



### A Look Back

Chapter 6 compared reports prepared under variable costing with those under absorption costing, and it explained how variable costing can improve managerial decisions.



### A Look at This Chapter

This chapter explains the importance of budgeting and describes the master budget and its preparation. It also discusses the value of the master budget to the planning of future business activities.



### A Look Ahead

Chapter 8 focuses on flexible budgets, standard costs, and variance reporting. It explains the usefulness of these procedures and reports for business decisions.

# 7 Chapter

# Master Budgets and Performance Planning

## Learning Objectives

### CAP

#### Conceptual

- C1** Describe the importance and benefits of budgeting. (p. 238)
- C2** Explain the process of budget administration. (p. 240)
- C3** Describe a master budget and the process of preparing it. (p. 242)

#### Analytical

- A1** Analyze expense planning using activity-based budgeting. (p. 251)

#### Procedural

- P1** Prepare each component of a master budget and link each to the budgeting process. (p. 244)
- P2** Link both operating and capital expenditures budgets to budgeted financial statements. (p. 248)
- P3** Appendix 7A—Prepare production and manufacturing budgets. (p. 257)



LP7



## Decision Feature

# Lucky Charms



BOULDER, CO—Each pair of **Crocs (Crocs.com)** shoes includes ventilation holes for breathability and to filter water out. Sheri Schmelzer and her kids thought it more fun to use clay and rhinestones to decorate the holes with fun charms. Sheri's husband Rich, an entrepreneur, immediately saw the profit potential—within 48 hours the Schmelzer's had filed patents for the design of **Jibbitz (Jibbitz.com)**, which are small accessories made to fit in the holes of Crocs. Today, Jibbitz accessories come in various shapes and sizes, and include more than 1100 designs such as peace signs, flowers, musical notes, sports gear, and letters to spell out words.

Jibbitz started small, with an assembly line in the family's basement and a Website to process orders. Like many new businesses, Jibbitz began with few formal budgets or plans. "We didn't write a business plan" admits Sheri. Rich explains "We recalibrated our business every week depending on what we sold. We were very nimble." Soon, Jibbitz was processing hundreds of orders per day. "It turned from a very simple business to a very complex business," says Rich.

As business grew, master budgets and the budgeting process became more important. Budgets helped formalize business plans and

*"The Number One thing is you have got to take the chance"*—Rich Schmelzer

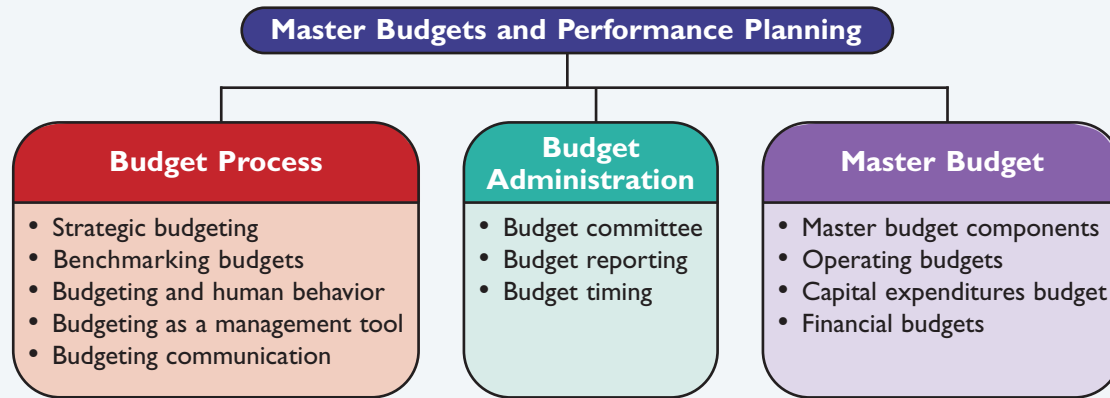
goals, and helped direct employees—a team of staff designers and warehouse personnel in Boulder, and a manufacturing group in Asia. Realizing that a too-rapid sales growth could strain its capacity to meet customer expectations, Jibbitz avoids advertising and has turned down some large retailers' bids to carry its products. An understanding of sales budgets and their link to expense budgets was vital in making these decisions. Likewise, production and manufacturing budgets helped plan for use of materials, labor, and overhead.

Eventually, Rich and Sheri teamed up with Crocs. Now operating as a division within Crocs, budgeting remains important. If Jibbitz meets certain sales and income targets, Rich and Sheri will receive an additional payment from Crocs. Linking their budgeted data to budgeted income statements, and using that information to control costs, is key to that future payment. Still, both Sheri and Rich stress the importance of having fun and a passion for what they do as keys to success. "I'm having a blast," explains Sheri. "I don't want it to stop."

[Sources: *Jibbitz Website*, January 2009; *Crocs Website*, January 2009; *Crocs 2007 10-K report*; *Rocky Mountain News*, September 2007; *Ladies Who Launch Magazine*, March 2008; *Business 2.0*, November 2006; *Boulder Daily Camera*, August 2006; *Denverpost.com*, October 2006]

Management seeks to turn its strategies into action plans. These action plans include financial details that are compiled in a master budget. The budgeting process serves several purposes, including motivating employees and communicating with them. The budget process also helps coordinate a company's activities toward common goals and is useful in evaluating results

and management performance. This chapter explains how to prepare a master budget and use it as a formal plan of a company's future activities. The ability to prepare this type of plan is of enormous help in starting and operating a company. Such planning gives managers a glimpse into the future, and it can help translate ideas into actions.



## Budget Process

**C1** Describe the importance and benefits of budgeting.

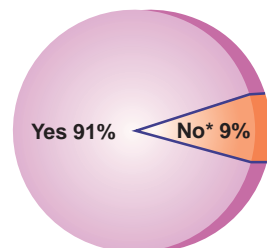
### Strategic Budgeting

Most companies prepare long-term strategic plans spanning 5 to 10 years. They then fine-tune them in preparing medium-term and short-term plans. Strategic plans usually set a company's long-term direction. They provide a road map for the future about potential opportunities such as new products, markets, and investments. The strategic plan can be inexact, given its long-term focus. Medium- and short-term plans are more operational and translate strategic plans into actions. These action plans are fairly concrete and consist of defined objectives and goals.

Short-term financial plans are called *budgets* and typically cover a one-year period. A **budget** is a formal statement of a company's future plans. It is usually expressed in monetary terms because the economic or financial aspects of the business are the primary factors driving management's decisions. All managers should be involved in **budgeting**, the process of planning future business actions and expressing them as formal plans. Managers who plan carefully and formalize plans in a budgeting process increase the likelihood of both personal and company success. (Although most firms prepare annual budgets, it is not unusual for organizations to prepare three-year and five-year budgets that are revised at least annually.)

The relevant focus of a budgetary analysis is the future. Management must focus on future transactions and events and the opportunities available. A focus on the future is important because the pressures of daily operating problems often divert management's attention and take precedence over planning. A good budgeting system counteracts this tendency by formalizing the planning process and demanding relevant input. Budgeting makes planning an explicit management responsibility.

### Companies Performing Annual Budgeting



\*Most of the 9% have eliminated annual budgeting in favor of rolling or continual budgeting.

### Benchmarking Budgets

The control function requires management to evaluate (benchmark) business operations against some norm. Evaluation involves comparing actual results against one of two usual alternatives: (1) past performance or (2) expected performance.

An evaluation assists management in identifying problems and taking corrective actions if necessary. Evaluation using expected, or budgeted, performance is potentially superior to using

past performance to decide whether actual results trigger a need for corrective actions. This is so because past performance fails to consider several changes that can affect current and future activities. Changes in economic conditions, shifts in competitive advantages within the industry, new product developments, increased or decreased advertising, and other factors reduce the usefulness of comparisons with past results. In hi-tech industries, for instance, increasing competition, technological advances, and other innovations often reduce the usefulness of performance comparisons across years.

Budgeted performance is computed after careful analysis and research that attempts to anticipate and adjust for changes in important company, industry, and economic factors. Therefore, budgets usually provide management an effective control and monitoring system.

## Budgeting and Human Behavior

Budgeting provides standards for evaluating performance and can affect the attitudes of employees evaluated by them. It can be used to create a positive effect on employees' attitudes, but it can also create negative effects if not properly applied. Budgeted levels of performance, for instance, must be realistic to avoid discouraging employees. Personnel who will be evaluated should be consulted and involved in preparing the budget to increase their commitment to meeting it. Performance evaluations must allow the affected employees to explain the reasons for apparent performance deficiencies.

The budgeting process has three important guidelines: (1) Employees affected by a budget should be consulted when it is prepared (*participatory budgeting*), (2) goals reflected in a budget should be attainable, and (3) evaluations should be made carefully with opportunities to explain any failures. Budgeting can be a positive motivating force when these guidelines are followed. Budgeted performance levels can provide goals for employees to attain or even exceed as they carry out their responsibilities. This is especially important in organizations that consider the annual budget a "sacred" document.

### Decision Insight

**Budgets Exposed** When companies go public and trade their securities on an organized exchange, management usually develops specific future plans and budgets. For this purpose, companies often develop detailed six- to twelve-month budgets and less-detailed budgets spanning 2 to 5 years.

## Budgeting as a Management Tool

An important management objective in large companies is to ensure that activities of all departments contribute to meeting the company's overall goals. This requires coordination. Budgeting provides a way to achieve this coordination.

We describe later in this chapter that a company's budget, or operating plan, is based on its objectives. This operating plan starts with the sales budget, which drives all other budgets including production, materials, labor, and overhead. The budgeting process coordinates the activities of these various departments to meet the company's overall goals.

## Budgeting Communication

Managers of small companies can adequately explain business plans directly to employees through conversations and other informal communications. However, conversations can create uncertainty and confusion if not supported by clear documentation of the plans. A written budget is preferred and can inform employees in all types of organizations about management's plans. The budget can also communicate management's specific action plans for the employees in the budget period.

### Decision Ethics

**Budget Staffer** Your company's earnings for the current period will be far below the budgeted amount reported in the press. One of your superiors, who is aware of the upcoming earnings shortfall, has accepted a management position with a competitor. This superior is selling her shares of the company. What are your ethical concerns, if any? [Answer—p. 259]



Video7.1

**Point:** Managers can evaluate performance by preparing reports that compare actual results to budgeted plans.

**Point:** The practice of involving employees in the budgeting process is known as *participatory budgeting*.



## Budget Administration

**C2** Explain the process of budget administration.

### Budget Committee

The task of preparing a budget should not be the sole responsibility of any one department. Similarly, the budget should not be simply handed down as top management's final word. Instead, budget figures and budget estimates developed through a *bottom-up* process usually are more useful. This includes, for instance, involving the sales department in preparing sales estimates. Likewise, the production department should have initial responsibility for preparing its own expense budget. Without active employee involvement in preparing budget figures, there is a risk these employees will feel that the numbers fail to reflect their special problems and needs.



Most budgets should be developed by a bottom-up process, but the budgeting system requires central guidance. This guidance is supplied by a budget committee of department heads and other executives responsible for seeing

that budgeted amounts are realistic and coordinated. If a department submits initial budget figures not reflecting efficient performance, the budget committee should return them with explanatory comments on how to improve them. Then the originating department must either adjust its proposals or explain why they are acceptable. Communication between the originating department and the budget committee should continue as needed to ensure that both parties accept the budget as reasonable, attainable, and desirable.

The concept of continuous improvement applies to budgeting as well as production. **BP**, one of the world's largest energy companies, streamlined its monthly budget report from a one-inch-thick stack of monthly control reports to a tidy, two-page flash report on monthly earnings and key production statistics. The key to this efficiency gain was the integration of new budgeting and cost allocation processes with its strategic planning process. BP's controller explained the new role of the finance department with respect to the budgetary control process as follows: "there's less of an attitude that finance's job is to control. People really have come to see that our job is to help attain business objectives."

### Budget Reporting

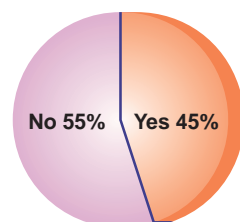
The budget period usually coincides with the accounting period. Most companies prepare at least an annual budget, which reflects the objectives for the next year. To provide specific guidance, the annual budget usually is separated into quarterly or monthly budgets. These short-term budgets allow management to periodically evaluate performance and take needed corrective action.

Managers can compare actual results to budgeted amounts in a report such as that shown in Exhibit 7.1. This report shows actual amounts, budgeted amounts, and their differences. A difference is called a *variance*. Management examines variances to identify areas for improvement and corrective action.

### Budget Timing

The time period required for the annual budgeting process can vary considerably. For example, budgeting for 2010 can begin as early as January 2009 or as late as December 2009. Large, complex organizations usually require a longer time to prepare their budgets than do smaller organizations. This is so because considerable effort is required to coordinate the different units (departments) within large organizations.

#### Companies Using Rolling Budgets



Many companies apply **continuous budgeting** by preparing **rolling budgets**. As each monthly or quarterly budget period goes by, these companies revise their entire set of budgets for the months or quarters remaining and add new monthly or quarterly budgets to replace the ones that have lapsed. At any point in time, monthly or quarterly budgets are available for the next

**Point:** In a large company, developing a budget through a bottom-up process can involve hundreds of employees and take several weeks to finalize.

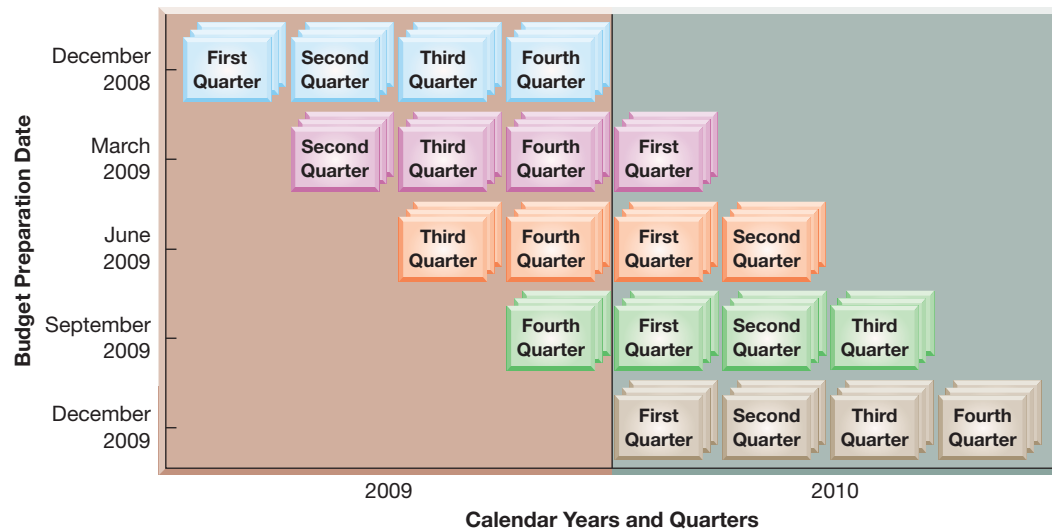
<b>ECCENTRIC MUSIC</b>			
<b>Income Statement with Variations from Budget</b>			
<b>For Month Ended April 30, 2009</b>			
	Actual	Budget	Variance
Net sales	\$60,500	\$57,150	<b>\$+3,350</b>
Cost of goods sold	41,350	39,100	<b>+2,250</b>
Gross profit	19,150	18,050	<b>+1,100</b>
Operating expenses			
Selling expenses			
Sales salaries	6,250	6,000	<b>+250</b>
Advertising	900	800	<b>+100</b>
Store supplies	550	500	<b>+50</b>
Depreciation—Store equipment	1,600	1,600	
Total selling expenses	9,300	8,900	<b>+400</b>
General and administrative expenses			
Office salaries	2,000	2,000	
Office supplies used	165	150	<b>+15</b>
Rent	1,100	1,100	
Insurance	200	200	
Depreciation—Office equipment	100	100	
Total general and administrative expenses	3,565	3,550	<b>+15</b>
Total operating expenses	12,865	12,450	<b>+415</b>
Net income	<b>\$ 6,285</b>	<b>\$ 5,600</b>	<b>\$ +685</b>

**EXHIBIT 7.1**

Comparing Actual Performance with Budgeted Performance

**Example:** Assume that you must explain variances to top management. Which variances in Exhibit 7.1 would you research and why? Answer: Sales and cost of goods sold—due to their large variances.

