

Chapter 23

Budgetary Planning

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 non-manufacturing companies.



The Navigator

Scan Study Objectives	■
Read Feature Story	■
Read Preview	■
Read text and answer DO IT! p. 1023 ■ p. 1026 ■ p. 1030 ■ p. 1035 ■	
Work Comprehensive DO IT! p. 1039	■
Review Summary of Study Objectives	■
Answer Self-Study Questions	■
Complete Assignments	■

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

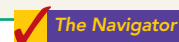


company actually made a profit because it kept its costs low (a feat few other dot-coms could boast of).

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.



Inside Chapter 23...

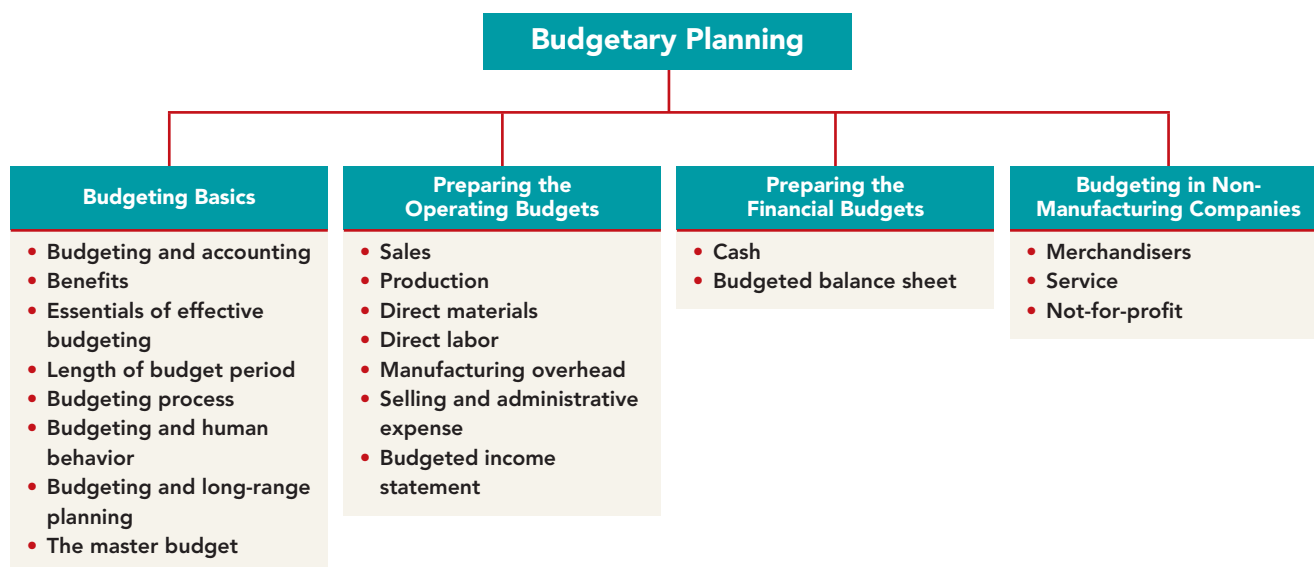
- **Businesses Often Feel Too Busy to Plan for the Future** (p. 1020)
- **Without a Budget, Can the Games Begin?** (p. 1034)
- **All About You: Avoiding Personal Financial Disaster** (p. 1038)

Preview of Chapter 23

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 23 are as follows.



BUDGETING BASICS

One of management's major responsibilities is planning. As explained in Chapter 19, **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 24.

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

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.

STUDY OBJECTIVE 1

Indicate the benefits of budgeting.

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

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**.

STUDY OBJECTIVE 2

State the essentials of effective budgeting.

Once adopted, the budget should be 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 recent study by Willard & Shullman Group Ltd. found that fewer than 14% of businesses with fewer than 500 employees prepare an annual budget or have a written business plan. In all, nearly 60% of these businesses have no plans on paper at all. 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 23-1 graphically displays the appropriate flow of budget data from bottom to top in an organization.

