

The Master Budget



LEARNING OBJECTIVES

After completing this chapter, you should be able to answer the following questions:

1

Why is budgeting important?

2

How is strategic planning related to budgeting?

3

What is the starting point of a master budget and why?

4

How are the various schedules in a master budget prepared and how do they relate to one another?

5

Why is the cash budget so important in the master budgeting process?

6

What benefits are provided by a budget?

7

(Appendix) How does a budget manual facilitate the budgeting process?

The HON Company, a wholly-owned subsidiary of HON INDUSTRIES Inc. and a *Fortune 1000* company, is highly regarded in the office furniture manufacturing industry. The company is recognized as America's leader in value office furniture, and the largest domestic manufacturer of middle market office furniture, offering the industry's broadest lines of office furniture in both wood and steel. A nationwide distribution network and world-class manufacturing capabilities strategically located throughout the United States provide efficient product delivery.

The company was incorporated in 1944 under the leadership of founder C. Maxwell Stanley. He believed success in business would come to a company that anchored its activities in treating customers, suppliers, workforce, and neighbors with fairness and respect. Stanley invited Clement T. Hanson, a brother-in-law and successful advertising executive, and H. Wood Miller, an industrial designer, to join him in founding a company on these principles.

The three pooled their resources to incorporate "The Home-O-Nize Co." They planned to make a revolutionary design of steel kitchen cabinets, but a postwar shortage of steel delayed operations. The firm's first product was a small index card file box that sold for kitchen use.

They initially decided to provide manufacturing services to other companies, until the steel shortage abated.

As small amounts of sheet steel became available, they made white metal storage cabinets. By painting them olive green, the cabinets were ideal for office use.

Eventually, the name "Home-O-Nize" evolved into "HON." Due to rapid growth in the 1960s and 1970s, a corporate identity was needed. Thus, the Home-O-Nize name was changed to HON INDUSTRIES. HON INDUSTRIES is the corporate entity of today under which the HON Company and other sister companies operate.

The HON Company has overcome obstacles of change through use of an effective budgeting system. Managers at the HON Company communicate and coordinate operating plans through a process called continuous quarterly budgeting. The typical quarterly budget process is done in five basic steps over a six-week period: (1) Develop the sales budget. (2) Convert the sales budget to a plant production and shipping schedule. (3) Prepare cost/expense budgets. (4) Consolidate budgets and compare with strategic plan. (5) Prepare a budget package for parent company and "sell it" to executive management.

Continuous budgeting is the vehicle for ensuring both understanding and ownership by frontline workers by communicating a corporate vision, empowering employees to act on the vision, and targeting and tracking short-term wins.

SOURCES: The HON INDUSTRIES Inc. Web site, <http://www.honi.com>, and the HON Company Web site, <http://www.honcompany.com> (March 3, 2000); Ralph Drtina, Steve Hoeger, and John Schaub, "Continuous Budgeting at the HON Company," *Management Accounting* (January 1996), p. 20.

In virtually any endeavor, intelligent behavior involves visualizing the future, imagining what results one wishes to occur, and determining the activities and resources required to achieve those results. If the process is complex, the means of obtaining results should be documented. Inscribing complex plans is necessary because of the human tendency to forget and the difficulty of mentally processing many facts and relationships at the same time.

Planning is the cornerstone of effective management, and effective planning requires that managers must predict, with reasonable precision, the key variables that affect company performance and conditions. These predictions provide management with a foundation for effective problem solving, control, and resource allocation. Planning (especially in financial terms) is important when future conditions are expected to be approximately the same as current ones, but it is *critical* when conditions are expected to change.

During the strategic planning process, managers attempt to agree on company goals and objectives and how to achieve them. Typically, goals are stated as desired abstract achievements (such as "to become a market leader for a particular

budgeting budget

product”). Objectives are desired quantifiable results for a specified time (such as “to manufacture 200,000 units of a particular product with fewer than 1 percent defects next year”). Achievement of a company’s desired goals and objectives requires complex activities, uses diverse resources, and necessitates formalized planning.