12 months or four quarters. Exhibit 7.2 shows rolling budgets prepared at the end of five consecutive periods. The first set (at top) is prepared in December 2008 and covers the four calendar quarters of 2009. In March 2009, the company prepares another rolling budget for the next four quarters through March 2010. This same process is repeated every three months. As a result, management is continuously planning ahead.



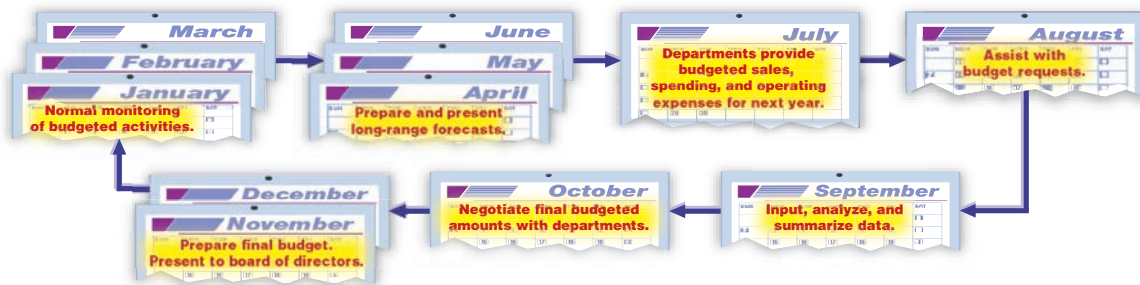
**EXHIBIT 7.2**

Rolling Budgets

Exhibit 7.2 reflects an annual budget composed of four quarters prepared four times per year using the most recent information available. For example, the budget for the fourth quarter of 2009 is prepared in December 2008 and revised in March, June, and September of 2009. When continuous budgeting is not used, the fourth-quarter budget is nine months old and perhaps out of date when applied.

### Decision Insight

**Budget Calendar** Many companies use long-range operating budgets. For large companies, three groups usually determine or influence the budgets: creditors, directors, and management. All three are interested in the companies' future cash flows and earnings. The annual budget process often begins six months or more before the budget is due to the board of directors. A typical budget calendar, shown here, provides insight into the budget process during a typical calendar year.



### Quick Check

Answers—p. 259

1. What are the major benefits of budgeting?
2. What is the main responsibility of the budget committee?
3. What is the usual time period covered by a budget?
4. What are rolling budgets?

## Master Budget

**C3** Describe a master budget and the process of preparing it.

A **master budget** is a formal, comprehensive plan for a company's future. It contains several individual budgets that are linked with each other to form a coordinated plan.

### Master Budget Components

The master budget typically includes individual budgets for sales, purchases, production, various expenses, capital expenditures, and cash. Managers often express the expected financial results of these planned activities with both a budgeted income statement for the budget period and a budgeted balance sheet for the end of the budget period. The usual number and types of budgets included in a master budget depend on the company's size and complexity. A master budget should include, at a minimum, the budgets listed in Exhibit 7.3. In addition to these individual budgets, managers often include supporting calculations and additional tables with the master budget.

Some budgets require the input of other budgets. For example, the merchandise purchases budget cannot be prepared until the sales budget has been prepared because the number of units to be purchased depends on how many units are expected to be sold. As a result, we often must sequentially prepare budgets within the master budget.

#### EXHIBIT 7.3

Basic Components of a Master Budget

<p><b>Operating budgets</b></p> <ul style="list-style-type: none"> <li>■ Sales budget</li> <li>■ For merchandisers add: <i>Merchandise purchases budget</i> (units to be purchased)</li> <li>■ For manufacturers add: <i>Production budget</i> (units to be produced) <i>Manufacturing budget</i> (manufacturing costs)</li> <li>■ Selling expense budget</li> <li>■ General and administrative expense budget</li> </ul> <p><b>Capital expenditures budget</b> (expenditures for plant assets)</p> <p><b>Financial budgets</b></p> <ul style="list-style-type: none"> <li>■ Cash budget (cash receipts and disbursements)</li> <li>■ Budgeted income statement</li> <li>■ Budgeted balance sheet</li> </ul>
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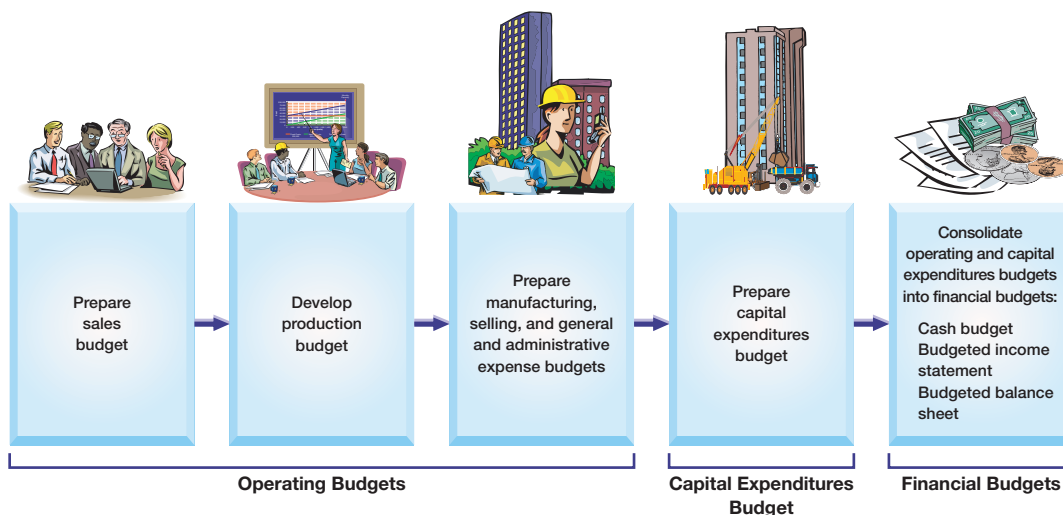
### Decision Insight

**Budgeting Targets** Budgeting is a crucial part of any acquisition. Analysis begins by projecting annual sales volume and prices. It then estimates cost of sales, expenses, and income for the next several years. Using the present value of this projected income stream, buyers determine an offer price.



Video7.1

A typical sequence for a quarterly budget consists of the five steps in Exhibit 7.4. Any stage in this budgeting process might reveal undesirable outcomes, so changes often must be made to prior budgets by repeating the previous steps. For instance, an early version of the cash budget could show an insufficient amount of cash unless cash outlays are reduced. This could yield a reduction in planned equipment purchases. A preliminary budgeted balance sheet could also reveal too much debt from an ambitious capital expenditures budget. Findings such as these often result in revised plans and budgets.



### EXHIBIT 7.4

Master Budget Sequence

The remainder of this section explains how Hockey Den (HD), a retailer of youth hockey sticks, prepares its master budget. Its master budget includes operating, capital expenditures, and cash budgets for each month in each quarter. It also includes a budgeted income statement for each quarter and a budgeted balance sheet as of the last day of each quarter. We show how HD prepares budgets for October, November, and December 2009. Exhibit 7.5 presents HD's balance sheet at the start of this budgeting period, which we often refer to as we prepare the component budgets.

<b>HOCKEY DEN</b>		
<b>Balance Sheet</b>		
<b>September 30, 2009</b>		
<b>Assets</b>		
Cash .....		\$ 20,000
Accounts receivable .....		42,000
Inventory (900 units @ \$60) .....		54,000
Equipment* .....	\$200,000	
Less accumulated depreciation .....	36,000	164,000
<b>Total assets .....</b>		<b><u>\$280,000</u></b>
<b>Liabilities and Equity</b>		
<b>Liabilities</b>		
Accounts payable .....	\$ 58,200	
Income taxes payable (due 10/31/2009) .....	20,000	
Note payable to bank .....	10,000	\$ 88,200
<b>Stockholders' equity</b>		
Common stock .....	150,000	
Retained earnings .....	41,800	191,800
<b>Total liabilities and equity .....</b>		<b><u>\$280,000</u></b>

### EXHIBIT 7.5

Balance Sheet Prior to the Budgeting Periods

\* Equipment is depreciated on a straight-line basis over 10 years (salvage value is \$20,000).



## Operating Budgets

**P1** Prepare each component of a master budget and link each to the budgeting process.

This section explains HD's preparation of operating budgets. Its operating budgets consist of the sales budget, merchandise purchases budget, selling expense budget, and general and administrative expense budget. HD does not prepare production and manufacturing budgets because it is a merchandiser. (The preparation of production budgets and manufacturing budgets is described in Appendix 7A.)

**Sales Budget** The first step in preparing the master budget is planning the **sales budget**, which shows the planned sales units and the expected dollars from these sales. The sales budget is the starting point in the budgeting process because plans for most departments are linked to sales.

The sales budget should emerge from a careful analysis of forecasted economic and market conditions, business capacity, proposed selling expenses (such as advertising), and predictions of unit sales. A company's sales personnel are usually asked to develop predictions of sales for each territory and department because people normally feel a greater commitment to goals they help set. Another advantage to this participatory budgeting approach is that it draws on knowledge and experience of people involved in the activity.

### Decision Insight

**No Biz Like Snow Biz** Ski resorts' costs of making snow are in the millions of dollars for equipment alone. Snowmaking involves spraying droplets of water into the air, causing them to freeze and come down as snow. Making snow can cost more than \$2,000 an hour. Snowmaking accounts for 40 to 50 percent of the operating budgets for many ski resorts.



**Example:** Assume a company's sales force receives a bonus when sales exceed the budgeted amount. How would this arrangement affect the bottom-up process of sales forecasts? *Answer:* Sales reps may understate their budgeted sales.

To illustrate, in September 2009, HD sold 700 hockey sticks at \$100 per unit. After considering sales predictions and market conditions, HD prepares its sales budget for the next quarter (three months) plus one extra month (see Exhibit 7.6). The sales budget includes January 2010 because the purchasing department relies on estimated January sales to decide on December 2009 inventory purchases. The sales budget in Exhibit 7.6 includes forecasts of both unit sales and unit prices. Some sales budgets are expressed only in total sales dollars, but most are more detailed. Management finds it useful to know budgeted units and unit prices for many different products, regions, departments, and sales representatives.

### EXHIBIT 7.6

Sales Budget for Planned Unit and Dollar Sales

HOCKEY DEN Monthly Sales Budget October 2009–January 2010			
	Budgeted Unit Sales	Budgeted Unit Price	Budgeted Total Sales
September 2009 (actual) . . . . .	700	\$100	\$ 70,000
October 2009 . . . . .	1,000	\$100	\$100,000
November 2009 . . . . .	800	100	80,000
December 2009 . . . . .	<u>1,400</u>	100	<u>140,000</u>
Totals for the quarter . . . . .	<u>3,200</u>	100	<u>\$320,000</u>
January 2010 . . . . .	900	100	\$ 90,000



### Decision Maker

**Entrepreneur** You run a start-up that manufactures designer clothes. Business is seasonal, and fashions and designs quickly change. How do you prepare reliable annual sales budgets? [Answer—p. 259]

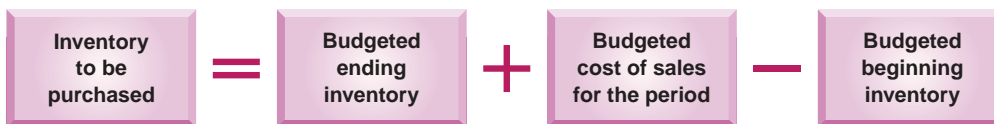
**Merchandise Purchases Budget** Companies use various methods to help managers make inventory purchasing decisions. These methods recognize that the number of units added to inventory depends on budgeted sales volume. Whether a company manufactures or purchases the product it sells, budgeted future sales volume is the primary factor in most inventory management decisions. A company must also consider its inventory system and other factors that we discuss next.

**Just-in-time inventory systems.** Managers of *just-in-time* (JIT) inventory systems use sales budgets for short periods (often as few as one or two days) to order just enough merchandise or materials to satisfy the immediate sales demand. This keeps the amount of inventory to a minimum (or zero in an ideal situation). A JIT system minimizes the costs of maintaining inventory, but it is practical only if customers are content to order in advance or if managers can accurately determine short-term sales demand. Suppliers also must be able and willing to ship small quantities regularly and promptly.

**Point:** Accurate estimates of future sales are crucial in a JIT system.

**Safety stock inventory systems.** Market conditions and manufacturing processes for some products do not allow use of a just-in-time system. Companies in these cases maintain sufficient inventory to reduce the risk and cost of running short. This practice requires enough purchases to satisfy the budgeted sales amounts and to maintain a **safety stock**, a quantity of inventory that provides protection against lost sales caused by unfulfilled demands from customers or delays in shipments from suppliers.

**Merchandise purchases budget preparation.** A merchandiser usually expresses a **merchandise purchases budget** in both units and dollars. Exhibit 7.7 shows the general layout for this budget in equation form. If this formula is expressed in units and only one product is involved, we can compute the number of dollars of inventory to be purchased for the budget by multiplying the units to be purchased by the cost per unit.



**EXHIBIT 7.7**

General Formula for a Merchandise Purchases Budget

To illustrate, after assessing the cost of keeping inventory along with the risk and cost of inventory shortages, HD decided that the number of units in its inventory at each month-end should equal 90% of next month's predicted sales. For example, inventory at the end of October should equal 90% of budgeted November sales, and the November ending inventory should equal 90% of budgeted December sales, and so on. Also, HD's suppliers expect the September 2009 per unit cost of \$60 to remain unchanged through January 2010. This information along with knowledge of 900 units in inventory at September 30 (see Exhibit 7.5) allows the company to prepare the merchandise purchases budget shown in Exhibit 7.8.

**Example:** Assume Hockey Den adopts a JIT system in purchasing merchandise. How will its sales budget differ from its merchandise purchases budget? *Answer:* The two budgets will be similar because future inventory should be near zero.

<b>HOCKEY DEN</b>			
<b>Merchandise Purchases Budget</b>			
<b>October 2009–December 2009</b>			
	October	November	December
Next month's budgeted sales (units) . . . . .	800	1,400	900
Ratio of inventory to future sales . . . . .	× 90%	× 90%	× 90%
Budgeted ending inventory (units) . . . . .	720	1,260	810
Add budgeted sales (units) . . . . .	1,000	800	1,400
Required units of available merchandise . . . . .	1,720	2,060	2,210
Deduct beginning inventory (units) . . . . .	900	720	1,260
Units to be purchased . . . . .	<u>820</u>	<u>1,340</u>	<u>950</u>
Budgeted cost per unit . . . . .	\$ 60	\$ 60	\$ 60
Budgeted cost of merchandise purchases . . . . .	<u>\$49,200</u>	<u>\$80,400</u>	<u>\$57,000</u>

**EXHIBIT 7.8**

Merchandise Purchases Budget

**Example:** If ending inventory in Exhibit 7.8 is required to equal 80% of next month's predicted sales, how many units must be purchased each month? *Answer:* Budgeted ending inventory: Oct. = 640 units; Nov. = 1,120 units; Dec. = 720 units. Required purchases: Oct. = 740 units; Nov. = 1,280 units; Dec. = 1,000 units.