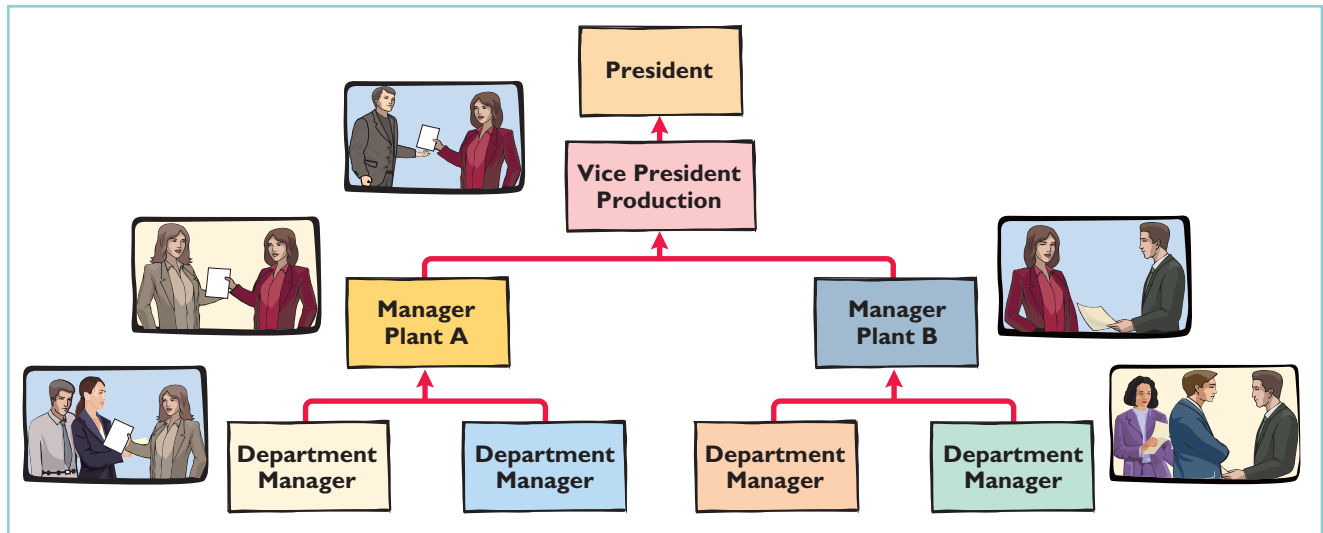


ETHICS NOTE

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

Illustration 23-1

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.

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.

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.

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In long-range planning, management also considers anticipated trends in the economic and political environment and how the company should cope with them.

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

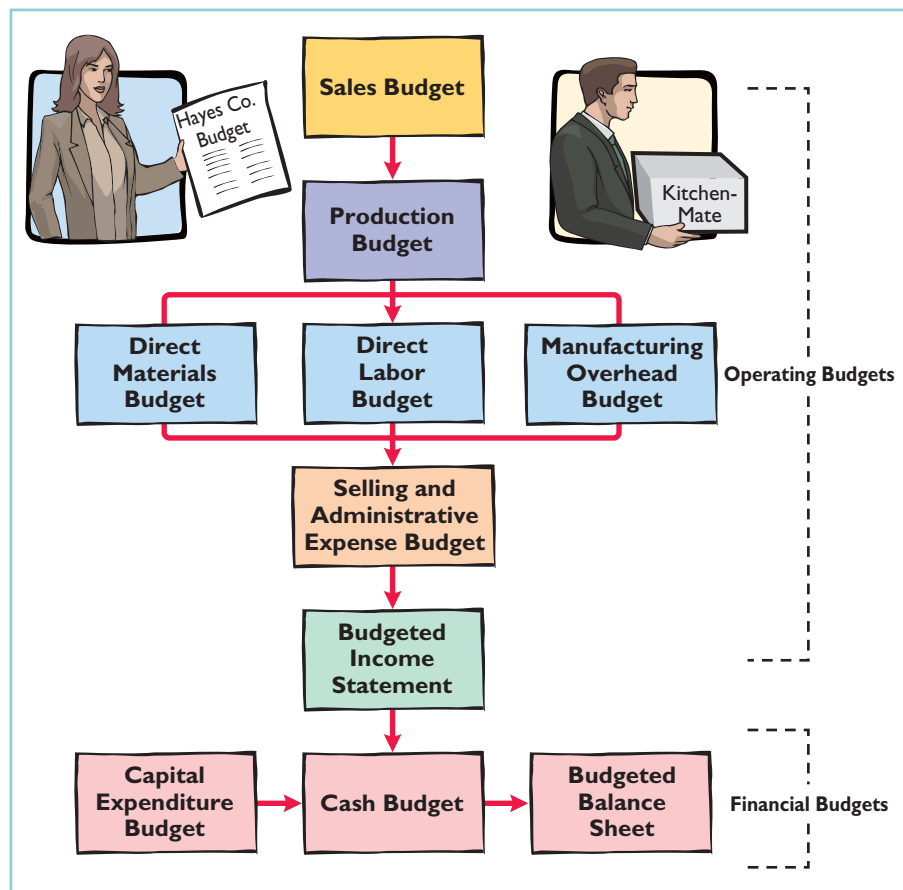
Identify the budgets that comprise the master budget.

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 23-2 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

Illustration 23-2
Components of the master budget



budgets. We will explain and illustrate each budget shown in Illustration 23-2 except the capital expenditure budget. That budget is discussed under the topic of capital budgeting in Chapter 26.

DO IT!

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

Long-range planning
Sales forecast
Master budget

Participative budgeting
Operating budgets
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.

Solution

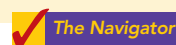
- | | |
|-----------------------|-----------------------------|
| 1. Sales forecast. | 4. Long-range planning. |
| 2. Operating budgets. | 5. Participative budgeting. |
| 3. Master budget. | 6. Financial budgets. |

Related exercise material: BE23-1, E23-1, and **DO IT!** 23-1.

BUDGET TERMINOLOGY

action plan

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



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, 2010. Hayes Company begins its annual budgeting process on September 1, 2009, and it completes the budget for 2010 by December 1, 2009.

Sales Budget

As shown in the master budget in Illustration 23-2, **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.

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.

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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 23-3 shows the sales budget for the year, by quarters, based on a sales price of \$60 per unit.

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

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 23-5 shows the production budget.

	A	B	C	D	E	F	G	H	I	J
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9										
10										
11										
12										
13										
14										

Direct Materials Units Required for Production	+	Desired Ending Direct Materials Units	-	Beginning Direct Materials Units	=	Required Direct Materials Units to Be Purchased
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Illustration 23-6
Formula for direct materials quantities

	A	B	C	D	E	F
1	SORIANO COMPANY					
2	Production Budget					
3	For the Year Ending December 31, 2010					
4		Quarter				
5		1	2	3	4	Year
6	Expected unit sales					
7	Add: Desired ending finished goods units ^a					
8	Total required units					
9	Less: Beginning finished goods units					
10	Required production units					
11	^a 25% of next quarter's unit sales					
12	^b Estimated first-quarter 2011 sales units $240,000 + (240,000 \times 10\%) = 264,000$; $264,000 \times 25\%$					
13	^c 25% of estimated first-quarter 2010 sales units $(240,000 \times 25\%)$					
14						

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Illustration 23-11
Selling and administrative
expense budget

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Illustration 23-12

Computation of total unit cost

Cost Element	Cost of One Kitchen-Mate			
	Illustration	Quantity	Unit Cost	Total
Direct materials	23-7	2 pounds	\$ 4.00	\$ 8.00
Direct labor	23-9	2 hours	\$10.00	20.00
Manufacturing overhead	23-10	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 \times \44). All data for the 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 23-13 shows the budgeted income statement.