A plan should include qualitative narratives of goals, objectives, and means of accomplishment. However, if plans were limited to qualitative narratives, comparing actual results to expectations would only allow generalizations, and no measurement of how well the organization met its specified objectives would be possible. The process of formalizing plans and translating qualitative narratives into a documented, quantitative format is called **budgeting**. The end result of this process is a **budget**, which expresses an organization’s commitment to planned activities and resource acquisition and use. Such a commitment is based on predictions, protocols, and a collective promise to accomplish the agreed-on results.

This chapter covers the budgeting process and preparation of the master budget. Although budgeting is important for all organizations, the process becomes exceedingly complex in entities that have significant pools of funds and resources.

THE BUDGETING PROCESS

1

Why is budgeting important?

Budgeting is an important part of an organization’s entire planning process. As with other planning activities, budgeting helps provide a focused direction or a path chosen from many alternatives. Management generally indicates the direction chosen through some accounting measure of financial performance, such as net income, earnings per share, or sales level expressed in dollars or units. Such accounting-based measures provide specific quantitative criteria against which future performance (also recorded in accounting terms) can be compared. Thus, a budget is a type of standard, allowing variances to be computed.

Budgets are the *financial* culmination of predictions and assumptions about achieving not only financial but also nonfinancial goals and objectives. Nonfinancial performance goals and objectives may include throughput, customer satisfaction, defect minimization, and on-time deliveries. Budgets can help identify potential problems in achieving specified organizational goals and objectives. By quantifying potential difficulties and making them visible, budgets can help stimulate managers to think of ways to overcome those difficulties before they are realized. Cross-functional teams are often used to balance the various agendas of functional management throughout the firm.

A well-prepared budget can also be an effective device to communicate objectives, constraints, and expectations to all organizational personnel. Such communication promotes understanding of what is to be accomplished, how those accomplishments are to be achieved, and the manner in which resources are to be allocated. Determination of resource allocations is made, in part, from a process of obtaining information, justifying requests, and negotiating compromises.

Participation in the budgeting process helps to produce a spirit of cooperation, motivate employees, and instill a feeling of teamwork. Employee participation is needed to effectively integrate necessary information from various sources as well as to obtain individual managerial commitment to the resulting budget. At the same time, the greater the degree of participation by all personnel affected in the budgeting process, the greater the time and cost involved. Traditionally, to say that a company uses a large degree of participation has implied that budgets have been built from the bottom of the organization upward. As the accompanying News Note indicates, however, some larger companies are now using technology and top-down budgets to bring about significant advantages while preserving intense ongoing communications with employees at all levels.

The budget sets the resource constraints under which managers must operate for the upcoming budget period. Thus, the budget becomes the basis for controlling activities and resource usage. Most managers in U.S. companies make periodic

<http://www.hackettbenchmarking.com>

<http://www.allstate.com>

<http://www.fujitsu.com>

<http://www.nationwidefinancial.com>

<http://www.owenscorning.com>

<http://www.sprint.com>

<http://www.texaco.com>



Replacing a Whim and a Prayer with Relevant Data

A company cannot grow effectively without a well-conceived strategy and a supporting budget, yet many companies invest inordinate time, energy and financial resources to develop such plans only to change or even ignore them. Christine Gattenio, CPA and vice-president at Hackett Benchmarking Solutions, oversees corporate benchmarking surveys and says companies put an exhaustive amount of time into these exercises, “with very little return.”

A few Fortune 1000 companies—including Allstate, Fujitsu, Nationwide Financial Services, Owens Corning, Sprint and Texaco—recognize they’ve been guilty of inadequate planning and budgeting. To improve those processes, they’re trading their usual bottom-up planning and multi-iterative budgeting processes for top-down strategic plans budgeted by department managers. And they are compensating the managers for achieving measurable results.

The cost of such an overhaul is high, not only in time and effort but also in dollars. For large companies, the investment can run as much as \$40 million. That price tag includes consulting fees, in-house staff time and the purchase and customizing of state-of-the-art software to link disparate corporate data across the enterprise—essential for effective planning and budgeting.

Planning and budgeting reengineering requires patience, intensive ongoing communication with employees, investment in new data-gathering software tools and, most important, the willingness of a company’s finance group to evolve. Data collecting and disseminating—the traditional functions of a finance group—will be subsumed, with finance personnel morphing into analysts, strategists and advocates.