The first three lines of HD’s merchandise purchases budget determine the required ending inventories (in units). Budgeted unit sales are then added to the desired ending inventory to give the required units of available merchandise. We then subtract beginning inventory to determine the budgeted number of units to be purchased. The last line is the budgeted cost of the purchases, computed by multiplying the number of units to be purchased by the predicted cost per unit.

We already indicated that some budgeting systems describe only the total dollars of budgeted sales. Likewise, a system can express a merchandise purchases budget only in terms of the total cost of merchandise to be purchased, omitting the number of units to be purchased. This method assumes a constant relation between sales and cost of goods sold. HD, for instance, might assume the expected cost of goods sold to be 60% of sales, computed from the budgeted unit cost of \$60 and the budgeted sales price of \$100. However, it still must consider the effects of changes in beginning and ending inventories in determining the amounts to be purchased.

**Selling Expense Budget** The **selling expense budget** is a plan listing the types and amounts of selling expenses expected during the budget period. Its initial responsibility usually rests with the vice president of marketing or an equivalent sales manager. The selling expense budget is normally created to provide sufficient selling expenses to meet sales goals reflected in the sales budget. Predicted selling expenses are based on both the sales budget and the experience of previous periods. After some or all of the master budget is prepared, management might decide that projected sales volume is inadequate. If so, subsequent adjustments in the sales budget can require corresponding adjustments in the selling expense budget.

To illustrate, HD’s selling expense budget is in Exhibit 7.9. The firm’s selling expenses consist of commissions paid to sales personnel and a \$2,000 monthly salary paid to the sales manager. Sales commissions equal 10% of total sales and are paid in the month sales occur. Sales commissions are variable with respect to sales volume, but the sales manager’s salary is fixed. No advertising expenses are budgeted for this particular quarter.

**Example:** If sales commissions in Exhibit 7.9 are increased, which budgets are affected? Answer: Selling expenses budget, cash budget, and budgeted income statement.

**EXHIBIT 7.9**

Selling Expense Budget

<b>HOCKEY DEN</b>				
<b>Selling Expense Budget</b>				
<b>October 2009–December 2009</b>				
	<b>October</b>	<b>November</b>	<b>December</b>	<b>Totals</b>
Budgeted sales . . . . .	\$100,000	\$80,000	\$140,000	\$320,000
Sales commission percent . . . . .	× 10%	× 10%	× 10%	× 10%
Sales commissions . . . . .	10,000	8,000	14,000	32,000
Salary for sales manager . . . . .	2,000	2,000	2,000	6,000
Total selling expenses . . . . .	<u>\$ 12,000</u>	<u>\$10,000</u>	<u>\$ 16,000</u>	<u>\$ 38,000</u>

**General and Administrative Expense Budget** The **general and administrative expense budget** plans the predicted operating expenses not included in the selling expenses budget. General and administrative expenses can be either variable or fixed with respect to sales volume. The office manager responsible for general administration often is responsible for preparing the initial general and administrative expense budget.

Interest expense and income tax expense are often classified as general and administrative expenses in published income statements, but normally cannot be planned at this stage of the budgeting process. The prediction of interest expense follows the preparation of the cash budget and the decisions regarding debt. The predicted income tax expense depends on the budgeted amount of pretax income. Both interest and income taxes are usually beyond the control of the office manager. As a result, they are not used in comparison to the budget to evaluate that person’s performance.

Exhibit 7.10 shows HD’s general and administrative expense budget. It includes salaries of \$54,000 per year, or \$4,500 per month (paid each month when they are earned). Using

information in Exhibit 7.5, the depreciation on equipment is computed as \$18,000 per year  $[(\$200,000 - \$20,000)/10 \text{ years}]$ , or \$1,500 per month  $(\$18,000/12 \text{ months})$ .

<b>HOCKEY DEN</b>				
<b>General and Administrative Expense Budget</b>				
<b>October 2009–December 2009</b>				
	October	November	December	Totals
Administrative salaries . . . . .	\$4,500	\$4,500	\$4,500	\$13,500
Depreciation of equipment . . . . .	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>	<u>4,500</u>
Total general and administrative expenses . . . . .	<u>\$6,000</u>	<u>\$6,000</u>	<u>\$6,000</u>	<u>\$18,000</u>

**EXHIBIT 7.10**

General and Administrative Expense Budget

**Example:** In Exhibit 7.10, how would a rental agreement of \$5,000 per month plus 1% of sales affect the general and administrative expense budget? (Budgeted sales are in Exhibit 7.6.)  
*Answer: Rent expense: Oct. = \$6,000; Nov. = \$5,800; Dec. = \$6,400; Total = \$18,200; Revised total general and administrative expenses: Oct. = \$12,000; Nov. = \$11,800; Dec. = \$12,400; Total = \$36,200.*

**Quick Check**

Answers—p. 259

5. What is a master budget?
6. A master budget (a) always includes a manufacturing budget specifying the units to be produced; (b) is prepared with a process starting with the operating budgets and continues with the capital expenditures budget and then financial budgets; or (c) is prepared with a process ending with the sales budget.
7. What are the three primary categories of budgets in the master budget?
8. In preparing monthly budgets for the third quarter, a company budgeted sales of 120 units for July and 140 units for August. Management wants each month's ending inventory to be 60% of next month's sales. The June 30 inventory consists of 50 units. How many units of product for July acquisition should the merchandise purchases budget specify for the third quarter? (a) 84, (b) 120, (c) 154, or (d) 204.
9. How do the operating budgets for merchandisers and manufacturers differ?
10. How does a just-in-time inventory system differ from a safety stock system?

## Capital Expenditures Budget

The **capital expenditures budget** lists dollar amounts to be both received from plant asset disposals and spent to purchase additional plant assets to carry out the budgeted business activities. It is usually prepared after the operating budgets. Since a company's plant assets determine its productive capacity, this budget is usually affected by long-range plans for the business. Yet the process of preparing a sales or purchases budget can reveal that the company requires more (or less) capacity, which implies more (or less) plant assets.

*Capital budgeting* is the process of evaluating and planning for capital (plant asset) expenditures. This is an important management task because these expenditures often involve long-run commitments of large amounts, affect predicted cash flows, and impact future debt and equity financing. This means that the capital expenditures budget is often linked with management's evaluation of the company's ability to take on more debt. We describe capital budgeting in Chapter 11.

Hockey Den does not anticipate disposal of any plant assets through December 2009, but it does plan to acquire additional equipment for \$25,000 cash near the end of December 2009. This is the only budgeted capital expenditure from October 2009 through January 2010. Thus, no separate budget is shown. The cash budget in Exhibit 7.11 reflects this \$25,000 planned expenditure.

## Financial Budgets

After preparing its operating and capital expenditures budgets, a company uses information from these budgets to prepare at least three financial budgets: the cash budget, budgeted income statement, and budgeted balance sheet.



**EXHIBIT 7.11**

Cash Budget

<b>HOCKEY DEN</b>			
<b>Cash Budget</b>			
<b>October 2009–December 2009</b>			
	<b>October</b>	<b>November</b>	<b>December</b>
Beginning cash balance	\$ 20,000	\$ 20,000	\$ 22,272
Cash receipts from customers (Exhibit 7.12)	<u>82,000</u>	<u>92,000</u>	<u>104,000</u>
Total cash available	102,000	112,000	126,272
Cash disbursements			
Payments for merchandise (Exhibit 7.13)	58,200	49,200	80,400
Sales commissions (Exhibit 7.9)	10,000	8,000	14,000
Salaries			
Sales (Exhibit 7.9)	2,000	2,000	2,000
Administrative (Exhibit 7.10)	4,500	4,500	4,500
Income taxes payable (Exhibit 7.5)	20,000		
Dividends (\$150,000 × 2%)		3,000	
Interest on bank loan			
October (\$10,000 × 1%)	100		
November (\$22,800 × 1%)		228	
Purchase of equipment			<u>25,000</u>
Total cash disbursements	<u>94,800</u>	<u>66,928</u>	<u>125,900</u>
Preliminary cash balance	\$ 7,200	\$ 45,072	\$ 372
Additional loan from bank			
	12,800		19,628
Repayment of loan to bank			
		22,800	
Ending cash balance	<u>\$ 20,000</u>	<u>\$ 22,272</u>	<u>\$ 20,000</u>
Loan balance, end of month	<u>\$ 22,800</u>	<u>\$ 0</u>	<u>\$ 19,628</u>

**Example:** If the minimum ending cash balance in Exhibit 7.11 is changed to \$25,000 for each month, what is the projected loan balance at Dec. 31, 2009?

Answer:

Loan balance, Oct. 31	\$27,800
November interest	278
November payment	<u>25,022</u>
Loan balance, Nov. 30	2,778
December interest	28
Additional loan in Dec.	<u>21,928</u>
Loan balance, Dec. 31	<u>\$24,706</u>

**P2** Link both operating and capital expenditures budgets to budgeted financial statements.

**Cash Budget** After developing budgets for sales, merchandise purchases, expenses, and capital expenditures, the next step is to prepare the **cash budget**, which shows expected cash inflows and outflows during the budget period. It is especially important to maintain a cash balance necessary to meet ongoing obligations. By preparing a cash budget, management can prearrange loans to cover anticipated cash shortages before they are needed. A cash budget also helps management avoid a cash balance that is too large. Too much cash is undesirable because it earns a relatively low (if any) return.

When preparing a cash budget, we add expected cash receipts to the beginning cash balance and deduct expected cash disbursements. If the expected ending cash balance is inadequate, additional cash requirements appear in the budget as planned increases from short-term loans. If the expected ending cash balance exceeds the desired balance, the excess is used to repay loans or to acquire short-term investments. Information for preparing the cash budget is mainly taken from the operating and capital expenditures budgets.

To illustrate, Exhibit 7.11 presents HD’s cash budget. The beginning cash balance for October is taken from the September 30, 2009, balance sheet in Exhibit 7.5. The remainder of this section describes the computations in the cash budget.

We begin with reference to HD’s budgeted sales (Exhibit 7.6). Analysis of past sales indicates that 40% of the firm’s sales are for cash. The remaining 60% are credit sales; these customers are expected to pay in full in the month following the sales. We now can compute the budgeted cash receipts from customers as shown in Exhibit 7.12. October’s budgeted cash receipts consist of \$40,000 from expected cash sales (\$100,000 × 40%) plus the anticipated collection of \$42,000 of accounts receivable from the end of September. Each month’s cash receipts from customers are transferred to the second line of Exhibit 7.11.

Next, we see that HD’s merchandise purchases are entirely on account. It makes full payment during the month following its purchases. Therefore, cash disbursements for



	September	October	November	December
Sales .....	\$70,000	\$100,000	\$80,000	\$140,000
Less ending accounts receivable (60%) .....	<u>42,000</u>	<u>60,000</u>	<u>48,000</u>	<u>84,000</u>
Cash receipts from				
Cash sales (40% of sales) .....		40,000	32,000	56,000
Collections of prior month's receivables .....		42,000	60,000	48,000
Total cash receipts .....		<u>\$ 82,000</u>	<u>\$92,000</u>	<u>\$104,000</u>

**EXHIBIT 7.12**

Computing Budgeted Cash Receipts

purchases can be computed from the September 30, 2009, balance sheet (Exhibit 7.5) and the merchandise purchases budget (Exhibit 7.8). This computation is shown in Exhibit 7.13.

October payments (September 30 balance) .....	\$58,200
November payments (October purchases) .....	49,200
December payments (November purchases) .....	80,400

**EXHIBIT 7.13**

Computing Cash Disbursements for Purchases

The monthly budgeted cash disbursements for sales commissions and salaries are taken from the selling expense budget (Exhibit 7.9) and the general and administrative expense budget (Exhibit 7.10). The cash budget is unaffected by depreciation as reported in the general and administrative expenses budget.

Income taxes are due and payable in October as shown in the September 30, 2009, balance sheet (Exhibit 7.5). The cash budget in Exhibit 7.11 shows this \$20,000 expected payment in October. Predicted income tax expense for the quarter ending December 31 is 40% of net income and is due in January 2010. It is therefore not reported in the October–December 2009 cash budget but in the budgeted income statement as income tax expense and on the budgeted balance sheet as income tax liability.

Hockey Den also pays a cash dividend equal to 2% of the par value of common stock in the second month of each quarter. The cash budget in Exhibit 7.11 shows a November payment of \$3,000 for this purpose (2% of \$150,000; see Exhibit 7.5).

Hockey Den has an agreement with its bank that promises additional loans at each month-end, if necessary, to keep a minimum cash balance of \$20,000. If the cash balance exceeds \$20,000 at a month-end, HD uses the excess to repay loans. Interest is paid at each month-end at the rate of 1% of the beginning balance of these loans. For October, this payment is 1% of the \$10,000 amount reported in the balance sheet of Exhibit 7.5. For November, HD expects to pay interest of \$228, computed as 1% of the \$22,800 expected loan balance at October 31. No interest is budgeted for December because the company expects to repay the loans in full at the end of November. Exhibit 7.11 shows that the October 31 cash balance declines to \$7,200 (before any loan-related activity). This amount is less than the \$20,000 minimum. Hockey Den will bring this balance up to the minimum by borrowing \$12,800 with a short-term note. At the end of November, the budget shows an expected cash balance of \$45,072 before any loan activity. This means that HD expects to repay \$22,800 of debt. The equipment purchase budgeted for December reduces the expected cash balance to \$372, far below the \$20,000 minimum. The company expects to borrow \$19,628 in that month to reach the minimum desired ending balance.

**Example:** Give one reason for maintaining a minimum cash balance when the budget shows extra cash is not needed. Answer: For unexpected events.

**Decision Insight**

**Netting Cash** The **Hockey Company**—whose brands include CCM, JOFA, and KOHO—reported net cash outflows for investing activities of \$32 million. Much of this amount was a prepayment to the **NHL** for a 10-year license agreement.



**Budgeted Income Statement** One of the final steps in preparing the master budget is to summarize the income effects. The **budgeted income statement** is a managerial accounting report showing predicted amounts of sales and expenses for the budget period. Information needed for preparing a budgeted income statement is primarily taken from already prepared budgets. The volume of information summarized in the budgeted income statement is so large for some companies that they often use spreadsheets to accumulate the budgeted transactions and classify them by their effects on income. We condense HD's budgeted income statement and show it in Exhibit 7.14. All information in this exhibit is taken from earlier budgets. Also, we now can predict the amount of income tax expense for the quarter, computed as 40% of the budgeted pretax income. This amount is included in the cash budget and/or the budgeted balance sheet as necessary.

**EXHIBIT 7.14**

Budgeted Income Statement

HOCKEY DEN Budgeted Income Statement For Three Months Ended December 31, 2009	
Sales (Exhibit 7.6, 3,200 units @ \$100) . . . . .	\$320,000
Cost of goods sold (3,200 units @ \$60) . . . . .	<u>192,000</u>
Gross profit . . . . .	128,000
Operating expenses	
Sales commissions (Exhibit 7.9) . . . . .	\$32,000
Sales salaries (Exhibit 7.9) . . . . .	6,000
Administrative salaries (Exhibit 7.10) . . . . .	13,500
Depreciation on equipment (Exhibit 7.10) . . . . .	4,500
Interest expense (Exhibit 7.11) . . . . .	<u>328</u>
	<u>56,328</u>
Income before income taxes . . . . .	71,672
Income tax expense (\$71,672 × 40%) . . . . .	<u>28,669</u>
Net income . . . . .	<u>\$ 43,003</u>

**Point:** Lending institutions often require potential borrowers to provide cash budgets, budgeted income statements, and budgeted balance sheets, as well as data on past performance.