Illustration 23-13

Budgeted income statement

HAYES COMPANY	
Budgeted Income Statement	
For the Year Ending December 31, 2010	
Sales (Illustration 23-3)	\$900,000
Cost of goods sold ($15,000 \times \$44$)	<u>660,000</u>
Gross profit	240,000
Selling and administrative expenses (Illustration 23-11)	<u>180,000</u>
Income from operations	60,000
Interest expense	<u>100</u>
Income before income taxes	59,900
Income tax expense	<u>12,000</u>
Net income	<u>\$ 47,900</u>

DO IT!

BUDGETED INCOME STATEMENT

Soriano Company is preparing its budgeted income statement for 2010. Relevant data pertaining to its sales, production, and direct materials budgets can be found in the Do It! exercise on page 1026.

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 2010 are \$12,000,000.

(a) Calculate the budgeted total unit cost. **(b)** Prepare the budgeted income statement for 2010.

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, 2010	
Sales (1,200,000 units from sales budget, page 1026)	\$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	<u>\$ 7,500,000</u>

Related exercise material: BE23-8, E23-11, and **DO IT!** 23-3.



PREPARING THE FINANCIAL BUDGETS

As shown in Illustration 23-2 (page 1022), 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 26; the other budgets are explained in the following sections.

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.

STUDY OBJECTIVE 5
Explain the principal sections of a cash budget.

The cash budget contains three sections (cash receipts, cash disbursements, and financing) and the beginning and ending cash balances, as shown in Illustration 23-14.

ANY COMPANY	
Cash Budget	
Beginning cash balance	\$X,XXX
Add: Cash receipts (Itemized)	<u>X,XXX</u>
Total available cash	X,XXX
Less: Cash disbursements (Itemized)	<u>X,XXX</u>
Excess (deficiency) of available cash over cash disbursements	X,XXX
Financing	<u>X,XXX</u>
Ending cash balance	<u><u>\$X,XXX</u></u>

Illustration 23-14
Basic form of a cash budget

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.

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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. Hayes Company's cash budget is based on the following assumptions.

1. The January 1, 2010, cash balance is expected to be \$38,000.
2. Sales (Illustration 23-3, page 1024): 60% are collected in the quarter sold and 40% are collected in the following quarter. Accounts receivable of \$60,000 at December 31, 2009, are expected to be collected in full in the first quarter of 2010.
3. Short-term investments are expected to be sold for \$2,000 cash in the first quarter.
4. Direct materials (Illustration 23-7, page 1026): 50% are paid in the quarter purchased and 50% are paid in the following quarter. Accounts payable of \$10,600 at December 31, 2009, are expected to be paid in full in the first quarter of 2010.
5. Direct labor (Illustration 23-9, page 1028): 100% is paid in the quarter incurred.
6. Manufacturing overhead (Illustration 23-10, page 1028) and selling and administrative expenses (Illustration 23-11, page 1029): 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, above) and cash payments for direct materials (assumption No. 4, above). These schedules are shown in Illustrations 23-15 and 23-16.

Illustration 23-15
Collections from customers

HAYES COMPANY				
Schedule of Expected Collections from Customers				
	Quarter			
	1	2	3	4
Accounts receivable, 12/31/09	\$ 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	<u>\$168,000</u>	<u>\$198,000</u>	<u>\$228,000</u>	<u>\$258,000</u>

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.

MANAGEMENT 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?

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, 2009, are as follows.

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

Illustration 23-18 on page 1035 shows Hayes Company’s budgeted balance sheet at December 31, 2010.

The computations and sources of the amounts are explained below.

Cash: Ending cash balance \$37,900, shown in the cash budget (Illustration 23-17, page 1033).

Accounts receivable: 40% of fourth-quarter sales \$270,000, shown in the schedule of expected collections from customers (Illustration 23-15, page 1032).

Finished goods inventory: Desired ending inventory 1,000 units, shown in the production budget (Illustration 23-5, page 1025) times the total unit cost \$44 (shown in Illustration 23-12, page 1030).

Raw materials inventory: Desired ending inventory 1,020 pounds, times the cost per pound \$4, shown in the direct materials budget (Illustration 23-7, page 1026).

Buildings and equipment: December 31, 2009, balance \$182,000, plus purchase of truck for \$10,000.

HAYES COMPANYBudgeted Balance Sheet
December 31, 2010**Illustration 23-18**

Budgeted balance sheet

<u>Assets</u>		
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		<u>\$337,980</u>
<u>Liabilities and Stockholders' Equity</u>		
Accounts payable		\$ 18,600
Common stock		225,000
Retained earnings		94,380
Total liabilities and stockholders' equity		<u>\$337,980</u>

Accumulated depreciation: December 31, 2009, balance \$28,800, plus \$15,200 depreciation shown in manufacturing overhead budget (Illustration 23-10, page 1028) and \$4,000 depreciation shown in selling and administrative expense budget (Illustration 23-11, page 1029).

