTING DEVICES, INC.
Management Discussion

The Company's operating results have varied significantly, particularly on a quarterly basis, as a result of a number of factors, including general economic conditions affecting industry demand for computer products, the timing and market acceptance of new product introductions by the Company and its competitors, the timing of significant orders from large customers, periodic changes in product pricing and discounting due to competitive factors, and the availability of key components, such as video monitors and electronic subassemblies, some of which require substantial order lead times. The Company's operating results may fluctuate in the future as a result of these and other factors, including the Company's success in developing and introducing new products, its product and customer mix, and the level of competition which it experiences. The Company operates with a small backlog. Sales and operating results, therefore, generally depend on the volume and timing of orders received, which are difficult to forecast. The Company has experienced slowness in orders from some customers during the first quarter of each calendar year due to budgeting cycles common in the computer industry. In addition, sales in Europe typically are adversely affected in the third calendar quarter as many European customers reduce their business activities during the month of August.

Due to the Company's rapid growth rate and the effect of new product introductions on quarterly revenues, these seasonal trends have not materially impacted the Company's results of operations to date. However, as the Company's product lines mature and its rate of revenue growth declines, these seasonal factors may become more evident. Additionally, the Company's international sales are denominated in U.S. dollars, and an increase or decrease in the value of the U.S. dollar relative to foreign currencies could make the Company's products less or more competitive in those markets.

Instructions

(a) Identify the factors that affect the budgeting process at Network Computing Devices, Inc.
(b) Explain the additional budgeting concerns created by the international operations of the company.

Exploring the Web

BYP9-4 Information regarding many approaches to budgeting can be found on the Web. The following activity investigates the merits of "zero-based" budgeting, as discussed by Michael LaFaive, Director of the Mackinac Center for Public Policy.

Address: **www.mackinac.org/article.aspx?ID=5928,** or go to **www.wiley.com/college/weygandt**

Instructions

Read the article at the website and answer the following questions.
(a) How does zero-based budgeting differ from standard budgeting procedures?
(b) What are some potential advantages of zero-based budgeting?
(c) What are some potential disadvantages of zero-based budgeting?
(d) How often do departments in Oklahoma undergo zero-based budgeting?

Communication Activity

BYP9-5 In order to better serve their rural patients, Drs. Dan and Jack Fleming (brothers) began giving safety seminars. Especially popular were their "emergency-preparedness" talks given to farmers. Many people asked whether the "kit" of materials the doctors recommended for common farm emergencies was commercially available.

After checking with several suppliers, the doctors realized that no other company offered the supplies they recommended in their seminars, packaged in the way they described. Their wives, Julie and Amy, agreed to make a test package by ordering supplies from various medical supply companies and assembling them into a "kit" that could be sold at the seminars. When these kits proved a runaway success, the sisters-in-law decided to market them. At the advice of their accountant, they organized this venture as a separate company, called Life Protection Products (LPP), with Julie Fleming as CEO and Amy Fleming as Secretary-Treasurer.

LPP soon started receiving requests for the kits from all over the country, as word spread about their availability. Even without advertising, LPP was able to sell its full inventory every month. However, the company was becoming financially strained. Julie and Amy had about $100,000 in savings, and they invested about half that amount initially. They believed that this venture would allow them to make money. However, at the present time, only about $30,000 of the cash remains, and the company is constantly short of cash.

Julie has come to you for advice. She does not understand why the company is having cash flow problems. She and Amy have not even been withdrawing salaries. However, they have rented a local building and have hired two more full-time workers to help them cope with the increasing demand. They do not think they could handle the demand without this additional help.

Julie is also worried that the cash problems mean that the company may not be able to support itself. She has prepared the cash budget shown on page 432. All seminar customers pay for their products in full at the time of purchase. In addition, several large companies have ordered the kits for use by employees who work in remote sites. They have requested credit terms and have been allowed to pay in the month following the sale. These large purchasers amount to about 25% of the sales at the present time. LPP purchases the materials for the kits about 2 months ahead of time. Julie and Amy are considering slowing the growth of the company by simply purchasing less materials, which will mean selling fewer kits.

The workers are paid weekly. Julie and Amy need about $15,000 cash on hand at the beginning of the month to pay for purchases of raw materials. Right now they have been using cash from their savings, but as noted, only $30,000 is left.

Instructions

Write a response to Julie Fleming. Explain why LPP is short of cash. Will this company be able to support itself? Explain your answer. Make any recommendations you deem appropriate.