**Budgeted Balance Sheet** The final step in preparing the master budget is summarizing the company's financial position. The **budgeted balance sheet** shows predicted amounts for the company's assets, liabilities, and equity as of the end of the budget period. HD's budgeted balance sheet in Exhibit 7.15 is prepared using information from the other budgets. The sources of amounts are reported in the notes to the budgeted balance sheet.<sup>1</sup>

**Decision Insight**

**Plan Ahead** Most companies allocate dollars based on budgets submitted by department managers. These managers verify the numbers and monitor the budget. Managers must remember, however, that a budget is judged by its success in helping achieve the company's mission. One analogy is that a hiker must know the route to properly plan a hike and monitor hiking progress.



<sup>1</sup> An eight-column spreadsheet, or work sheet, can be used to prepare a budgeted balance sheet (and income statement). The first two columns show the ending balance sheet amounts from the period prior to the budget period. The budgeted transactions and adjustments are entered in the third and fourth columns in the same manner as adjustments are entered on an ordinary work sheet. After all budgeted transactions and adjustments have been entered, the amounts in the first two columns are combined with the budget amounts in the third and fourth columns and sorted to the proper Income Statement (fifth and sixth columns) and Balance Sheet columns (seventh and eighth columns). Amounts in these columns are used to prepare the budgeted income statement and balance sheet.

**EXHIBIT 7.15**

## Budgeted Balance Sheet

<b>HOCKEY DEN</b>		
<b>Budgeted Balance Sheet</b>		
<b>December 31, 2009</b>		
<b>Assets</b>		
Cash <sup>a</sup> .....		\$ 20,000
Accounts receivable <sup>b</sup> .....		84,000
Inventory <sup>c</sup> .....		48,600
Equipment <sup>d</sup> .....	\$225,000	
Less accumulated depreciation <sup>e</sup> .....	<u>40,500</u>	<u>184,500</u>
Total assets .....		<u><u>\$337,100</u></u>
<b>Liabilities and Equity</b>		
<b>Liabilities</b>		
Accounts payable <sup>f</sup> .....	\$ 57,000	
Income taxes payable <sup>g</sup> .....	28,669	
Bank loan payable <sup>h</sup> .....	<u>19,628</u>	<u>\$105,297</u>
<b>Stockholders' equity</b>		
Common stock <sup>i</sup> .....	150,000	
Retained earnings <sup>j</sup> .....	<u>81,803</u>	<u>231,803</u>
Total liabilities and equity .....		<u><u>\$337,100</u></u>

<sup>a</sup> Ending balance for December from the cash budget in Exhibit 7.11.

<sup>b</sup> 60% of \$140,000 sales budgeted for December from the sales budget in Exhibit 7.6.

<sup>c</sup> 810 units in budgeted December ending inventory at the budgeted cost of \$60 per unit (from the purchases budget in Exhibit 7.8).

<sup>d</sup> September 30 balance of \$200,000 from the beginning balance sheet in Exhibit 7.5 plus \$25,000 cost of new equipment from the cash budget in Exhibit 7.11.

<sup>e</sup> September 30 balance of \$36,000 from the beginning balance sheet in Exhibit 7.5 plus \$4,500 expense from the general and administrative expense budget in Exhibit 7.10.

<sup>f</sup> Budgeted cost of purchases for December from the purchases budget in Exhibit 7.8.

<sup>g</sup> Income tax expense from the budgeted income statement for the fourth quarter in Exhibit 7.14.

<sup>h</sup> Budgeted December 31 balance from the cash budget in Exhibit 7.11.

<sup>i</sup> Unchanged from the beginning balance sheet in Exhibit 7.5.

<sup>j</sup> September 30 balance of \$41,800 from the beginning balance sheet in Exhibit 7.5 plus budgeted net income of \$43,003 from the budgeted income statement in Exhibit 7.14 minus budgeted cash dividends of \$3,000 from the cash budget in Exhibit 7.11.

**Quick Check**

Answers—p. 259

11. In preparing a budgeted balance sheet, (a) plant assets are determined by analyzing the capital expenditures budget and the balance sheet from the beginning of the budget period, (b) liabilities are determined by analyzing the general and administrative expense budget, or (c) retained earnings are determined from information contained in the cash budget and the balance sheet from the beginning of the budget period.

12. What sequence is followed in preparing the budgets that constitute the master budget?

**Activity-Based Budgeting****Decision Analysis**

**Activity-based budgeting (ABB)** is a budget system based on expected activities. Knowledge of expected activities and their levels for the budget period enables management to plan for resources required to perform the activities. To illustrate, we consider the budget of a company's accounting department. Traditional budgeting systems list items such as salaries, supplies, equipment, and utilities. Such an itemized budget informs management of the use of the funds budgeted (for example, salaries), but management cannot assess the basis for increases or decreases in budgeted amounts as compared to prior periods. Accordingly, management often makes across-the-board cuts or increases. In contrast, ABB requires management to list activities performed by, say, the accounting department such as auditing, tax reporting, financial reporting, and cost accounting. Exhibit 7.16 contrasts a traditional budget with an activity-based budget for a company's accounting department. An understanding of the resources required to perform the activities, the costs associated with these resources,

**A1** Analyze expense planning using activity-based budgeting.



**EXHIBIT 7.16**

Activity-Based Budgeting versus Traditional Budgeting (for an accounting department)

Activity-Based Budget		Traditional Budget	
Auditing . . . . .	\$ 58,000	Salaries . . . . .	\$152,000
Tax reporting . . . . .	71,000	Supplies . . . . .	22,000
Financial reporting . . . . .	63,000	Depreciation . . . . .	36,000
Cost accounting . . . . .	32,000	Utilities . . . . .	14,000
Total . . . . .	<u>\$224,000</u>	Total . . . . .	<u>\$224,000</u>

and the way resource use changes with changes in activity levels allows management to better assess how expenses will change to accommodate changes in activity levels. Moreover, by knowing the relation between activities and costs, management can attempt to reduce costs by eliminating nonvalue-added activities.



**Decision Maker**

**Environmental Manager** You hold the new position of environmental control manager for a chemical company. You are asked to develop a budget for your job and identify job responsibilities. How do you proceed? [Answer—p. 259]

**Demonstration Problem**

Wild Wood Company’s management asks you to prepare its master budget using the following information. The budget is to cover the months of April, May, and June of 2009.

WILD WOOD COMPANY			
Balance Sheet			
March 31, 2009			
<b>Assets</b>		<b>Liabilities and Equity</b>	
Cash . . . . .	\$ 50,000	Accounts payable . . . . .	\$156,000
Accounts receivable . . . . .	175,000	Short-term notes payable . . . . .	12,000
Inventory . . . . .	126,000	Total current liabilities . . . . .	168,000
Total current assets . . . . .	351,000	Long-term note payable . . . . .	200,000
Equipment, gross . . . . .	480,000	Total liabilities . . . . .	368,000
Accumulated depreciation . . . . .	(90,000)	Common stock . . . . .	235,000
Equipment, net . . . . .	390,000	Retained earnings . . . . .	138,000
		Total stockholders’ equity . . . . .	373,000
Total assets . . . . .	<u>\$741,000</u>	Total liabilities and equity . . . . .	<u>\$741,000</u>

**Additional Information**

- Sales for March total 10,000 units. Each month’s sales are expected to exceed the prior month’s results by 5%. The product’s selling price is \$25 per unit.
- Company policy calls for a given month’s ending inventory to equal 80% of the next month’s expected unit sales. The March 31 inventory is 8,400 units, which complies with the policy. The purchase price is \$15 per unit.
- Sales representatives’ commissions are 12.5% of sales and are paid in the month of the sales. The sales manager’s monthly salary will be \$3,500 in April and \$4,000 per month thereafter.
- Monthly general and administrative expenses include \$8,000 administrative salaries, \$5,000 depreciation, and 0.9% monthly interest on the long-term note payable.
- The company expects 30% of sales to be for cash and the remaining 70% on credit. Receivables are collected in full in the month following the sale (none is collected in the month of the sale).
- All merchandise purchases are on credit, and no payables arise from any other transactions. One month’s purchases are fully paid in the next month.
- The minimum ending cash balance for all months is \$50,000. If necessary, the company borrows enough cash using a short-term note to reach the minimum. Short-term notes require an interest

payment of 1% at each month-end (before any repayment). If the ending cash balance exceeds the minimum, the excess will be applied to repaying the short-term notes payable balance.

- h. Dividends of \$100,000 are to be declared and paid in May.
- i. No cash payments for income taxes are to be made during the second calendar quarter. Income taxes will be assessed at 35% in the quarter.
- j. Equipment purchases of \$55,000 are scheduled for June.

### Required

Prepare the following budgets and other financial information as required:

1. Sales budget, including budgeted sales for July.
2. Purchases budget, the budgeted cost of goods sold for each month and quarter, and the cost of the June 30 budgeted inventory.
3. Selling expense budget.
4. General and administrative expense budget.
5. Expected cash receipts from customers and the expected June 30 balance of accounts receivable.
6. Expected cash payments for purchases and the expected June 30 balance of accounts payable.
7. Cash budget.
8. Budgeted income statement.
9. Budgeted statement of retained earnings.
10. Budgeted balance sheet.

### Planning the Solution

- The sales budget shows expected sales for each month in the quarter. Start by multiplying March sales by 105% and then do the same for the remaining months. July's sales are needed for the purchases budget. To complete the budget, multiply the expected unit sales by the selling price of \$25 per unit.
- Use these results and the 80% inventory policy to budget the size of ending inventory for April, May, and June. Add the budgeted sales to these numbers and subtract the actual or expected beginning inventory for each month. The result is the number of units to be purchased each month. Multiply these numbers by the per unit cost of \$15. Find the budgeted cost of goods sold by multiplying the unit sales in each month by the \$15 cost per unit. Compute the cost of the June 30 ending inventory by multiplying the expected units available at that date by the \$15 cost per unit.
- The selling expense budget has only two items. Find the amount of the sales representatives' commissions by multiplying the expected dollar sales in each month by the 12.5% commission rate. Then include the sales manager's salary of \$3,500 in April and \$4,000 in May and June.
- The general and administrative expense budget should show three items. Administrative salaries are fixed at \$8,000 per month, and depreciation is \$5,000 per month. Budget the monthly interest expense on the long-term note by multiplying its \$200,000 balance by the 0.9% monthly interest rate.
- Determine the amounts of cash sales in each month by multiplying the budgeted sales by 30%. Add to this amount the credit sales of the prior month (computed as 70% of prior month's sales). April's cash receipts from collecting receivables equals the March 31 balance of \$175,000. The expected June 30 accounts receivable balance equals 70% of June's total budgeted sales.
- Determine expected cash payments on accounts payable for each month by making them equal to the merchandise purchases in the prior month. The payments for April equal the March 31 balance of accounts payable shown on the beginning balance sheet. The June 30 balance of accounts payable equals merchandise purchases for June.
- Prepare the cash budget by combining the given information and the amounts of cash receipts and cash payments on account that you computed. Complete the cash budget for each month by either borrowing enough to raise the preliminary balance to the minimum or paying off short-term debt as much as the balance allows without falling below the minimum. Show the ending balance of the short-term note in the budget.
- Prepare the budgeted income statement by combining the budgeted items for all three months. Determine the income before income taxes and multiply it by the 35% rate to find the quarter's income tax expense.
- The budgeted statement of retained earnings should show the March 31 balance plus the quarter's net income minus the quarter's dividends.

- The budgeted balance sheet includes updated balances for all items that appear in the beginning balance sheet and an additional liability for unpaid income taxes. Amounts for all asset, liability, and equity accounts can be found either in the budgets, other calculations, or by adding amounts found there to the beginning balances.

## Solution to Demonstration Problem

### 1. Sales budget

	April	May	June	July
Prior period's unit sales . . . . .	10,000	10,500	11,025	11,576
Plus 5% growth . . . . .	500	525	551	579
Projected unit sales . . . . .	<u>10,500</u>	<u>11,025</u>	<u>11,576</u>	<u>12,155</u>

	April	May	June	Quarter
Projected unit sales . . . . .	10,500	11,025	11,576	
Selling price per unit . . . . .	× \$25	× \$25	× \$25	
Projected sales . . . . .	<u>\$262,500</u>	<u>\$275,625</u>	<u>\$289,400</u>	<u>\$827,525</u>

### 2. Purchases budget

	April	May	June	Quarter
Next period's unit sales (part 1) . . . . .	11,025	11,576	12,155	
Ending inventory percent . . . . .	× 80%	× 80%	× 80%	
Desired ending inventory . . . . .	8,820	9,261	9,724	
Current period's unit sales (part 1) . . . . .	<u>10,500</u>	<u>11,025</u>	<u>11,576</u>	
Units to be available . . . . .	19,320	20,286	21,300	
Less beginning inventory . . . . .	<u>8,400</u>	<u>8,820</u>	<u>9,261</u>	
Units to be purchased . . . . .	<u>10,920</u>	<u>11,466</u>	<u>12,039</u>	
Budgeted cost per unit . . . . .	× \$15	× \$15	× \$15	
Projected purchases . . . . .	<u>\$163,800</u>	<u>\$171,990</u>	<u>\$180,585</u>	<u>\$516,375</u>

#### Budgeted cost of goods sold

	April	May	June	Quarter
This period's unit sales (part 1) . . . . .	10,500	11,025	11,576	
Budgeted cost per unit . . . . .	× \$15	× \$15	× \$15	
Projected cost of goods sold . . . . .	<u>\$157,500</u>	<u>\$165,375</u>	<u>\$173,640</u>	<u>\$496,515</u>

#### Budgeted inventory for June 30

Units (part 2) . . . . .	9,724
Cost per unit . . . . .	× \$15
Total . . . . .	<u>\$145,860</u>

### 3. Selling expense budget

	April	May	June	Quarter
Budgeted sales (part 1) . . . . .	\$262,500	\$275,625	\$289,400	\$827,525
Commission percent . . . . .	× 12.5%	× 12.5%	× 12.5%	× 12.5%
Sales commissions . . . . .	<u>32,813</u>	<u>34,453</u>	<u>36,175</u>	<u>103,441</u>
Manager's salary . . . . .	<u>3,500</u>	<u>4,000</u>	<u>4,000</u>	<u>11,500</u>
Projected selling expenses . . . . .	<u>\$ 36,313</u>	<u>\$ 38,453</u>	<u>\$ 40,175</u>	<u>\$114,941</u>

4. General and administrative expense budget

	April	May	June	Quarter
Administrative salaries . . . . .	\$ 8,000	\$ 8,000	\$ 8,000	\$24,000
Depreciation . . . . .	5,000	5,000	5,000	15,000
Interest on long-term note payable (0.9% × \$200,000) . . . . .	<u>1,800</u>	<u>1,800</u>	<u>1,800</u>	<u>5,400</u>
Projected expenses . . . . .	<u>\$14,800</u>	<u>\$14,800</u>	<u>\$14,800</u>	<u>\$44,400</u>

5. Expected cash receipts from customers

	April	May	June	Quarter
Budgeted sales (part 1) . . . . .	<u>\$262,500</u>	<u>\$275,625</u>	<u>\$289,400</u>	
Ending accounts receivable (70%) . . . . .	<u>\$183,750</u>	<u>\$192,938</u>	<u>\$202,580</u>	
Cash receipts				
Cash sales (30%) . . . . .	\$ 78,750	\$ 82,687	\$ 86,820	\$248,257
Collections of prior period's receivables . . . . .	<u>175,000</u>	<u>183,750</u>	<u>192,938</u>	<u>551,688</u>
Total cash to be collected . . . . .	<u>\$253,750</u>	<u>\$266,437</u>	<u>\$279,758</u>	<u>\$799,945</u>

6. Expected cash payments to suppliers

	April	May	June	Quarter
Cash payments (equal to prior period's purchases) . . . . .	<u>\$156,000</u>	<u>\$163,800</u>	<u>\$171,990</u>	<u>\$491,790</u>
Expected June 30 balance of accounts payable (June purchases) . . . . .			<u>\$180,585</u>	

7. Cash budget

	April	May	June
Beginning cash balance . . . . .	\$ 50,000	\$ 89,517	\$ 50,000
Cash receipts (part 5) . . . . .	<u>253,750</u>	<u>266,437</u>	<u>279,758</u>
Total cash available . . . . .	303,750	355,954	329,758
Cash payments			
Payments for merchandise (part 6) . . . . .	156,000	163,800	171,990
Sales commissions (part 3) . . . . .	32,813	34,453	36,175
Salaries			
Sales (part 3) . . . . .	3,500	4,000	4,000
Administrative (part 4) . . . . .	8,000	8,000	8,000
Interest on long-term note (part 4) . . . . .	1,800	1,800	1,800
Dividends . . . . .		100,000	
Equipment purchase . . . . .			55,000
Interest on short-term notes			
April (\$12,000 × 1.0%) . . . . .	120		
June (\$6,099 × 1.0%) . . . . .			61
Total cash payments . . . . .	<u>202,233</u>	<u>312,053</u>	<u>277,026</u>
Preliminary balance . . . . .	101,517	43,901	52,732
Additional loan . . . . .		6,099	
Loan repayment . . . . .	<u>(12,000)</u>		<u>(2,732)</u>
Ending cash balance . . . . .	<u>\$ 89,517</u>	<u>\$ 50,000</u>	<u>\$ 50,000</u>
Ending short-term notes . . . . .	<u>\$ 0</u>	<u>\$ 6,099</u>	<u>\$ 3,367</u>

8.