Consultants say the improved decision-making capabilities wrought by successful reengineering justify the high price tag. “Companies can double their initial return on investment within a few years, thanks to better decision making, reduced planning cycles, a more motivated, collaborative workforce and a sharper competitive edge,” says Lawrence Serven, a principal at the Buttonwood Group, a Stamford, Connecticut, research and consulting firm. Serven believes that planning and budgeting reengineering is a trend that will build in momentum in the next 10 years. He estimates that a quarter of the Fortune 1000 are currently starting on such a course.

SOURCE: Russ Banham, “Better Budgets,” *Journal of Accountancy* (February 2000), p. 37ff. Reprinted with permission from the *Journal of Accountancy*. Copyright © 2000 by American Institute of CPAs. Opinions of the authors are their own and do not necessarily reflect policies of the AICPA.

budget-to-actual comparisons that allow them to determine how well they are doing, assess variance causes, and implement rational and realistic changes that can, among other benefits, create greater budgetary conformity.

Although budgets are typically expressed in financial terms, they must begin with nonquantitative factors. The budgeting and planning processes are concerned with all organizational resources—raw material, inventory, supplies, personnel, and facilities—and can be viewed from a long-term or a short-term perspective.

Managers who plan on a long-range basis (5 to 10 years) are engaged in strategic planning. Top-level management performs this process, often with the assistance of several key staff members. The result is a statement of long-range organizational goals and the strategies and policies that will help achieve those goals. Strategic planning is not concerned with day-to-day operations, although the strategic plan is the foundation on which short-term planning is based.

Managers engaging in strategic planning should identify key variables, believed to be the direct causes of the achievement or nonachievement of organizational goals and objectives. Key variables can be internal (under the control of management) or external (normally noncontrollable by management). Approximately 48 percent of planning time currently is spent analyzing external factors. In a study done by The Futures Group, the critical external factors as viewed by domestic respondents to the study are as follows:

- competitor actions,
- U.S. market conditions,

2

How is strategic planning related to budgeting?

- political/regulatory climate (U.S.),
- emerging technology issues,
- consumer trends and attitudes,
- international market conditions,
- demographics, and
- political/regulatory climate (international).¹

Effective strategic planning requires that managers build plans and budgets that blend and harmonize external considerations and influences with the firm's internal factors. Budgeting, in the context of Robert Kaplan's and David Norton's writings on the use of the balanced scorecard (BSC) in the accompanying News Note. (A BSC discussion is included in Chapter 20.)

After identifying key variables, management should gather information related to them. Much of this information is historical and qualitative and provides a useful starting point for tactical planning activities. Tactical planning determines the specific objectives and means by which strategic plans will be achieved. Some tactical

NEWS NOTE



GENERAL BUSINESS

The Balanced Scorecard and Drill-Down Software

Kaplan and Norton's balanced scorecard appeared to be a particular threat to the old style of budgeting and controlling. Kaplan and Norton's superb technique has taken the business world by storm. The idea is that companies should plan and monitor not just bottom-line profit or EPS figures, but the overall progress of the company in a balanced way. The company should, of course, measure financial performance, but also customer satisfaction, innovation and learning, and key performance indicators (KPIs) such as cycle time, yield, etc. Thus the company as a whole can get a favorable score when doing well on both short-term performance and indicators of future success. Prior to the balanced scorecard there was a belief that pressures to make short-term profits often obscured the need for continual internal improvement, new product development and the customer delight that would lead to repeat buys. Behavioral theorists certainly see merit in the balanced scorecard and Kaplan and others have developed the technique so that subsidiary objectives can be set down to operational level, helping employees understand how their contribution fits in with overall corporate strategy and success.

Software developed for the balanced scorecard includes Sapling's NetScore, where one can use the "Strategic Traceability Chain" to ensure that objectives with measurable targets or KPIs are set, made up of many sub-targets. The control pyramid is thus strategic at the top and yet detailed or operational for supervisors or employees further down the organization. If supervisors and junior executives have appropriate targets and the information is fed correctly into the system the strategic performance

can be easily monitored by senior management. Based on Kaplan's suggested image, the software's output resembles car or aircraft dials which show if the performance is empty/weak or all the way through to full/excellent. If one realizes that a measure such as customer satisfaction is below the halfway or target mark, one can click on the measure to drill-down and see what makes up the customer satisfaction score. It may be that there are four sub-measures, of which one, say the company's percentage of sales returns, is the problem. Similarly, even if there are numerous levels to be drilled, the senior executive can get to the source of what the issue is, which if left unchecked could have had a strategic impact on the company's future.