Accounts payable: 50% of fourth-quarter purchases \$37,200, shown in schedule of expected payments for direct materials (Illustration 23-16, page 1033).

Common stock: Unchanged from the beginning of the year.

Retained earnings: December 31, 2009, balance \$46,480, plus net income \$47,900, shown in budgeted income statement (Illustration 23-13, page 1030).

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.

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

1036 Chapter 23 Budgetary Planning

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.

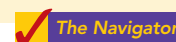
Solution

MARTIAN COMPANY
Cash Budget
For the Month Ending March 31, 2010

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 cash.

Related exercise material: BE23-9, E23-12, E23-13, E23-16, and **DO IT!** 23-4.



BUDGETING IN NON-MANUFACTURING COMPANIES

STUDY OBJECTIVE 6

Indicate the applicability of budgeting in non-manufacturing 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:

Illustration 23-19
Merchandise purchases formula

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

To illustrate, assume that the budget committee of Lima Company is preparing the merchandise purchases budget for July 2010. 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). Lima’s desired ending inventory is 30% of the following month’s cost of goods sold. Required merchandise purchases for July are \$214,200, as shown in Illustration 23-20.

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

LIMA COMPANY Merchandise Purchases Budget For the Month Ending July 31, 2010	
Budgeted cost of goods sold ($\$300,000 \times 70\%$)	\$ 210,000
Add: Desired ending merchandise inventory ($\$224,000 \times 30\%$)	67,200
Total	277,200
Less: Beginning merchandise inventory ($\$210,000 \times 30\%$)	63,000
Required merchandise purchases for July	<u><u>\$214,200</u></u>

Illustration 23-20
Merchandise purchases
budget

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.



Be sure to read **ALL ABOUT YOU: Avoiding Personal Financial Disaster** on page 1038 for information on how topics in this chapter apply to your personal life.

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.

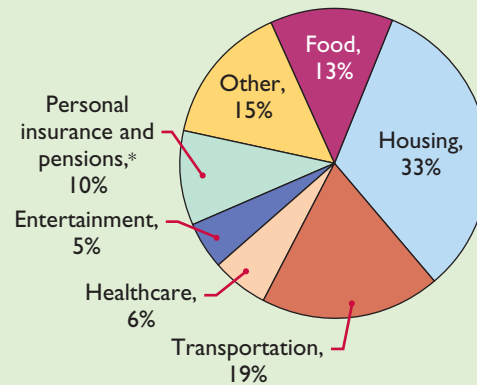
Some Facts

- * The average American household income is \$58,712, before taxes.
- * The average family spends \$5,931 on food each year. Of this, \$3,297 is for food consumed at home, and \$2,635 is for food consumed away from home.
- * The average family spends \$15,167 annually on housing costs. Of this amount, \$8,805 is the actual cost of shelter, \$3,183 is for utilities, and \$1,767 is for furnishings and equipment.
- * The average family spends \$8,344 per year on transportation. Of this, \$3,544 goes to vehicle purchase payments, and \$2,013 is spent on fuel. The average family spends only \$448 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/1/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.

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

Comprehensive DO IT!

Barrett Company has completed all operating budgets other than the income statement for 2010. Selected data from these budgets follow.

Sales: \$300,000

Purchases of raw materials: \$145,000

Ending inventory of raw materials: \$15,000

Direct labor: \$40,000

Manufacturing overhead: \$73,000, including \$3,000 of depreciation expense

Selling and administrative expenses: \$36,000 including depreciation expense of \$1,000

Interest expense: \$1,000

Principal payment on note: \$2,000

Dividends declared: \$2,000

Income tax rate: 30%

Other information:

Year-end accounts receivable: 4% of 2010 sales

Year-end accounts payable: 50% of ending inventory of raw materials

Interest, direct labor, manufacturing overhead, and selling and administrative expenses other than depreciation are paid as incurred.

Dividends declared and income taxes for 2010 will not be paid until 2011.

BARRETT COMPANY

Balance Sheet
December 31, 2009

<u>Assets</u>		
Cash		\$20,000
Raw materials inventory		10,000
Equipment	\$40,000	
Less: Accumulated depreciation	4,000	<u>36,000</u>
Total assets		<u>\$66,000</u>
<u>Liabilities and Stockholders' Equity</u>		
Accounts payable	\$ 5,000	
Notes payable	22,000	
Total liabilities		\$27,000
Common stock	25,000	
Retained earnings	14,000	<u>39,000</u>
Total liabilities and stockholders' equity		<u>\$66,000</u>

action plan

- ✓ Recall that beginning raw materials inventory plus purchases less ending raw materials inventory equals direct materials used.
- ✓ Prepare the budgeted income statement before the budgeted balance sheet.
- ✓ Use the standard form of a cash budget to determine cash on the budgeted balance sheet.
- ✓ Add budgeted depreciation expense to accumulated depreciation at the beginning of the year to determine accumulated depreciation on the budgeted balance sheet.
- ✓ Add budgeted net income to retained earnings from the beginning of the year and subtract dividends declared to determine retained earnings on the budgeted balance sheet.
- ✓ Verify that total assets equal total liabilities and stockholders' equity on the budgeted balance sheet.

Instructions

- (a) Calculate budgeted cost of goods sold.
- (b) Prepare a budgeted income statement for the year ending December 31, 2010.
- (c) Prepare a budgeted balance sheet as of December 31, 2010.

Solution to Comprehensive DO IT!