<b>WILD WOOD COMPANY</b> Budgeted Income Statement For Quarter Ended June 30, 2009	
Sales (part 1) . . . . .	\$ 827,525
Cost of goods sold (part 2) . . . . .	<u>496,515</u>
Gross profit . . . . .	331,010
<b>Operating expenses</b>	
Sales commissions (part 3) . . . . .	\$103,441
Sales salaries (part 3) . . . . .	11,500
Administrative salaries (part 4) . . . . .	24,000
Depreciation (part 4) . . . . .	15,000
Interest on long-term note (part 4) . . . . .	5,400
Interest on short-term notes (part 7) . . . . .	<u>181</u>
Total operating expenses . . . . .	<u>159,522</u>
Income before income taxes . . . . .	171,488
Income taxes (35%) . . . . .	<u>60,021</u>
Net income . . . . .	<u>\$ 111,467</u>

9.

<b>WILD WOOD COMPANY</b> Budgeted Statement of Retained Earnings For Quarter Ended June 30, 2009	
Beginning retained earnings (given) . . . . .	\$138,000
Net income (part 8) . . . . .	<u>111,467</u>
	249,467
Less cash dividends (given) . . . . .	<u>100,000</u>
Ending retained earnings . . . . .	<u>\$149,467</u>

10.

<b>WILD WOOD COMPANY</b> Budgeted Balance Sheet June 30, 2009	
<b>Assets</b>	
Cash (part 7) . . . . .	\$ 50,000
Accounts receivable (part 5) . . . . .	202,580
Inventory (part 2) . . . . .	<u>145,860</u>
Total current assets . . . . .	398,440
Equipment (given plus purchase) . . . . .	\$535,000
Less accumulated depreciation (given plus expense) . . . . .	<u>105,000</u>
Total assets . . . . .	<u>\$828,440</u>
<b>Liabilities and Equity</b>	
Accounts payable (part 6) . . . . .	\$180,585
Short-term notes payable (part 7) . . . . .	3,367
Income taxes payable (part 8) . . . . .	<u>60,021</u>
Total current liabilities . . . . .	243,973
Long-term note payable (given) . . . . .	<u>200,000</u>
Total liabilities . . . . .	443,973
Common stock (given) . . . . .	235,000
Retained earnings (part 9) . . . . .	<u>149,467</u>
Total stockholders' equity . . . . .	<u>384,467</u>
Total liabilities and equity . . . . .	<u>\$828,440</u>

## APPENDIX

# Production and Manufacturing Budgets

## 7A

Unlike a merchandising company, a manufacturer must prepare a **production budget** instead of a merchandise purchases budget. A production budget, which shows the number of units to be produced each month, is similar to merchandise purchases budgets except that the number of units to be purchased each month (as shown in Exhibit 7.8) is replaced by the number of units to be manufactured each month. A production budget does not show costs; it is *always expressed in units of product*. Exhibit 7A.1 shows the production budget for **Toronto Sticks Company (TSC)**, a manufacturer of hockey sticks. TSC is an exclusive supplier of hockey sticks to Hockey Den, meaning that TSC uses HD's budgeted sales figures (Exhibit 7.6) to determine its production and manufacturing budgets.

**P3** Prepare production and manufacturing budgets.

<b>TSC</b> <b>Production Budget</b> <b>October 2009–December 2009</b>			
	October	November	December
Next period's budgeted sales (units) . . . . .	800	1,400	900
Ratio of inventory to future sales . . . . .	$\times 90\%$	$\times 90\%$	$\times 90\%$
Budgeted ending inventory (units) . . . . .	720	1,260	810
Add budgeted sales for the period (units) . . . . .	<u>1,000</u>	<u>800</u>	<u>1,400</u>
Required units of available production . . . . .	1,720	2,060	2,210
Deduct beginning inventory (units) . . . . .	<u>(900)</u>	<u>(720)</u>	<u>(1,260)</u>
Units to be produced . . . . .	<u><u>820</u></u>	<u><u>1,340</u></u>	<u><u>950</u></u>

**EXHIBIT 7A.1**

Production Budget

A **manufacturing budget** shows the budgeted costs for direct materials, direct labor, and overhead. It is based on the budgeted production volume from the production budget. The manufacturing budget for most companies consists of three individual budgets: direct materials budget, direct labor budget, and overhead budget. Exhibits 7A.2–7A.4 show these three manufacturing budgets for TSC. These budgets yield the total expected cost of goods to be manufactured in the budget period.

The *direct materials budget* is driven by the budgeted materials needed to satisfy each month's production requirement. To this we must add the desired ending inventory requirements. The desired ending inventory of direct materials as shown in Exhibit 7A.2 is 50% of next month's budgeted materials requirements of wood. For instance, in October 2009, an ending inventory of 335 units of material is desired (50% of November's 670 units). The desired ending inventory for December 2009 is 225 units,

<b>TSC</b> <b>Direct Materials Budget</b> <b>October 2009–December 2009</b>			
	October	November	December
Budget production (units) . . . . .	820	1,340	950
Materials requirements per unit . . . . .	$\times 0.5$	$\times 0.5$	$\times 0.5$
Materials needed for production (units) . . . . .	410	670	475
Add budgeted ending inventory (units) . . . . .	<u>335</u>	<u>237.5</u>	<u>225</u>
Total materials requirements (units) . . . . .	745	907.5	700
Deduct beginning inventory (units) . . . . .	<u>(205)</u>	<u>(335)</u>	<u>(237.5)</u>
Materials to be purchased (units) . . . . .	<u><u>540</u></u>	<u><u>572.5</u></u>	<u><u>462.5</u></u>
Material price per unit . . . . .	\$ 20	\$ 20	\$ 20
Total cost of direct materials purchases . . . . .	\$10,800	\$11,450	\$9,250

**EXHIBIT 7A.2**

Direct Materials Budget

computed from the direct material requirement of 450 units for a production level of 900 units in January 2010. The total materials requirements are computed by adding the desired ending inventory figures to that month's budgeted production material requirements. For October 2009, the total materials requirement is 745 units (335 + 410). From the total materials requirement, we then subtract the units of materials available in beginning inventory. For October 2009, the materials available from September 2009 are computed as 50% of October's materials requirements to satisfy production, or 205 units (50% of 410). Therefore, direct materials purchases in October 2009 are budgeted at 540 units (745 – 205). See Exhibit 7A.2.

TSC's *direct labor budget* is shown in Exhibit 7A.3. About 15 minutes of labor time is required to produce one unit. Labor is paid at the rate of \$12 per hour. Budgeted labor hours are computed by multiplying the budgeted production level for each month by one-quarter (0.25) of an hour. Direct labor cost is then computed by multiplying budgeted labor hours by the labor rate of \$12 per hour.

### EXHIBIT 7A.3

#### Direct Labor Budget

TSC Direct Labor Budget October 2009–December 2009			
	October	November	December
Budgeted production (units) . . . . .	820	1,340	950
Labor requirements per unit (hours) . . . . .	$\times 0.25$	$\times 0.25$	$\times 0.25$
Total labor hours needed . . . . .	<u>205</u>	<u>335</u>	<u>237.5</u>
Labor rate (per hour) . . . . .	\$ 12	\$ 12	\$ 12
Labor dollars . . . . .	<u>\$2,460</u>	<u>\$4,020</u>	<u>\$2,850</u>

TSC's *factory overhead budget* is shown in Exhibit 7A.4. The variable portion of overhead is assigned at the rate of \$2.50 per unit of production. The fixed portion stays constant at \$1,500 per month. The budget in Exhibit 7A.4 is in condensed form; most overhead budgets are more detailed, listing each overhead cost item.

### EXHIBIT 7A.4

#### Factory Overhead Budget

TSC Factory Overhead Budget October 2009–December 2009			
	October	November	December
Budgeted production (units) . . . . .	820	1,340	950
Variable factory overhead rate . . . . .	$\times \$2.50$	$\times \$2.50$	$\times \$2.50$
Budgeted variable overhead . . . . .	2,050	3,350	2,375
Budgeted fixed overhead . . . . .	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>
Budgeted total overhead . . . . .	<u>\$3,550</u>	<u>\$4,850</u>	<u>\$3,875</u>

## Summary

### C1 Describe the importance and benefits of budgeting.

Planning is a management responsibility of critical importance to business success. Budgeting is the process management uses to formalize its plans. Budgeting promotes management analysis and focuses its attention on the future. Budgeting also provides a basis for evaluating performance, serves as a source of motivation, is a means of coordinating activities, and communicates management's plans and instructions to employees.

**C2 Explain the process of budget administration.** Budgeting is a detailed activity that requires administration. At least three aspects are important: budget committee, budget reporting, and budget timing. A budget committee oversees the budget preparation. The budget period pertains to the time period for which the budget is prepared such as a year or month.

### C3 Describe a master budget and the process of preparing it.

A master budget is a formal overall plan for a company. It consists of plans for business operations and capital expenditures, plus the financial results of those activities. The budgeting process begins with a sales budget. Based on expected sales volume, companies can budget purchases, selling expenses, and administrative expenses. Next, the capital expenditures budget is prepared, followed by the cash budget and budgeted financial statements. Manufacturers also must budget production quantities, materials purchases, labor costs, and overhead.

### A1 Analyze expense planning using activity-based budgeting.

Activity-based budgeting requires management to identify activities performed by departments, plan necessary activity levels, identify resources required to perform these activities, and budget the resources.

**P1 Prepare each component of a master budget and link each to the budgeting process.** The term *master budget* refers to a collection of individual component budgets. Each component budget is designed to guide persons responsible for activities covered by that component. A master budget must reflect the components of a company and their interaction in pursuit of company goals.

**P2 Link both operating and capital expenditures budgets to budgeted financial statements.** The operating budgets, capital expenditures budget, and cash budget contain much of the infor-

mation to prepare a budgeted income statement for the budget period and a budgeted balance sheet at the end of the budget period. Budgeted financial statements show the expected financial consequences of the planned activities described in the budgets.

**P3 Prepare production and manufacturing budgets.** A manufacturer must prepare a *production budget* instead of a purchases budget. A *manufacturing budget* shows the budgeted production costs for direct materials, direct labor, and overhead.

## Guidance Answers to **Decision Maker** and **Decision Ethics**



**Budget Staffer** Your superior's actions appear unethical because she is using private information for personal gain. As a budget staffer, you are low in the company's hierarchical structure and probably unable to confront this superior directly. You should inform an individual with a position of authority within the organization about your concerns.

**Entrepreneur** You must deal with two issues. First, because fashions and designs frequently change, you cannot heavily rely on previous budgets. As a result, you must carefully analyze the market to understand what designs are in vogue. This will help you plan the product mix and estimate demand. The second issue is the

budgeting period. An annual sales budget may be unreliable because tastes can quickly change. Your best bet might be to prepare monthly and quarterly sales budgets that you continuously monitor and revise.

**Environmental Manager** You are unlikely to have data on this new position to use in preparing your budget. In this situation, you can use activity-based budgeting. This requires developing a list of activities to conduct, the resources required to perform these activities, and the expenses associated with these resources. You should challenge yourself to be absolutely certain that the listed activities are necessary and that the listed resources are required.

## Guidance Answers to **Quick Checks**

- Major benefits include promoting a focus on the future; providing a basis for evaluating performance; providing a source of motivation; coordinating the departments of a business; and communicating plans and instructions.
- The budget committee's responsibility is to provide guidance to ensure that budget figures are realistic and coordinated.
- Budget periods usually coincide with accounting periods and therefore cover a month, quarter, or a year. Budgets can also be prepared for longer time periods, such as five years.
- Rolling budgets are budgets that are periodically revised in the ongoing process of continuous budgeting.
- A master budget is a comprehensive or overall plan for the company that is generally expressed in monetary terms.
- b*
- The master budget includes operating budgets, the capital expenditures budget, and financial budgets.
- c*; Computed as  $(60\% \times 140) + 120 - 50 = 154$ .
- Merchandisers prepare merchandise purchases budgets; manufacturers prepare production and manufacturing budgets.
- A just-in-time system keeps the level of inventory to a minimum and orders merchandise or materials to meet immediate sales demand. A safety stock system maintains an inventory that is large enough to meet sales demands plus an amount to satisfy unexpected sales demands and an amount to cover delayed shipments from suppliers.
- a*
- (a) Operating budgets (such as sales, selling expense, and administrative budgets), (b) capital expenditures budget, (c) financial budgets: cash budget, budgeted income statement, and budgeted balance sheet.



## Key Terms

[mhhe.com/wildMA2e](http://mhhe.com/wildMA2e)

Key Terms are available at the book's Website for learning and testing in an online Flashcard Format.

**Activity-based budgeting (ABB)** (p. 251)  
**Budget** (p. 238)  
**Budgeted balance sheet** (p. 250)  
**Budgeted income statement** (p. 250)  
**Budgeting** (p. 238)  
**Capital expenditures budget** (p. 247)

**Cash budget** (p. 248)  
**Continuous budgeting** (p. 240)  
**General and administrative expense budget** (p. 246)  
**Manufacturing budget** (p. 257)  
**Master budget** (p. 242)

**Merchandise purchases budget** (p. 245)  
**Production budget** (p. 257)  
**Rolling budgets** (p. 240)  
**Safety stock** (p. 245)  
**Sales budget** (p. 244)  
**Selling expense budget** (p. 246)





**Multiple Choice Quiz**

Answers on p. 275

[mhhe.com/wildMA2e](http://mhhe.com/wildMA2e)

**Additional Quiz Questions are available at the book's Website.**



Quiz7

1. A plan that reports the units or costs of merchandise to be purchased by a merchandising company during the budget period is called a
  - a. Capital expenditures budget.
  - b. Cash budget.
  - c. Merchandise purchases budget.
  - d. Selling expenses budget.
  - e. Sales budget.
2. A hardware store has budgeted sales of \$36,000 for its power tool department in July. Management wants to have \$7,000 in power tool inventory at the end of July. Its beginning inventory of power tools is expected to be \$6,000. What is the budgeted dollar amount of merchandise purchases?
  - a. \$36,000
  - b. \$43,000
  - c. \$42,000
  - d. \$35,000
  - e. \$37,000
3. A store has the following budgeted sales for the next five months.