LIFE PROTECTION PRODUCTS
Cash Budget
For the Quarter Ending June 30, 2012

	April	May	June
Cash balance, beginning	$15,000	$15,000	$15,000
Cash received			
From prior month sales	5,000	7,500	12,500
From current sales	15,000	22,500	37,500
Total cash on hand	35,000	45,000	65,000
Cash payments			
To employees	3,000	3,000	3,000
For products	25,000	35,000	45,000
Miscellaneous expenses	5,000	6,000	7,000
Postage	1,000	1,000	1,000
Total cash payments	34,000	45,000	56,000
Cash balance	$ 1,000	$ 0	$ 9,000
Borrow from savings	$14,000	$15,000	$ 1,000
Borrow from bank?	$ 0	$ 0	$ 5,000

Ethics Case

BYP9-6 You are an accountant in the budgetary, projections, and special projects department of American Conductor, Inc., a large manufacturing company. The president, William Brown, asks you on very short notice to prepare some sales and income projections covering the next 2 years of the company's much heralded new product lines. He wants these projections for a series of speeches he is making while on a 2-week trip to eight East Coast brokerage firms. The president hopes to bolster American's stock sales and price.

You work 23 hours in 2 days to compile the projections, hand deliver them to the president, and are swiftly but graciously thanked as he departs. A week later you find time to go over some of your computations and discover a miscalculation that makes the projections grossly overstated. You quickly inquire about the president's itinerary and learn that he has made half of his speeches and has half yet to make. You are in a quandary as to what to do.

Instructions

(a) What are the consequences of telling the president of your gross miscalculations?
(b) What are the consequences of *not* telling the president of your gross miscalculations?
(c) What are the ethical considerations to you and the president in this situation?

"All About You" Activity

BYP9-7 The "All About You" feature in this chapter emphasizes that in order to get your personal finances under control, you need to prepare a personal budget. Assume that you have compiled the following information regarding your expected cash flows for a typical month.

Rent payment	$ 400	Miscellaneous costs	$110
Interest income	50	Savings	50
Income tax withheld	300	Eating out	150
Electricity bill	22	Telephone and Internet costs	90
Groceries	80	Student loan payments	275
Wages earned	2,000	Entertainment costs	250
Insurance	100	Transportation costs	150

Instructions

Using the information above, prepare a personal budget. In preparing this budget, use the format found at *http://financialplan.about.com/cs/budgeting/l/blbudget.htm*. Just skip any unused line items.

Answers to ***Insight*** *and* ***Accounting Across the Organization*** *Questions*

Business Often Feel Too Busy to Plan for the Future, p. 390

Q: Describe a situation in which a business "sells as much as it can" but cannot "keep its employees paid."

A: If sales are made to customers on credit and collection is slow, the company may find that it does not have enough cash to pay employees or suppliers. Without these resources, the company will fail to survive.

Which Budget Approach Do You Prefer?, p. 392

Q: What approach did Time Warner use to prepare the old budget? What approach did it use to prepare the new budget?

A: Time Warner used a "top-down" approach to prepare the old budget since its goals were determined by top management. It used a participative approach to prepare the new budget since each operating unit set goals.

Without a Budget, Can the Games Begin?, p. 405

Q: Why does it matter whether the Olympic Games exceed their budget?

A: If the Olympic Games exceed their budget, taxpayers of the sponsoring community and country will end up footing the bill. Depending on the size of the losses, and the resources of the community, this could produce a substantial burden. As a result, other communities might be reluctant to host the Olympics in the future.

Budget Shortfalls as Far as the Eye Can See, p. 409

Q: Why would a university's budgeted scholarships probably fall when the stock market suffers a serious drop?

A: Scholarships typically cannot be paid out of the "principal" portion of donations made to scholarship endowment funds. Instead, scholarships are usually funded through earnings generated by endowment investments. Any excess earnings above current-year scholarship needs can be used for scholarships in subsequent years. But a serious drop in the value of endowment investments can wipe out previous earnings, in some cases completely eliminating funds available for scholarships.

Authors' Comments on **All About You:** ***Avoiding Personal Financial Disaster, p. 410***

We are concerned that the personal budgets presented on websites and in financial planning textbooks often list student loans among the sources of income. This type of thinking can lead to an overreliance on debt during college, and will result in accumulation of large amounts of debt that must be repaid. We would prefer a format that lists nondebt sources of income, then subtracts expenses, then shows debt borrowed. This format emphasizes an important point: Just like a business, in the short run you can borrow money when your cash inflows are not sufficient to meet your outflows, but in the long run you need to learn to live within your income, and your budget.

Answers to ***Self-Study Questions***

1. c 2. b 3. a 4. b 5. b 6. d 7. d 8. a 9. c 10. a 11. a 12. b 13. c 14. d 15. c

Remember to go back to the navigator box on the chapter-opening page and check off your completed work.