- (a) Beginning raw materials + Purchases – Ending raw materials = Cost of direct materials used (\$10,000 + \$145,000 – \$15,000 = \$140,000)
Direct materials used + Direct labor + Manufacturing overhead = (\$140,000 + \$40,000 + \$73,000 = \$253,000)

(b)

BARRETT COMPANY
Budgeted Income Statement
For the Year Ending December 31, 2010

Sales		\$300,000
Cost of goods sold		<u>253,000</u>
Gross profit		47,000
Selling and administrative expenses	\$36,000	
Interest expense	<u>1,000</u>	<u>37,000</u>
Income before income tax expense		10,000
Income tax expense (30%)		<u>3,000</u>
Net income		<u><u>\$ 7,000</u></u>

(c)

BARRETT COMPANY
Budgeted Balance Sheet
December 31, 2010

Assets		
Cash ⁽¹⁾		\$17,500
Accounts receivable (4% × \$300,000)		12,000
Raw materials inventory		15,000
Equipment	\$40,000	
Less: Accumulated depreciation	<u>8,000</u>	<u>32,000</u>
Total assets		<u><u>\$76,500</u></u>
Liabilities and Stockholders' Equity		
Accounts payable (50% × \$15,000)	\$ 7,500	
Income taxes payable	3,000	
Dividends payable	2,000	
Note payable	<u>20,000</u>	
Total liabilities		\$32,500
Common stock	25,000	
Retained earnings ⁽²⁾	<u>19,000</u>	<u>44,000</u>
Total liabilities and stockholders' equity		<u><u>\$76,500</u></u>

⁽¹⁾ Beginning cash balance		\$ 20,000
Add: Collections from customers (96% × \$300,000 sales)		<u>288,000</u>
Total available cash		308,000
Less: Disbursements		
Direct materials (\$5,000 + \$145,000 – \$7,500)	\$142,500	
Direct labor	40,000	
Manufacturing overhead	70,000	
Selling and administrative expenses	<u>35,000</u>	
Total disbursements		<u>287,500</u>
Excess of available cash over cash disbursements		20,500
Financing		
Repayments of principal	2,000	
Interest payments	<u>1,000</u>	<u>3,000</u>
Ending cash balance		<u><u>\$ 17,500</u></u>

⁽²⁾Beginning retained earnings + Net income – Dividends declared = Ending retained earnings
(\$14,000 + 7,000 – 2,000 = \$19,000)

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 master 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.



GLOSSARY



- Budget** A formal written statement of management's plans for a specified future time period, expressed in financial terms. (p. 1018).
- Budget committee** A group responsible for coordinating the preparation of the budget. (p. 1020).
- Budgetary slack** The amount by which a manager intentionally underestimates budgeted revenues or overestimates budgeted expenses in order to make it easier to achieve budgetary goals. (p. 1021).
- Budgeted balance sheet** A projection of financial position at the end of the budget period. (p. 1034).
- Budgeted income statement** An estimate of the expected profitability of operations for the budget period. (p. 1029).
- Cash budget** A projection of anticipated cash flows. (p. 1031).
- Direct labor budget** A projection of the quantity and cost of direct labor necessary to meet production requirements. (p. 1027).
- Direct materials budget** An estimate of the quantity and cost of direct materials to be purchased. (p. 1025).
- Financial budgets** Individual budgets that focus primarily on the cash resources needed to fund expected operations and planned capital expenditures. (p. 1022).
- Long-range planning** A formalized process of selecting strategies to achieve long-term goals and developing policies and plans to implement the strategies. (p. 1021).
- Manufacturing overhead budget** An estimate of expected manufacturing overhead costs for the budget period. (p. 1028).
- Master budget** A set of interrelated budgets that constitutes a plan of action for a specific time period. (p. 1022).
- Merchandise purchases budget** The estimated cost of goods to be purchased by a merchandiser to meet expected sales. (p. 1036).
- Operating budgets** Individual budgets that result in a budgeted income statement. (p. 1022).
- Participative budgeting** A budgetary approach that starts with input from lower-level managers and works upward so that managers at all levels participate. (p. 1020).
- Production budget** A projection of the units that must be produced to meet anticipated sales. (p. 1024).
- Sales budget** An estimate of expected sales revenue for the budget period. (p. 1023).
- Sales forecast** The projection of potential sales for the industry and the company's expected share of such sales. (p. 1020).
- Selling and administrative expense budget** A projection of anticipated selling and administrative expenses for the budget period. (p. 1029).



SELF-STUDY QUESTIONS

Answers are at the end of the chapter.