May	\$210,000
June	186,000
July	180,000
August	220,000
September	240,000

Cash sales are 25% of total sales and all credit sales are expected to be collected in the month following the sale. The total amount of cash expected to be received from customers in September is

- a. \$240,000
  - b. \$225,000
  - c. \$ 60,000
  - d. \$165,000
  - e. \$220,000
4. A plan that shows the expected cash inflows and cash outflows during the budget period, including receipts from loans needed to maintain a minimum cash balance and repayments of such loans, is called
    - a. A rolling budget.
    - b. An income statement.
    - c. A balance sheet.
    - d. A cash budget.
    - e. An operating budget.
  - 5.<sup>A</sup>The following sales are predicted for a company's next four months.

	September	October	November	December
Unit sales . .	480	560	600	480

Each month's ending inventory of finished goods should be 30% of the next month's sales. At September 1, the finished goods inventory is 140 units. The budgeted production of units for October is

- a. 572 units.
- b. 560 units.
- c. 548 units.
- d. 600 units.
- e. 180 units.

*Superscript letter <sup>A</sup> denotes assignments based on Appendix 7A.*

**Discussion Questions**

1. Identify at least three roles that budgeting plays in helping managers control and monitor a business.
2. What two common benchmarks can be used to evaluate actual performance? Which of the two is generally more useful?
3. What is the benefit of continuous budgeting?
4. Identify three usual time horizons for short-term planning and budgets.
5. Why should each department participate in preparing its own budget?
6. How does budgeting help management coordinate and plan business activities?
7. Why is the sales budget so important to the budgeting process?
8. What is a selling expense budget? What is a capital expenditures budget?
9. Budgeting promotes good decision making by requiring managers to conduct \_\_\_\_\_ and by focusing their attention on the \_\_\_\_\_.
10. What is a cash budget? Why must operating budgets and the capital expenditures budget be prepared before the cash budget?
- 11.<sup>A</sup>What is the difference between a production budget and a manufacturing budget?
12. Would a manager of a **Best Buy** retail store participate more in budgeting than a manager at the corporate offices? Explain.
13. Does the manager of a local **Circuit City** retail store participate in long-term budgeting? Explain.
14. Assume that **Apple's** iMac division is charged with preparing a master budget. Identify the participants—for example, the sales manager for the sales budget—and describe the information each person provides in preparing the master budget.



*Denotes Discussion Questions that involve decision making.*

**connect** Most materials in this section are available in McGraw-Hill's Connect

Which one of the following sets of items are all necessary components of the master budget?

1. Prior sales reports, capital expenditures budget, and financial budgets.
2. Sales budget, operating budgets, and historical financial budgets.
3. Operating budgets, financial budgets, and capital expenditures budget.
4. Operating budgets, historical income statement, and budgeted balance sheet.

## QUICK STUDY

### QS 7-1

Components of a master budget  
C3

The motivation of employees is one goal of budgeting. Identify three guidelines that organizations should follow if budgeting is to serve effectively as a source of motivation for employees.

### QS 7-2

Budget motivation C1

Brill Company's July sales budget calls for sales of \$800,000. The store expects to begin July with \$30,000 of inventory and to end the month with \$35,000 of inventory. Gross margin is typically 40% of sales. Determine the budgeted cost of merchandise purchases for July.

### QS 7-3

Purchases budget P1

Good management includes good budgeting. (1) Explain why the bottom-up approach to budgeting is considered a more successful management technique than a top-down approach. (2) Provide an example of implementation of the bottom-up approach to budgeting.

### QS 7-4

Budgeting process C2 

RedTop Company anticipates total sales for June and July of \$540,000 and \$472,000, respectively. Cash sales are normally 30% of total sales. Of the credit sales, 25% are collected in the same month as the sale, 70% are collected during the first month after the sale, and the remaining 5% are collected in the second month. Determine the amount of accounts receivable reported on the company's budgeted balance sheet as of July 31.

### QS 7-5

Computing budgeted accounts receivable  
P2

Use the following information to prepare a cash budget for the month ended on March 31 for Grant Company. The budget should show expected cash receipts and cash disbursements for the month of March and the balance expected on March 31.


- a. Beginning cash balance on March 1, \$75,000.
- b. Cash receipts from sales, \$315,000.
- c. Budgeted cash disbursements for purchases, \$204,000.
- d. Budgeted cash disbursements for salaries, \$90,000.
- e. Other budgeted cash expenses, \$30,000.
- f. Cash repayment of bank loan, \$25,000.

### QS 7-6

Cash budget  
P1 P2

Activity-based budgeting is a budget system based on *expected activities*. (1) Describe activity-based budgeting, and explain its preparation of budgets. (2) How does activity-based budgeting differ from traditional budgeting?

### QS 7-7

Activity-based budgeting  
A1 

Luna Company manufactures watches and has a JIT policy that ending inventory must equal 8% of the next month's sales. It estimates that October's actual ending inventory will consist of 24,000 watches. November and December sales are estimated to be 300,000 and 250,000 watches, respectively. Compute the number of watches to be produced that would appear on the company's production budget for the month of November.

### QS 7-8<sup>A</sup>

Production budget  
P3

Refer to information from QS 7-8<sup>A</sup>. Luna Company assigns variable overhead at the rate of \$1.75 per unit of production. Fixed overhead equals \$5,000,000 per month. Prepare a factory overhead budget for November.

### QS 7-9<sup>A</sup>

Factory overhead budget P3

Tech-Cam sells miniature digital cameras for \$800 each. 450 units were sold in May, and it forecasts 2% growth in unit sales each month. Determine (a) the number of camera sales and (b) the dollar amount of camera sales for the month of June.

### QS 7-10

Sales budget P1

**QS 7-11**

Selling expense budget P1

Refer to information from QS 7-10. Tech-Cam pays a sales manager a monthly salary of \$3,000 and a commission of 7.5% of camera sales (in dollars). Prepare a selling expense budget for the month of June.

**QS 7-12**

Cash budget P1

Refer to information from QS 7-10. Assume 30% of Tech-Cam's sales are for cash. The remaining 70% are credit sales; these customers pay in the month following the sale. Compute the budgeted cash receipts for June.


**QS 7-13**

Budgeted financial statements

P2

Following are selected accounts for a company. For each account, indicate whether it will appear on a budgeted income statement (BIS) or a budgeted balance sheet (BBS). If an item will not appear on either budgeted financial statement, label it NA.

Sales . . . . .	_____
Administrative salaries paid . . . . .	_____
Accumulated depreciation . . . . .	_____
Depreciation expense . . . . .	_____
Interest paid on bank loan . . . . .	_____
Cash dividends paid . . . . .	_____
Bank loan owed . . . . .	_____

Most materials in this section are available in McGraw-Hill's Connect 

**EXERCISES**

**Exercise 7-1**

Preparation of merchandise purchases budgets (for three periods)

C3 P1

Troy Company prepares monthly budgets. The current budget plans for a September ending inventory of 38,000 units. Company policy is to end each month with merchandise inventory equal to a specified percent of budgeted sales for the following month. Budgeted sales and merchandise purchases for the three most recent months follow. (1) Prepare the merchandise purchases budget for the months of July, August, and September. (2) Compute the ratio of ending inventory to the next month's sales for each budget prepared in part 1. (3) How many units are budgeted for sale in October?

	Sales (Units)	Purchases (Units)
July . . . . .	170,000	200,000
August . . . . .	320,000	312,000
September . . . . .	280,000	262,000

**Check** July budgeted ending inventory, 64,000

**Exercise 7-2**

Preparation of cash budgets (for three periods)

C3 P2

Franke Co. budgeted the following cash receipts and cash disbursements for the first three months of next year.

	Cash Receipts	Cash Disbursements
January . . . . .	\$525,000	\$484,000
February . . . . .	411,000	350,000
March . . . . .	456,000	520,000

**Check** January ending cash balance, \$20,600

According to a credit agreement with the company's bank, Franke promises to have a minimum cash balance of \$20,000 at each month-end. In return, the bank has agreed that the company can borrow up to \$160,000 at an annual interest rate of 12%, paid on the last day of each month. The interest is computed based on the beginning balance of the loan for the month. The company has a cash balance of \$20,000 and a loan balance of \$40,000 at January 1. Prepare monthly cash budgets for each of the first three months of next year.

**Exercise 7-3**

Preparation of a cash budget

C3 P2

Use the following information to prepare the July cash budget for Anker Co. It should show expected cash receipts and cash disbursements for the month and the cash balance expected on July 31.

- a. Beginning cash balance on July 1: \$63,000.
- b. Cash receipts from sales: 30% is collected in the month of sale, 50% in the next month, and 20% in the second month after sale (uncollectible accounts are negligible and can be ignored). Sales amounts are: May (actual), \$1,700,000; June (actual), \$1,200,000; and July (budgeted), \$1,400,000.

- c. Payments on merchandise purchases: 90% in the month of purchase and 10% in the month following purchase. Purchases amounts are: June (actual), \$620,000; and July (budgeted), \$790,000.
- d. Budgeted cash disbursements for salaries in July: \$220,000.
- e. Budgeted depreciation expense for July: \$11,000.
- f. Other cash expenses budgeted for July: \$230,000.
- g. Accrued income taxes due in July: \$50,000.
- h. Bank loan interest due in July: \$7,000.

**Check** Ending cash balance, \$143,000

Use the information in Exercise 7-3 and the following additional information to prepare a budgeted income statement for the month of July and a budgeted balance sheet for July 31.

- a. Cost of goods sold is 60% of sales.
- b. Inventory at the end of June is \$80,000 and at the end of July is \$30,000.
- c. Salaries payable on June 30 are \$50,000 and are expected to be \$60,000 on July 31.
- d. The equipment account balance is \$1,600,000 on July 31. On June 30, the accumulated depreciation on equipment is \$280,000.
- e. The \$7,000 cash payment of interest represents the 1% monthly expense on a bank loan of \$700,000.
- f. Income taxes payable on July 31 are \$24,600, and the income tax rate applicable to the company is 30%.
- g. The only other balance sheet accounts are: Common Stock, with a balance of \$850,000 on June 30; and Retained Earnings, with a balance of \$931,000 on June 30.

**Exercise 7-4**

Preparing a budgeted income statement and balance sheet

C3 P2

**Check** Net income, \$57,400; Total assets, \$2,702,000

DeVon Company's cost of goods sold is consistently \$30 per unit. The company plans to carry ending merchandise inventory for each month equal to 20% of the next month's budgeted unit sales; August beginning inventory is 2,000 units. All merchandise is purchased on credit, and 40% of the purchases made during a month is paid for in that month. Another 25% is paid for during the first month after purchase, and the remaining 35% is paid for during the second month after purchase. Expected unit sales are: August (actual), 10,000; September (actual), 9,500; October (estimated), 8,750; November (estimated), 8,250. Use this information to determine October's expected cash payments for purchases. (*Hint*: Use the layout of Exhibit 7.8, but revised for the facts given here.)

**Exercise 7-5**

Computing budgeted cash payments for purchases

C3 P2

**Check** Budgeted purchases: August, \$297,000; October, \$259,500

Dollar Value Company purchases all merchandise on credit. It recently budgeted the following month-end accounts payable balances and merchandise inventory balances. Cash payments on accounts payable during each month are expected to be: May, \$1,500,000; June, \$1,530,000; July, \$1,350,000; and August, \$1,495,000. Use the available information to compute the budgeted amounts of (1) merchandise purchases for June, July, and August, and (2) cost of goods sold for June, July, and August.

	Accounts Payable	Merchandise Inventory
May 31 . . . . .	\$120,000	\$250,000
June 30 . . . . .	170,000	200,000
July 31 . . . . .	300,000	250,000
August 31 . . . . .	150,000	350,000

**Exercise 7-6**

Computing budgeted purchases and costs of goods sold

C3 P1 P2

**Check** June purchases, \$1,580,000; June cost of goods sold, \$1,630,000

E-Sound, a merchandising company specializing in home computer speakers, budgets its monthly cost of goods sold to equal 50% of sales. Its inventory policy calls for ending inventory in each month to equal 40% of the next month's budgeted cost of goods sold. All purchases are on credit, and 40% of the purchases in a month is paid for in the same month. Another 40% is paid for during the first month after purchase, and the remaining 20% is paid for in the second month after purchase. The following sales budgets are set: July, \$200,000; August, \$140,000; September, \$170,000; October, \$125,000; and

**Exercise 7-7**

Computing budgeted accounts payable and purchases—sales forecast in dollars

P1 P2

**Check** July purchases, \$88,000; Sept. payments on accts. pay., \$78,400

November, \$115,000. Compute the following: (1) budgeted merchandise purchases for July, August, September, and October; (2) budgeted payments on accounts payable for September and October; and (3) budgeted ending balances of accounts payable for September and October. (*Hint:* For part 1, refer to Exhibits 7.7 and 7.8 for guidance, but note that budgeted sales are in dollars for this assignment.)

**Exercise 7-8<sup>A</sup>**  
Preparing production budgets (for two periods) P3

**Check** Second quarter production, 381,300 units


Electro Company manufactures an innovative automobile transmission for electric cars. Management predicts that ending inventory for the first quarter will be 38,500 units. The following unit sales of the transmissions are expected during the rest of the year: second quarter, 221,000 units; third quarter, 497,000 units; and fourth quarter, 243,500 units. Company policy calls for the ending inventory of a quarter to equal 40% of the next quarter's budgeted sales. Prepare a production budget for both the second and third quarters that shows the number of transmissions to manufacture.

**Exercise 7-9<sup>A</sup>**  
Direct materials budget P3

Refer to information from Exercise 7-8<sup>A</sup>. Electro Company reports direct materials requirements of 0.60 per unit. It also aims to end each quarter with an ending inventory of direct materials equal to 40% of next quarter's budgeted materials requirements. Direct materials cost \$175 per unit. Prepare a direct materials budget for the second quarter.

**Exercise 7-10<sup>A</sup>**  
Direct labor budget P3

Refer to information from Exercise 7-8<sup>A</sup>. Each transmission requires 2 direct labor hours, at a cost of \$18 per hour. Prepare a direct labor budget for the second quarter.

Most materials in this section are available in McGraw-Hill's Connect 

**PROBLEM SET A**

**Problem 7-1A**  
Preparation and analysis of merchandise purchases budgets

C3 P1 

  
mhhe.com/wildMA2e

Herron Supply is a merchandiser of three different products. The company's February 28 inventories are footwear, 18,500 units; sports equipment, 80,000 units; and apparel, 50,000 units. Management believes that excessive inventories have accumulated for all three products. As a result, a new policy dictates that ending inventory in any month should equal 29% of the expected unit sales for the following month. Expected sales in units for March, April, May, and June follow.

	Budgeted Sales in Units			
	March	April	May	June
Footwear . . . . .	15,000	26,500	31,500	35,000
Sports equipment . . . . .	70,500	89,000	96,000	89,500
Apparel . . . . .	40,000	38,000	34,000	23,000

**Required**

1. Prepare a merchandise purchases budget (in units) for each product for each of the months of March, April, and May.

**Analysis Component**

2. The purchases budgets in part 1 should reflect fewer purchases of all three products in March compared to those in April and May. What factor caused fewer purchases to be planned? Suggest business conditions that would cause this factor to both occur and impact the company in this way.

**Problem 7-2A**  
Preparation of cash budgets (for three periods) C3 P2

  
mhhe.com/wildMA2e

During the last week of August, Muir Company's owner approaches the bank for a \$100,000 loan to be made on September 2 and repaid on November 30 with annual interest of 12%, for an interest cost of \$3,000. The owner plans to increase the store's inventory by \$80,000 during September and needs the loan to pay for inventory acquisitions. The bank's loan officer needs more information about Muir's ability to repay the loan and asks the owner to forecast the store's November 30 cash position. On September 1, Muir is expected to have a \$4,000 cash balance, \$152,000 of accounts receivable, and \$115,000 of

accounts payable. Its budgeted sales, merchandise purchases, and various cash disbursements for the next three months follow.