The attraction of these types of systems to the CEO and senior executive is clear. Senior management can think lofty strategic thoughts while simply keeping an eye on the balanced scorecard dials; only getting involved in the exceptional issues which (with excellent graphics) "jump out" and call to him or her for action. Despite exaggerated hype the benefits of the balanced scorecard with its key performance indicators (KPI's) across various aspects of the business appears to be a winner.

Despite startling headings in some articles claiming that the budget was dead, a funeral would have been embarrassingly premature. Detailed reading of these cases indicate that where companies now had "no budget," they instead had a plan, a rolling forecast, or some other yardstick which could be called, er—well, a budget.

SOURCE: Paul Prendergast, "Budgets Hit Back," *Management Accounting* (January 2000), p. 15. Reprinted by permission of the Chartered Institute of Management Accountants, UK.

¹ Staff, "Extrovert or Introvert," *Public Utilities Fortnightly* (November 1, 1998), pp. 70ff.

plans, such as corporate policy statements, exist for the long term and address repetitive situations. Most tactical plans, however, are short term (1 to 18 months); they are considered “single-use” plans and have been developed to address a given set of circumstances or to cover a specific period of time.

The annual budget is an example of a single-use tactical plan. Although a budget is typically prepared for a one-year period, shorter period (quarterly and monthly) plans should also be included for the budget to work effectively. A well-prepared budget translates a company’s strategic and tactical plans into usable guides for company activities. Exhibit 13–1 illustrates the relationships among strategic planning, tactical planning, and budgeting.

Both strategic and tactical planning require that the latest information regarding the economy, environment, technological developments, and available resources be incorporated into the setting of goals and objectives. This information is used to adjust the previously gathered historical information for any changes in the key variables for the planning period. The planning process also demands that, as activity takes place and plans are implemented, a monitoring system be in place to provide feedback so that the control function can be operationalized.

Management reviews the budget prior to approving and implementing it to determine whether the forecasted results are acceptable. The budget may indicate that results expected from the planned activities do not achieve the desired objectives. In this case, planned activities are reconsidered and revised so that they more effectively achieve the desired outcomes expressed during the tactical planning stage.

After a budget is accepted, it is implemented and considered a standard against which performance can be measured. Managers operating under budget guidelines should be provided copies of all appropriate budgets. These managers should also be informed that their performance will be evaluated by comparing actual results to budgeted amounts. Feedback should generally be made by budget category for specific times, such as one month.

Who?	What?	How?	Why?
Top management	Strategic planning	Statement of organizational mission, goals, and strategies; long range (5–10 years)	Establish a long-range vision of the organization and provide a sense of unity of and commitment to specified purposes
Top management and mid-management	Tactical planning	Statement of organizational plans; short range (1–18 months)	Provide direction for achievement of strategic plans; state strategic plans in terms on which managers can act; furnish a basis against which results can be measured
Top management, mid-management, and operational management	Budgeting	Quantitative and monetary statements that coordinate company activities for a year or less	Allocate resources effectively and efficiently; indicate a commitment to objectives; provide a monetary control device

EXHIBIT 13–1

Relationships Among Planning Processes

Once the budget is implemented, the control phase begins, which includes making actual-to-budget comparisons, determining variances, investigating variance causes, taking necessary corrective action, and providing feedback to operating managers. Feedback, both positive and negative, is essential to the control process, and, to be useful, must be provided in a timely manner.

The preceding discussion details a budgeting process, but like many other business practices, budgeting may be unique to individual countries. For example, the lengthy and highly specific budgeting process used by many U.S. companies differs dramatically from that used by many Japanese companies. Japanese companies view the budget more as a device to help focus on achieving group and firm-level targets than as a control device by which to gauge individual performance.

Regardless of the budgeting process, the result is what is known as a master budget. This budget is actually a comprehensive set of budgets, budgetary schedules, and pro forma organizational financial statements.