- (SO 1) 1. Which of the following is not a benefit of budgeting?
- Management can plan ahead.
 - An early warning system is provided for potential problems.
 - It enables disciplinary action to be taken at every level of responsibility.
 - The coordination of activities is facilitated.
- (SO 1) 2. A budget:
- is the responsibility of management accountants.
 - is the primary method of communicating agreed-upon objectives throughout an organization.
 - ignores past performance because it represents management's plans for a future time period.
 - may promote efficiency but has no role in evaluating performance.
- (SO 2) 3. The essentials of effective budgeting do *not* include:
- top-down budgeting.
 - management acceptance.
 - research and analysis.
 - sound organizational structure.
- (SO 2) 4. Compared to budgeting, long-range planning generally has the:
- same amount of detail.
 - longer time period.
 - same emphasis.
 - same time period.
- (SO 3) 5. A sales budget is:
- derived from the production budget.
 - management's best estimate of sales revenue for the year.
 - not the starting point for the master budget.
 - prepared only for credit sales.
- (SO 3) 6. The formula for the production budget is budgeted sales in units plus:
- desired ending merchandise inventory less beginning merchandise inventory.
 - beginning finished goods units less desired ending finished goods units.
 - desired ending direct materials units less beginning direct materials units.
 - 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:
- 9,400.
 - 9,500.
 - 9,700.
 - 10,700.
- (SO 4) 8. The formula for computing the direct labor budget is to multiply the direct labor cost per hour by the:
- total required direct labor hours.
 - physical units to be produced.
 - equivalent units to be produced.
 - No correct answer is given.
9. Each of the following budgets is used in preparing the budgeted income statement *except* the: (SO 4)
- sales budget.
 - selling and administrative budget.
 - capital expenditure budget.
 - direct labor budget.
10. The budgeted income statement is: (SO 4)
- the end-product of the operating budgets.
 - the end-product of the financial budgets.
 - the starting point of the master budget.
 - dependent on cash receipts and cash disbursements.
11. The budgeted balance sheet is: (SO 5)
- developed from the budgeted balance sheet for the preceding year and the budgets for the current year.
 - the last operating budget prepared.
 - used to prepare the cash budget.
 - All of the above.
12. The format of a cash budget is: (SO 5)
- Beginning cash balance + Cash receipts + Cash from financing – Cash disbursements = Ending cash balance.
 - Beginning cash balance + Cash receipts – Cash disbursements +/- Financing = Ending cash balance.
 - Beginning cash balance + Net income – Cash dividends = Ending cash balance.
 - Beginning cash balance + Cash revenues – Cash expenses = Ending cash balance.
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: (SO 5)
- \$96,000.
 - \$90,000.
 - \$78,000.
 - \$72,000.
14. The budget for a merchandiser differs from a budget for a manufacturer because: (SO 6)
- a merchandise purchases budget replaces the production budget.
 - the manufacturing budgets are not applicable.
 - None of the above.
 - Both (a) and (b) above.
15. In most cases, not-for-profit entities: (SO 6)
- prepare budgets using the same steps as those used by profit-oriented enterprises.
 - know budgeted cash receipts at the beginning of a time period, so they budget only for expenditures.
 - begin the budgeting process by budgeting expenditures rather than receipts.
 - 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 shortcomings?
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



- BE23-1** Noble 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 diagram of a master budget.*
(SO 3)
- BE23-2** Goody 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, 2010. *Prepare a sales budget.*
(SO 3)
- BE23-3** Sales budget data for Goody Company are given in BE23-2. 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 2010. *Prepare a production budget for 2 quarters.*
(SO 3)
- BE23-4** Ortiz Company has 1,600 pounds of raw materials in its December 31, 2010, ending inventory. Required production for January and February of 2011 are 4,000 and 5,500 units, respectively. Two pounds of raw materials are needed for each unit, and the estimated cost per pound *Prepare a direct materials budget for 1 month.*
(SO 3)

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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)

BE23-5 For Everly 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, 2010.

Prepare a manufacturing overhead budget.

(SO 3)

BE23-6 For Justus Inc. variable manufacturing overhead costs are expected to be \$20,000 in the first quarter of 2010 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.

Prepare a selling and administrative expense budget.

(SO 3)

BE23-7 Mize 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 2010. Fixed expenses are expected to be \$40,000 in each quarter. Prepare the selling and administrative expense budget by quarters and in total for 2010.

Prepare a budgeted income statement for the year.

(SO 4)

BE23-8 Perine 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, 2010.

Prepare data for a cash budget.

(SO 5)

BE23-9 Agee 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.

Determine required merchandise purchases for 1 month.

(SO 6)

BE23-10 Palermo 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.

DO IT! REVIEW



Identify budget terminology.

(SO 2, 3)

DO IT! 23-1 Use this list of terms to complete the sentences that follow.

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

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

Prepare sales, production, and direct materials budgets.

(SO 3)

DO IT! 23-2 Oak Creek Company is preparing its master budget for 2010. Relevant data pertaining to its sales, production, and direct materials budgets are as follows.

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 2011 are expected to be 10% higher than the budgeted sales for the first quarter of 2010.

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 2011 are 500,000 pounds.

Prepare the sales, production, and direct materials budgets by quarters for 2010.

DO IT! **23-3** Oak Creek Company is preparing its budgeted income statement for 2010. Relevant data pertaining to its sales, production, and direct materials budgets can be found in Do It! exercise 23-2 on page 1044.

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 2010 are \$7,000,000.

- (a) Calculate the budgeted total unit cost.
- (b) Prepare the budgeted income statement for 2010.


DO IT! **23-4** 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?

Determine amount of financing needed.

(SO 5)

EXERCISES



E23-1  Black Rose 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.

Explain the concept of budgeting.

(SO 1, 2, 3)

Instructions

Write a memo to Jack Bruno, the president of Black Rose 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.

E23-2 Zeller 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 Zeller faces, management budgets sales semiannually. Its projections for the first 2 quarters of 2010 are as follows.

Prepare a sales budget for 2 quarters.

(SO 3)



Product	Unit Sales	
	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, 2010. List the products and show for each quarter and for the 6 months, units, selling price, and total sales by product and in total.

E23-3 Roche and Young, CPAs, are preparing their service revenue (sales) budget for the coming year (2010). The practice is divided into three departments: auditing, tax, and consulting. Billable hours for each department, by quarter, are provided below.

Prepare a sales budget for four quarters.

(SO 3, 6)

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 2010 by listing the departments and showing for each quarter and the year in total, billable hours, billable rate, and total revenue.