Budgeted Figures*	September	October	November
Sales .....	\$350,000	\$400,000	\$425,000
Merchandise purchases .....	275,000	185,000	180,000
Cash disbursements			
Payroll .....	25,000	30,000	35,000
Rent .....	12,000	12,000	12,000
Other cash expenses .....	38,000	29,000	24,500
Repayment of bank loan .....			100,000
Interest on the bank loan .....			3,000

\* Operations began in August; August sales were \$200,000 and purchases were \$115,000.

The budgeted September merchandise purchases include the inventory increase. All sales are on account. The company predicts that 24% of credit sales is collected in the month of the sale, 44% in the month following the sale, 21% in the second month, 8% in the third, and the remainder is uncollectible. Applying these percents to the August credit sales, for example, shows that \$88,000 of the \$200,000 will be collected in September, \$42,000 in October, and \$16,000 in November. All merchandise is purchased on credit; 85% of the balance is paid in the month following a purchase, and the remaining 15% is paid in the second month. For example, of the \$115,000 August purchases, \$97,750 will be paid in September and \$17,250 in October.

**Required**

Prepare a cash budget for September, October, and November for Muir Company. Show supporting calculations as needed.

**Check** Budgeted cash balance:  
September, \$103,250; October, \$73,250;  
November, \$67,750

Culver Company sells its product for \$165 per unit. Its actual and projected sales follow.

	Units	Dollars
April (actual) .....	4,000	\$ 660,000
May (actual) .....	2,200	363,000
June (budgeted) .....	5,000	825,000
July (budgeted) .....	6,500	1,072,500
August (budgeted) .....	3,700	610,500

**Problem 7-3A**

Preparation and analysis of cash budgets with supporting inventory and purchases budgets

C3 P2 

All sales are on credit. Recent experience shows that 28% of credit sales is collected in the month of the sale, 42% in the month after the sale, 25% in the second month after the sale, and 5% proves to be uncollectible. The product's purchase price is \$110 per unit. All purchases are payable within 10 days. Thus, 60% of purchases made in a month is paid in that month and the other 40% is paid in the next month. The company has a policy to maintain an ending monthly inventory of 19% of the next month's unit sales plus a safety stock of 135 units. The April 30 and May 31 actual inventory levels are consistent with this policy. Selling and administrative expenses for the year are \$1,140,000 and are paid evenly throughout the year in cash. The company's minimum cash balance at month-end is \$60,000. This minimum is maintained, if necessary, by borrowing cash from the bank. If the balance exceeds \$60,000, the company repays as much of the loan as it can without going below the minimum. This type of loan carries an annual 12% interest rate. On May 31, the loan balance is \$39,000, and the company's cash balance is \$60,000.

**Required**

1. Prepare a table that shows the computation of cash collections of its credit sales (accounts receivable) in each of the months of June and July.
2. Prepare a table that shows the computation of budgeted ending inventories (in units) for April, May, June, and July.
3. Prepare the merchandise purchases budget for May, June, and July. Report calculations in units and then show the dollar amount of purchases for each month.

**Check** (1) Cash collections: June, \$548,460; July, \$737,550

(3) Budgeted purchases: May, \$300,520; June, \$581,350

(5) Budgeted ending loan balance: June, \$54,948; July, \$39,375

4. Prepare a table showing the computation of cash payments on product purchases for June and July.
5. Prepare a cash budget for June and July, including any loan activity and interest expense. Compute the loan balance at the end of each month.

**Analysis Component**

6. Refer to your answer to part 5. Culver’s cash budget indicates the company will need to borrow more than \$15,000 in June and will be able to pay most of it back in July. Suggest some reasons that knowing this information in May would be helpful to management.

**Problem 7-4A**

Preparation and analysis of budgeted income statements

C3 P2 

Poole, a one-product mail-order firm, buys its product for \$75 per unit and sells it for \$140 per unit. The sales staff receives a 10% commission on the sale of each unit. Its December income statement follows.

POOLE COMPANY Income Statement For Month Ended December 31, 2009	
Sales .....	\$1,400,000
Cost of goods sold .....	750,000
Gross profit .....	650,000
Expenses	
Sales commissions (10%) .....	140,000
Advertising .....	215,000
Store rent .....	26,000
Administrative salaries .....	42,000
Depreciation .....	52,000
Other expenses .....	13,000
Total expenses .....	488,000
Net income .....	<u>\$ 162,000</u>

Management expects December’s results to be repeated in January, February, and March of 2010 without any changes in strategy. Management, however, has an alternative plan. It believes that unit sales will increase at a rate of 10% *each* month for the next three months (beginning with January) if the item’s selling price is reduced to \$125 per unit and advertising expenses are increased by 15% and remain at that level for all three months. The cost of its product will remain at \$75 per unit, the sales staff will continue to earn a 10% commission, and the remaining expenses will stay the same.

**Required**

1. Prepare budgeted income statements for each of the months of January, February, and March that show the expected results from implementing the proposed changes. Use a three-column format, with one column for each month.

**Analysis Component**

2. Use the budgeted income statements from part 1 to recommend whether management should implement the proposed changes. Explain.

**Problem 7-5A**

Preparation of a complete master budget

C2 C3 P1 P2

Near the end of 2009, the management of Nygaard Sports Co., a merchandising company, prepared the following estimated balance sheet for December 31, 2009.

NYGAARD SPORTS COMPANY Estimated Balance Sheet December 31, 2009	
<b>Assets</b>	
Cash .....	\$ 35,000
Accounts receivable .....	520,000
Inventory .....	142,500
Total current assets .....	697,500
Equipment .....	\$540,000
Less accumulated depreciation .....	67,500
Total assets .....	<u>\$1,170,000</u>

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<b>Liabilities and Equity</b>		
Accounts payable . . . . .	\$345,000	
Bank loan payable . . . . .	14,000	
Taxes payable (due 3/15/2010) . . . . .	<u>91,000</u>	
Total liabilities . . . . .		\$ 450,000
Common stock . . . . .	473,000	
Retained earnings . . . . .	<u>247,000</u>	
Total stockholders' equity . . . . .		<u>720,000</u>
Total liabilities and equity . . . . .		<u>\$1,170,000</u>

To prepare a master budget for January, February, and March of 2010, management gathers the following information.

- a. Nygaard Sports' single product is purchased for \$30 per unit and resold for \$53 per unit. The expected inventory level of 4,750 units on December 31, 2009, is more than management's desired level for 2010, which is 20% of the next month's expected sales (in units). Expected sales are: January, 7,500 units; February, 9,250 units; March, 10,750 units; and April, 10,500 units.
- b. Cash sales and credit sales represent 20% and 80%, respectively, of total sales. Of the credit sales, 57% is collected in the first month after the month of sale and 43% in the second month after the month of sale. For the December 31, 2009, accounts receivable balance, \$130,000 is collected in January and the remaining \$390,000 is collected in February.
- c. Merchandise purchases are paid for as follows: 20% in the first month after the month of purchase and 80% in the second month after the month of purchase. For the December 31, 2009, accounts payable balance, \$70,000 is paid in January and the remaining \$275,000 is paid in February.
- d. Sales commissions equal to 20% of sales are paid each month. Sales salaries (excluding commissions) are \$72,000 per year.
- e. General and administrative salaries are \$156,000 per year. Maintenance expense equals \$2,100 per month and is paid in cash.
- f. Equipment reported in the December 31, 2009, balance sheet was purchased in January 2009. It is being depreciated over eight years under the straight-line method with no salvage value. The following amounts for new equipment purchases are planned in the coming quarter: January, \$36,000; February, \$96,000; and March, \$28,800. This equipment will be depreciated under the straight-line method over eight years with no salvage value. A full month's depreciation is taken for the month in which equipment is purchased.
- g. The company plans to acquire land at the end of March at a cost of \$155,000, which will be paid with cash on the last day of the month.
- h. Nygaard Sports has a working arrangement with its bank to obtain additional loans as needed. The interest rate is 12% per year, and interest is paid at each month-end based on the beginning balance. Partial or full payments on these loans can be made on the last day of the month. The company has agreed to maintain a minimum ending cash balance of \$25,000 in each month.
- i. The income tax rate for the company is 43%. Income taxes on the first quarter's income will not be paid until April 15.

### Required

Prepare a master budget for each of the first three months of 2010; include the following component budgets (show supporting calculations as needed, and round amounts to the nearest dollar):

1. Monthly sales budgets (showing both budgeted unit sales and dollar sales).
2. Monthly merchandise purchases budgets.
3. Monthly selling expense budgets.
4. Monthly general and administrative expense budgets.
5. Monthly capital expenditures budgets.
6. Monthly cash budgets.
7. Budgeted income statement for the entire first quarter (not for each month).
8. Budgeted balance sheet as of March 31, 2010.

**Check** (2) Budgeted purchases:  
January, \$138,000; February, \$286,500  
(3) Budgeted selling expenses:  
January, \$85,500; February, \$104,050  
(6) Ending cash bal.: January,  
\$25,000; February, \$175,308  
(8) Budgeted total assets at  
March 31, \$1,527,448



**Problem 7-6A<sup>A</sup>**

Preparing production and direct materials budgets

C3 P3

Black Diamond Company produces snow skis. Each ski requires 2 pounds of carbon fiber. The company's management predicts that 4,800 skis and 6,100 pounds of carbon fiber will be in inventory on June 30 of the current year and that 152,000 skis will be sold during the next (third) quarter. Management wants to end the third quarter with 3,700 skis and 4,200 pounds of carbon fiber in inventory. Carbon fiber can be purchased for \$15 per pound.

**Required**

1. Prepare the third-quarter production budget for skis.
2. Prepare the third-quarter direct materials (carbon fiber) budget; include the dollar cost of purchases.

**Check** (1) Units manuf., 150,900;  
(2) Cost of carbon fiber purchases, \$4,498,500

**PROBLEM SET B**

**Problem 7-1B**

Preparation and analysis of merchandise purchases budgets

C3 P1 

Water Sports Corp. is a merchandiser of three different products. The company's March 31 inventories are water skis, 60,000 units; tow ropes, 45,000 units; and life jackets, 75,000 units. Management believes that excessive inventories have accumulated for all three products. As a result, a new policy dictates that ending inventory in any month should equal 10% of the expected unit sales for the following month. Expected sales in units for April, May, June, and July follow.

	Budgeted Sales in Units			
	April	May	June	July
Water skis . . . . .	105,000	135,000	195,000	150,000
Tow ropes . . . . .	50,000	45,000	55,000	50,000
Life jackets . . . . .	80,000	95,000	100,000	60,000

**Required**

1. Prepare a merchandise purchases budget (in units) for each product for each of the months of April, May, and June.

**Analysis Component**

2. The purchases budgets in part 1 should reflect fewer purchases of all three products in April compared to those in May and June. What factor caused fewer purchases to be planned? Suggest business conditions that would cause this factor to both occur and affect the company as it has.

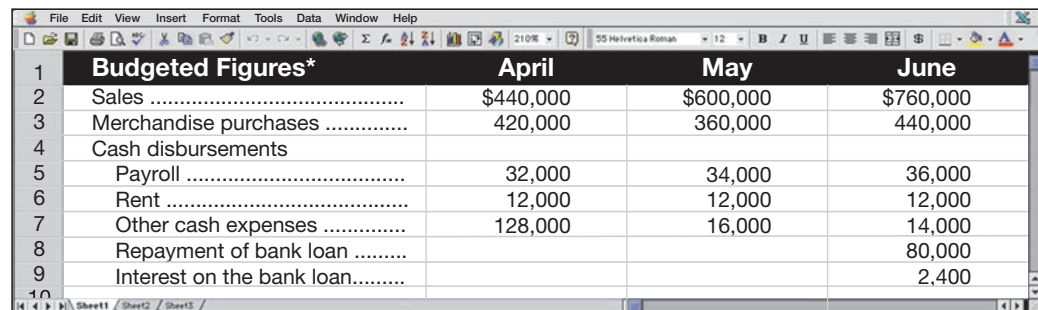
**Check** (1) April budgeted purchases: Water skis, 58,500; Tow ropes, 9,500; Life jackets, 14,500

**Problem 7-2B**

Preparation of cash budgets (for three periods)

C3 P2

During the last week of March, Harlan Stereo's owner approaches the bank for an \$80,000 loan to be made on April 1 and repaid on June 30 with annual interest of 12%, for an interest cost of \$2,400. The owner plans to increase the store's inventory by \$120,000 in April and needs the loan to pay for inventory acquisitions. The bank's loan officer needs more information about Harlan Stereo's ability to repay the loan and asks the owner to forecast the store's June 30 cash position. On April 1, Harlan Stereo is expected to have a \$6,000 cash balance, \$270,000 of accounts receivable, and \$200,000 of accounts payable. Its budgeted sales, merchandise purchases, and various cash disbursements for the next three months follow.



Budgeted Figures*	April	May	June
1 Sales .....	\$440,000	\$600,000	\$760,000
2 Merchandise purchases .....	420,000	360,000	440,000
3 Cash disbursements			
4 Payroll .....	32,000	34,000	36,000
5 Rent .....	12,000	12,000	12,000
6 Other cash expenses .....	128,000	16,000	14,000
7 Repayment of bank loan .....			80,000
8 Interest on the bank loan.....			2,400
9			
10			

\* Operations began in March; March sales were \$360,000 and purchases were \$200,000.

The budgeted April merchandise purchases include the inventory increase. All sales are on account. The company predicts that 25% of credit sales is collected in the month of the sale, 45% in the month following the sale, 20% in the second month, 9% in the third, and the remainder is uncollectible. Applying these percents to the March credit sales, for example, shows that \$162,000 of the \$360,000 will be collected in April, \$72,000 in May, and \$32,400 in June. All merchandise is purchased on credit; 80% of the balance is paid in the month following a purchase and the remaining 20% is paid in the second month. For example, of the \$200,000 March purchases, \$160,000 will be paid in April and \$40,000 in May.

**Required**

Prepare a cash budget for April, May, and June for Harlan Stereo. Show supporting calculations as needed.

**Check** Budgeted cash balance: April, \$26,000; May, \$8,000; June, \$72,000

Parador Company sells its product for \$22 per unit. Its actual and projected sales follow.

	Units	Dollars
January (actual) . . . . .	9,000	\$198,000
February (actual) . . . . .	11,250	247,500
March (budgeted) . . . . .	9,500	209,000
April (budgeted) . . . . .	9,375	206,250
May (budgeted) . . . . .	10,500	231,000

All sales are on credit. Recent experience shows that 40% of credit sales is collected in the month of the sale, 35% in the month after the sale, 23% in the second month after the sale, and 2% proves to be uncollectible. The product’s purchase price is \$12 per unit. All purchases are payable within 21 days. Thus, 30% of purchases made in a month is paid in that month and the other 70% is paid in the next month. The company has a policy to maintain an ending monthly inventory of 20% of the next month’s unit sales plus a safety stock of 100 units. The January 31 and February 28 actual inventory levels are consistent with this policy. Selling and administrative expenses for the year are \$960,000 and are paid evenly throughout the year in cash. The company’s minimum cash balance for month-end is \$25,000. This minimum is maintained, if necessary, by borrowing cash from the bank. If the balance exceeds \$25,000, the company repays as much of the loan as it can without going below the minimum. This type of loan carries an annual 12% interest rate. At February 28, the loan balance is \$20,000, and the company’s cash balance is \$25,000.