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Prepare quarterly production budgets.

(SO 3)



E23-4 Turney Company produces and sells automobile batteries, the heavy-duty HD-240. The 2010 sales budget is as follows.

<u>Quarter</u>	<u>HD-240</u>
1	5,000
2	7,000
3	8,000
4	10,000

The January 1, 2010, 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 2011 are expected to be 30% higher than sales in the same quarter in 2010.

Instructions

Prepare quarterly production budgets for each quarter and in total for 2010.

Prepare a direct materials purchases budget.

(SO 3)

E23-5 Moreno Industries has adopted the following production budget for the first 4 months of 2011.

<u>Month</u>	<u>Units</u>	<u>Month</u>	<u>Units</u>
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, 2010, 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.

Prepare production and direct materials budgets by quarters for 6 months.

(SO 3)

E23-6 On January 1, 2011 the Batista Company budget committee has reached agreement on the following data for the 6 months ending June 30, 2011.

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, 2010, follow the same percentage relationships to production and sales that occur in 2011. 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

- Prepare a production budget by quarters for the 6-month period ended June 30, 2011.
- Prepare a direct materials budget by quarters for the 6-month period ended June 30, 2011.

Prepare a direct labor budget.

(SO 3)

E23-7 Neely, Inc., is preparing its direct labor budget for 2010 from the following production budget based on a calendar year.

<u>Quarter</u>	<u>Units</u>	<u>Quarter</u>	<u>Units</u>
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 2010. Wage rates are expected to be \$15 for the first 2 quarters and \$16 for quarters 3 and 4.

Prepare a manufacturing overhead budget for the year.

(SO 3)



E23-8 Hardin Company is preparing its manufacturing overhead budget for 2010. 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.

E23-9 Edington Company combines its operating expenses for budget purposes in a selling and administrative expense budget. For the first 6 months of 2010, 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.

Prepare a selling and administrative expense budget for 2 quarters.

(SO 3)

Instructions

Prepare a selling and administrative expense budget by quarters for the first 6 months of 2010.

E23-10 Tyson Chandler 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. Tyson Chandler 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, 2009.

Prepare a production and a direct materials budget.

(SO 3)

Instructions

- (a) Prepare a production budget for January and February 2010.
- (b) Prepare a direct materials budget for January 2010.

E23-11 Fuqua Company has accumulated the following budget data for the year 2010.

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.

Prepare a budgeted income statement for the year.

(SO 3, 4)

Instructions

- (a) Prepare a schedule showing the computation of cost of goods sold for 2010.
- (b) Prepare a budgeted income statement for 2010.

E23-12 Garza Company expects to have a cash balance of \$46,000 on January 1, 2010. Relevant monthly budget data for the first 2 months of 2010 are as follows.

Prepare a cash budget for 2 months.

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

(SO 5)

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. Garza 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.

E23-13 Pink Martini Corporation is projecting a cash balance of \$31,000 in its December 31, 2009, balance sheet. Pink Martini's schedule of expected collections from customers for the

Prepare a cash budget.

(SO 5)

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first quarter of 2010 shows total collections of \$180,000. The schedule of expected payments for direct materials for the first quarter of 2010 shows total payments of \$41,000. Other information gathered for the first quarter of 2010 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. Pink Martini 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 schedules of expected collections and payments.

(SO 5)

E23-14 NIU Company's budgeted sales and direct materials purchases are as follows.

	<u>Budgeted Sales</u>	<u>Budgeted D.M. Purchases</u>
January	\$200,000	\$30,000
February	220,000	35,000
March	270,000	41,000

NIU'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. NIU'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)

E23-15 Environmental Landscaping Inc. is preparing its budget for the first quarter of 2010. 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 2009 and expected service revenues for 2010 are: November 2009, \$90,000; December 2009, \$80,000; January 2010, \$100,000; February 2010, \$120,000; March 2010, \$130,000.

Purchases on landscaping supplies (direct materials) are paid 40% in the month of purchase and 60% the following month. Actual purchases for 2009 and expected purchases for 2010 are: December 2009, \$14,000; January 2010, \$12,000; February 2010, \$15,000; March 2010, \$18,000.

Instructions

(a) Prepare the following schedules for each month in the first quarter of 2010 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, 2010:

- (1) Accounts receivable.
- (2) Accounts payable.

Prepare a cash budget for two quarters.

(SO 5, 6)

E23-16 Donnegal 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 2010. 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 2010.

E23-17 In May 2010, 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.

Prepare a purchases budget and budgeted income statement for a merchandiser.

(SO 6)

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/veygandt, and choose the Student Companion site, to access Exercise Set B.



PROBLEMS: SET A

P23-1A Danner 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 2011.

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:

Prepare budgeted income statement and supporting budgets.

(SO 3, 4)



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 \$421,500 in quarter 2.

Instructions

Prepare the budgeted income statement for the first 6 months 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 Tarr.

Net income \$600,250
Cost per bag \$33.75



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Prepare sales, production, direct materials, direct labor, and income statement budgets.

(SO 3, 4)

P23-2A Larussa Inc. is preparing its annual budgets for the year ending December 31, 2011. Accounting assistants furnish the data shown below.

	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%.

- (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

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.)

Prepare sales and production budgets and compute cost per unit under two plans.

(SO 3, 4)

P23-3A Colt Industries had sales in 2010 of \$6,400,000 and gross profit of \$1,100,000. Management is considering two alternative budget plans to increase its gross profit in 2011.

Plan A would increase the selling price per unit from \$8.00 to \$8.40. Sales volume would decrease by 5% from its 2010 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 2010, Colt has 40,000 units of inventory on hand. If Plan A is accepted, the 2011 ending inventory should be equal to 5% of the 2011 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, \$2.00 in direct materials, and \$1.20 in variable overhead. The fixed overhead for 2011 should be \$1,895,000.

Instructions

- (c) Unit cost: Plan A \$7.50,
Plan B \$6.97
- (d) Gross profit:
Plan A \$684,000
Plan B \$503,500

- (a) Prepare a sales budget for 2011 under each plan.
- (b) Prepare a production budget for 2011 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)

P23-4A Haas Company prepares monthly cash budgets. Relevant data from operating budgets for 2011 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 2010, \$260,000; December 2010, \$320,000.
2. Purchases of direct materials: December 2010, \$100,000.
3. Other receipts: January—Collection of December 31, 2010, 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, Dewey Yaeger.

The company's cash balance on January 1, 2011, is expected to be \$60,000. The company wants to maintain a minimum cash balance of \$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.

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

P23-5A The budget committee of Deleon Company collects the following data for its San Miguel Store in preparing budgeted income statements for May and June 2011.

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.

Prepare purchases and income statement budgets for a merchandiser.

(SO 6)



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.

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

P23-6A Glendo Industries' balance sheet at December 31, 2010, is presented below and on the next page.

Prepare budgeted income statement and balance sheet.

(SO 4, 5)

GLENDO INDUSTRIES

Balance Sheet
December 31, 2010

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		<u>\$150,000</u>

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<u>Liabilities and Stockholders' Equity</u>		
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 2011 include the following.

	4th Qtr. of 2011	Year 2011 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, 2011, the production budget shows 9,000 required units of output. The total unit cost of production is expected to be \$20. Glendo 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 2011, 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, 2011, includes amounts due suppliers (see above) plus other accounts payable of \$5,700. In 2011, 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, 2011.

Instructions

Prepare a budgeted income statement for 2011 and a budgeted balance sheet at December 31, 2011. 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, 2011).

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

PROBLEMS: SET B

Prepare budgeted income statement and supporting budgets.

(SO 3, 4)



P23-1B 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 2010.

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 \$825,00 in quarter 2.

Instructions

Prepare the budgeted income statement for the first 6 months of 2010 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.

Net income \$689,500
Cost per bag \$44.00

P23-2B Durham Inc. is preparing its annual budgets for the year ending December 31, 2010. Accounting assistants furnish the following data.

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

	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%.

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.)

(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

P23-3B Speier Industries has sales in 2010 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 2011.

Plan A would increase the selling price per unit from \$7.00 to \$7.60. Sales volume would decrease by 10% from its 2010 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 2010, Speier has 70,000 units on hand. If Plan A is accepted, the 2011 ending inventory should be equal to 90,000 units. If Plan B is accepted, the ending inventory should be

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

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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 2011 should be \$925,000.

Instructions

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

- (a) Prepare a sales budget for 2011 under (1) Plan A and (2) Plan B.
(b) Prepare a production budget for 2011 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.)

Prepare cash budget for 2 months.

P23-4B Vidro Company prepares monthly cash budgets. Relevant data from operating budgets for 2011 are:

(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:

- Credit sales: November 2010, \$200,000; December 2010, \$280,000.
- Purchases of direct materials: December 2010, \$90,000.
- Other receipts: January—Collection of December 31, 2010, interest receivable \$3,000; February—Proceeds from sale of securities \$5,000.
- Other disbursements: February—payment of \$20,000 for land.

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 \$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.

P23-5B The budget committee of Guzman Company collects the following data for its Westwood Store in preparing budgeted income statements for July and August 2010.

(SO 6)



- Expected sales: July \$400,000, August \$450,000, September \$500,000.
- Cost of goods sold is expected to be 60% of sales.
- Company policy is to maintain ending merchandise inventory at 20% of the following month's cost of goods sold.
- 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

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

Instructions

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

- (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.



PROBLEMS: SET C

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

WATERWAYS CONTINUING PROBLEM

(This is a continuation of the Waterways Problem from Chapters 19 through 22.)

WCP23 Waterways Corporation is preparing its budget for the coming year, 2011. 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 2011.



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

BROADENING YOUR PERSPECTIVE

Decision Making Across the Organization



BYP23-1 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).

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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.

- Discuss how the budgeting process employed by Lanier Corporation contributes to the failure to achieve the president's sales and profit targets.
- Suggest how Lanier Corporation's budgeting process could be revised to correct the problems.
- Should the functional areas be expected to cut their costs when sales volume falls below budget? Explain your answer. (CMA adapted.)

Managerial Analysis

BYP23-2 Bedner & Flott Inc. manufactures ergonomic devices for computer users. Some of their more popular products include glare screens (for computer monitors), keyboard stands with wrist rests, and carousels that allow easy access to magnetic disks. Over the past 5 years, they 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 disk 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 in to 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	<u>\$700,000</u>

Instructions

Using the information above, answer the following questions.

- 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.
- 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

BYP23-3 **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.

Communication Activity

BYP23-4 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 below. All seminar customers pay for their products in full at the time of purchase. In addition, several large companies have ordered

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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 in cash 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, 2011

	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

BYP23-5 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

BYP23-6 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



p. 1020 Business Often Feel Too Busy to Plan for the Future

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.*

p. 1034 Without a Budget, Can the Games Begin?

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.*

Authors' Comments on All About You: Avoiding Personal Financial Disaster (p. 1038)



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 over-reliance 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 non-debt 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