**Required**

1. Prepare a table that shows the computation of cash collections of its credit sales (accounts receivable) in each of the months of March and April.
2. Prepare a table showing the computations of budgeted ending inventories (units) for January, February, March, and April.
3. Prepare the merchandise purchases budget for February, March, and April. Report calculations in units and then show the dollar amount of purchases for each month.
4. Prepare a table showing the computation of cash payments on product purchases for March and April.
5. Prepare a cash budget for March and April, including any loan activity and interest expense. Compute the loan balance at the end of each month.

**Check** (1) Cash collections: March, \$215,765; April, \$212,575

(3) Budgeted purchases: February, \$130,800; March, \$113,700

(5) Ending cash balance: March, \$25,000; April, \$33,219

**Analysis Component**

6. Refer to your answer to part 5. Parador’s cash budget indicates whether the company must borrow additional funds at the end of March. Suggest some reasons that knowing the loan needs in advance would be helpful to management.

Tech-Media buys its product for \$90 and sells it for \$200 per unit. The sales staff receives a 12% commission on the sale of each unit. Its June income statement follows.

**Problem 7-4B**

Preparation and analysis of budgeted income statements

C3 P2 

<b>TECH-MEDIA COMPANY</b>	
Income Statement	
For Month Ended June 30, 2009	
Sales .....	\$2,000,000
Cost of goods sold .....	<u>900,000</u>
Gross profit .....	1,100,000
<b>Expenses</b>	
Sales commissions (12%) .....	240,000
Advertising .....	225,000
Store rent .....	32,000
Administrative salaries .....	75,000
Depreciation .....	80,000
Other expenses .....	<u>25,000</u>
Total expenses .....	<u>677,000</u>
Net income .....	<u>\$ 423,000</u>

Management expects June’s results to be repeated in July, August, and September without any changes in strategy. Management, however, has another plan. It believes that unit sales will increase at a rate of 10% *each* month for the next three months (beginning with July) if the item’s selling price is reduced to \$180 per unit and advertising expenses are increased by 20% and remain at that level for all three months. The cost of its product will remain at \$90 per unit, the sales staff will continue to earn a 12% commission, and the remaining expenses will stay the same.

**Required**

1. Prepare budgeted income statements for each of the months of July, August, and September that show the expected results from implementing the proposed changes. Use a three-column format, with one column for each month.

**Analysis Component**

2. Use the budgeted income statements from part 1 to recommend whether management should implement the proposed plan. Explain.

**Check** Budgeted net income: July, \$270,400; August, \$345,640; September, \$428,404

**Problem 7-5B**

Preparation of a complete master budget

C2 C3 P1 P2

Near the end of 2009, the management of Pak Corp., a merchandising company, prepared the following estimated balance sheet for December 31, 2009.

<b>PAK CORPORATION</b>	
Estimated Balance Sheet	
December 31, 2009	
<b>Assets</b>	
Cash .....	\$ 36,000
Accounts receivable .....	470,000
Inventory .....	<u>300,000</u>
Total current assets .....	806,000
Equipment .....	\$1,080,000
Less accumulated depreciation .....	<u>135,000</u> <u>945,000</u>
Total assets .....	<u>\$1,751,000</u>
<b>Liabilities and Equity</b>	
Accounts payable .....	\$ 395,000
Bank loan payable .....	25,000
Taxes payable (due 3/15/2010) .....	<u>20,000</u>
Total liabilities .....	\$ 440,000
Common stock .....	550,000
Retained earnings .....	<u>761,000</u>
Total stockholders’ equity .....	<u>1,311,000</u>
Total liabilities and equity .....	<u>\$1,751,000</u>

To prepare a master budget for January, February, and March of 2010, management gathers the following information.

- a. Pak Corp.'s single product is purchased for \$30 per unit and resold for \$45 per unit. The expected inventory level of 10,000 units on December 31, 2009, is more than management's desired level for 2010, which is 25% of the next month's expected sales (in units). Expected sales are: January, 12,000 units; February, 16,000 units; March, 20,000 units; and April, 18,000 units.
- b. Cash sales and credit sales represent 25% and 75%, respectively, of total sales. Of the credit sales, 60% is collected in the first month after the month of sale and 40% in the second month after the month of sale. For the \$470,000 accounts receivable balance at December 31, 2009, \$330,000 is collected in January 2010 and the remaining \$140,000 is collected in February 2010.
- c. Merchandise purchases are paid for as follows: 20% in the first month after the month of purchase and 80% in the second month after the month of purchase. For the \$395,000 accounts payable balance at December 31, 2009, \$207,000 is paid in January 2010 and the remaining \$188,000 is paid in February 2010.
- d. Sales commissions equal to 20% of sales are paid each month. Sales salaries (excluding commissions) are \$180,000 per year.
- e. General and administrative salaries are \$540,000 per year. Maintenance expense equals \$6,000 per month and is paid in cash.
- f. Equipment reported in the December 31, 2009, balance sheet was purchased in January 2009. It is being depreciated over 8 years under the straight-line method with no salvage value. The following amounts for new equipment purchases are planned in the coming quarter: January, \$72,000; February, \$96,000; and March, \$28,800. This equipment will be depreciated using the straight-line method over 8 years with no salvage value. A full month's depreciation is taken for the month in which equipment is purchased.
- g. The company plans to acquire land at the end of March at a cost of \$150,000, which will be paid with cash on the last day of the month.
- h. Pak Corp. has a working arrangement with its bank to obtain additional loans as needed. The interest rate is 12% per year, and interest is paid at each month-end based on the beginning balance. Partial or full payments on these loans can be made on the last day of the month. Pak has agreed to maintain a minimum ending cash balance of \$36,000 in each month.
- i. The income tax rate for the company is 30%. Income taxes on the first quarter's income will not be paid until April 15.

### Required

Prepare a master budget for each of the first three months of 2010; include the following component budgets (show supporting calculations as needed, and round amounts to the nearest dollar):

1. Monthly sales budgets (showing both budgeted unit sales and dollar sales).
2. Monthly merchandise purchases budgets.
3. Monthly selling expense budgets.
4. Monthly general and administrative expense budgets.
5. Monthly capital expenditures budgets.
6. Monthly cash budgets.
7. Budgeted income statement for the entire first quarter (not for each month).
8. Budgeted balance sheet as of March 31, 2010.

**Check** (2) Budgeted purchases:  
January, \$180,000; February, \$510,000;  
(3) Budgeted selling expenses:  
January, \$123,000; February, \$159,000

(6) Ending cash bal.: January,  
\$36,000; February, \$55,617

(8) Budgeted total assets at  
March 31, \$2,355,317

Thorpe Company produces baseball bats. Each bat requires 3 pounds of aluminum alloy. Management predicts that 4,000 bats and 7,500 pounds of aluminum alloy will be in inventory on March 31 of the current year and that 125,000 bats will be sold during this year's second quarter. Management wants to end the second quarter with 3,000 finished bats and 6,000 pounds of aluminum alloy in inventory. Aluminum alloy can be purchased for \$4 per pound.

### Required

1. Prepare the second-quarter production budget for bats.
2. Prepare the second-quarter direct materials (aluminum alloy) budget; include the dollar cost of purchases.

### Problem 7-6B<sup>A</sup>

Preparing production and direct materials budgets

C3 P3

**Check** (1) Units manuf., 124,000;  
(2) Cost of aluminum  
purchases, \$1,482,000

**SERIAL PROBLEM**

(This serial problem began in Chapter 1 and continues through most of the book. If previous chapter segments were not completed, the serial problem can begin at this point. It is helpful, but not necessary, to use the Working Papers that accompany the book.)

Success Systems

**SP 7** Adriana Lopez expects second quarter 2010 sales of her new line of computer furniture to be the same as the first quarter's sales (reported below) without any changes in strategy. Monthly sales averaged 40 desk units (sales price of \$1,250) and 20 chairs (sales price of \$500).

<b>SUCCESS SYSTEMS</b>	
<b>Segment Income Statement*</b>	
<b>For Quarter Ended March 31, 2010</b>	
Sales <sup>†</sup> . . . . .	\$180,000
Cost of goods sold <sup>‡</sup> . . . . .	<u>115,000</u>
Gross profit . . . . .	65,000
Expenses	
Sales commissions (10%) . . . . .	18,000
Advertising expenses . . . . .	9,000
Other fixed expenses . . . . .	<u>18,000</u>
Total expenses . . . . .	<u>45,000</u>
Net income . . . . .	<u>\$ 20,000</u>

\* Reflects revenue and expense activity only related to the computer furniture segment.

<sup>†</sup> Revenue: (120 desks × \$1,250) + (60 chairs × \$500) = \$150,000 + \$30,000 = \$180,000

<sup>‡</sup> Cost of goods sold: (120 desks × \$750) + (60 chairs × \$250) + \$10,000 = \$115,000

Lopez believes that sales will increase each month for the next three months (April, 48 desks, 32 chairs; May, 52 desks, 35 chairs; June, 56 desks, 38 chairs) if selling prices are reduced to \$1,150 for desks and \$450 for chairs, and advertising expenses are increased by 10% and remain at that level for all three months. The products' variable cost will remain at \$750 for desks and \$250 for chairs. The sales staff will continue to earn a 10% commission, the fixed manufacturing costs per month will remain at \$10,000 and other fixed expenses will remain at \$6,000 per month.


**Required**

1. Prepare budgeted income statements for each of the months of April, May, and June that show the expected results from implementing the proposed changes. Use a three-column format, with one column for each month.
2. Use the budgeted income statements from part 1 to recommend whether Lopez should implement the proposed changes. Explain.

**Check** (1) Budgeted income (loss): April, \$(660); May, \$945

**BEYOND THE NUMBERS**

**REPORTING IN ACTION**

P2 C2 C3 



**BTN 7-1** Financial statements often serve as a starting point in formulating budgets. You are assigned to review **Best Buy's** financial statements to determine its cash paid for dividends in the current year and the budgeted cash needed to pay its next year's dividend.

**Required**

1. Which financial statement(s) reports the amount of (a) cash dividends paid and (b) annual cash dividends declared? Explain where on the statement(s) this information is reported.
2. Indicate the amount of cash dividends (a) paid in the year ended March 3, 2007, and (b) to be paid (budgeted for) next year under the assumption that annual cash dividends equal 20% of the prior year's net income.

**Fast Forward**

3. Access Best Buy's financial statements for a fiscal year ending after March 3, 2007, from either its Website [[BestBuy.com](http://BestBuy.com)] or the SEC's EDGAR database [[www.SEC.gov](http://www.SEC.gov)]. Compare your answer for part 2 with actual cash dividends paid for that fiscal year. Compute the error, if any, in your estimate. Speculate as to why dividends were higher or lower than budgeted.

**BTN 7-2** One source of cash savings for a company is improved management of inventory. To illustrate, assume that **Best Buy** and **Circuit City** both have \$300,000 per month in sales in the Virginia area, and both forecast this level of sales per month for the next 24 months. Also assume that both Best Buy and Circuit City have a 20% contribution margin and equal fixed costs, and that cost of goods sold is the only variable cost. Assume that the main difference between Best Buy and Circuit City is the distribution system. Best Buy uses a just-in-time system and requires ending inventory of only 10% of next month's sales in inventory at each month-end. However, Circuit City is building an improved distribution system and currently requires 40% of next month's sales in inventory at each month-end.

**Required**

1. Compute the amount by which Circuit City can reduce its inventory level if it can match Best Buy's system of maintaining an inventory equal to 10% of next month's sales. (*Hint:* Focus on the facts given and only on the Virginia area.)
2. Explain how the analysis in part 1 that shows ending inventory levels for both the 40% and 10% required inventory policies can help justify a just-in-time inventory system. You can assume a 15% interest cost for resources that are tied up in ending inventory.

**COMPARATIVE ANALYSIS**P2 

**BTN 7-3** Both the budget process and budgets themselves can impact management actions, both positively and negatively. For instance, a common practice among not-for-profit organizations and government agencies is for management to spend any amounts remaining in a budget at the end of the budget period, a practice often called "use it or lose it." The view is that if a department manager does not spend the budgeted amount, top management will reduce next year's budget by the amount not spent. To avoid losing budget dollars, department managers often spend all budgeted amounts regardless of the value added to products or services. All of us pay for the costs associated with this budget system.

**Required**

Write a one-half page report to a local not-for-profit organization or government agency offering a solution to the "use it or lose it" budgeting problem.

**ETHICS CHALLENGE**C1 C2 

**BTN 7-4** The sales budget is usually the first and most crucial of the component budgets in a master budget because all other budgets usually rely on it for planning purposes.

**Required**

Assume that your company's sales staff provides information on expected sales and selling prices for items making up the sales budget. Prepare a one-page memorandum to your supervisor outlining concerns with the sales staff's input in the sales budget when its compensation is at least partly tied to these budgets. More generally, explain the importance of assessing any potential bias in information provided to the budget process.

**COMMUNICATING IN PRACTICE**P1 

**TAKING IT TO THE NET**

**BTN 7-5** Access information on e-budgets through The Manage Mentor: [http://www.themanagementor.com/kuniverse/kmailers\\_universe/finance\\_kmailers/cfa/budgeting2.htm](http://www.themanagementor.com/kuniverse/kmailers_universe/finance_kmailers/cfa/budgeting2.htm)  
Read the information provided at this website and complete the following requirements.

**Required**

1. Assume the role of a senior manager in a large, multidivision company. What are the benefits of using e-budgets?
2. As a senior manager, what concerns do you have with the concept and application of e-budgets?

**TEAMWORK IN ACTION**

**BTN 7-6** Your team is to prepare a budget report outlining the costs of attending college (full-time) for the next two semesters (30 hours) or three quarters (45 hours). This budget's focus is solely on attending college; do not include personal items in the team's budget. Your budget must include tuition, books, supplies, club fees, food, housing, and all costs associated with travel to and from college. This budgeting exercise is similar to the initial phase in activity-based budgeting. Include a list of any assumptions you use in completing the budget. Be prepared to present your budget in class.

**ENTREPRENEURIAL DECISION**

**BTN 7-7** **Jibbitz** produces charms to fit in the holes of **Crocs** shoes. Assume Jibbitz is considering expanding its product line to include necklaces that hold the charms. They plan on meeting with a financial institution for potential funding and have asked by its loan officers for their business plan.

**Required**

1. What should Jibbitz's business plan include?
2. How can budgeting help the owners efficiently develop and operate their business?

**HITTING THE ROAD**

**BTN 7-8** To help understand the factors impacting a sales budget, you are to visit three businesses with the same ownership or franchise membership. Record the selling prices of two identical products at each location, such as regular and premium gas sold at **Chevron** stations. You are likely to find a difference in prices for at least one of the three locations you visit.

**Required**

1. Identify at least three external factors that must be considered when setting the sales budget. (*Note:* There is a difference between internal and external factors that impact the sales budget.)
2. What factors might explain any differences identified in the prices of the businesses you visited?

**GLOBAL DECISION**

**BTN 7-9** Access **DSG's** income statement ([www.DSGiplc.com](http://www.DSGiplc.com)) for the year ended April 28, 2007.

**Required**

1. Is DSG's administrative expense budget likely to be an important budget in its master budgeting process? Explain. (*Hint:* Review its Note 3.)
2. Identify three types of expenses that would be reported as administrative expenses on DSG's income statement.
3. Who likely has the initial responsibility for DSG's administrative expense budget? Explain.

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## ANSWERS TO MULTIPLE CHOICE QUIZ

1. c

2. e; Budgeted purchases = \$36,000 + \$7,000 - \$6,000 = \$37,000

3. b; Cash collected = 25% of September sales + 75% of August sales =  
(0.25 × \$240,000) + (0.75 × \$220,000) = \$225,000

4. d

5. a; 560 units + (0.30 × 600 units) - (0.30 × 560 units) = 572 units