THE MASTER BUDGET

operating budget

The master budget is composed of both operating and financial budgets as shown in Exhibit 13–2. An **operating budget** is expressed in both units and dollars. When an operating budget relates to revenues, the units presented are expected to be sold, and the dollars reflect selling prices. In contrast, when an operating budget relates to cost, the input units presented are expected to be either transformed into output units or consumed, and the dollars reflect costs.

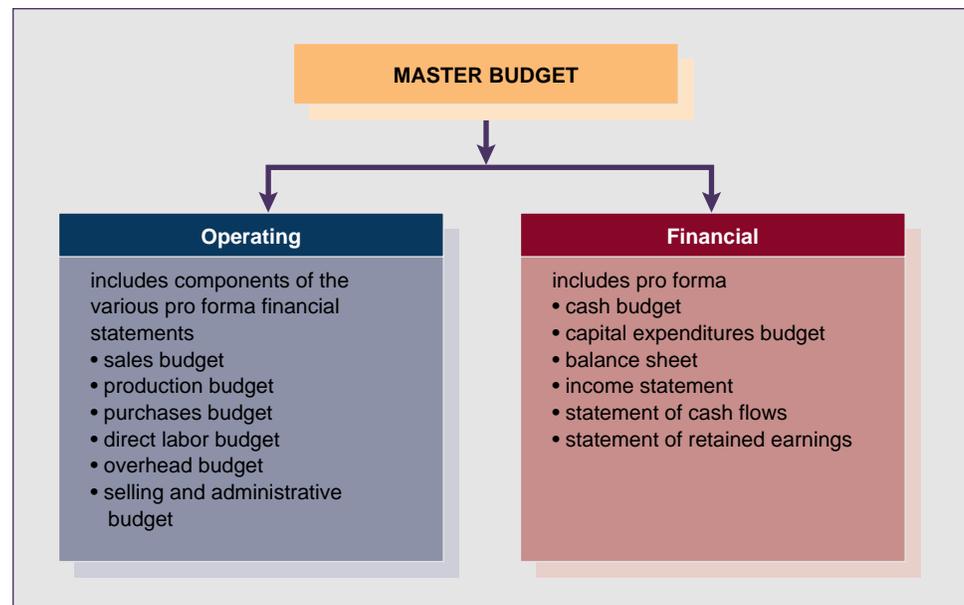
financial budget

Monetary details from the operating budgets are aggregated to prepare **financial budgets**, which indicate the funds to be generated or consumed during the budget period. Financial budgets include cash and capital budgets as well as projected or pro forma financial statements. These budgets are the ultimate focal points for top management.

The master budget is prepared for a specific period and is static in the sense that it is based on a single level of output demand.² Expressing the budget on a

EXHIBIT 13-2

Components of a Master Budget



² Companies may engage in contingency planning, providing for multiple budgeting paths. For example, a company may construct three budgets, respectively, for a high level of activity, an expected level of activity, and a low level of activity. If actual activity turns out to be either higher or lower than expected, management has a budget ready.

single output level is necessary to facilitate the many time-consuming financial arrangements that must be made before beginning operations for the budget period. Such arrangements include making certain that an adequate number of personnel are hired, needed production and/or storage space is available, and suppliers, prices, delivery schedules, and quality of resources are confirmed.

The sales demand level selected for use in the master budget preparation affects all other organizational components. Because of the budgetary interrelationships illustrated in Exhibit 13-3, all departmental components must interact in a coordinated manner. A budget developed by one department is often an essential ingredient in developing another department's budget.

The budgetary process shown in Exhibit 13-3 presents the interaction of the various functional areas of a manufacturing organization involved with preparing a master budget. The process begins with the Sales Department's estimates of the types, quantities, and timing of demand for the company's products. The budget is typically prepared for a year and then subdivided into quarterly and monthly periods.

A production manager combines sales estimates with additional information from Purchasing, Personnel, Operations, and Capital Facilities; the combined information allows the production manager to specify the types, quantities, and timing of products to be manufactured. The accounts receivable area uses sales estimates, in conjunction with estimated collection patterns, to determine the amounts and timing of cash receipts.

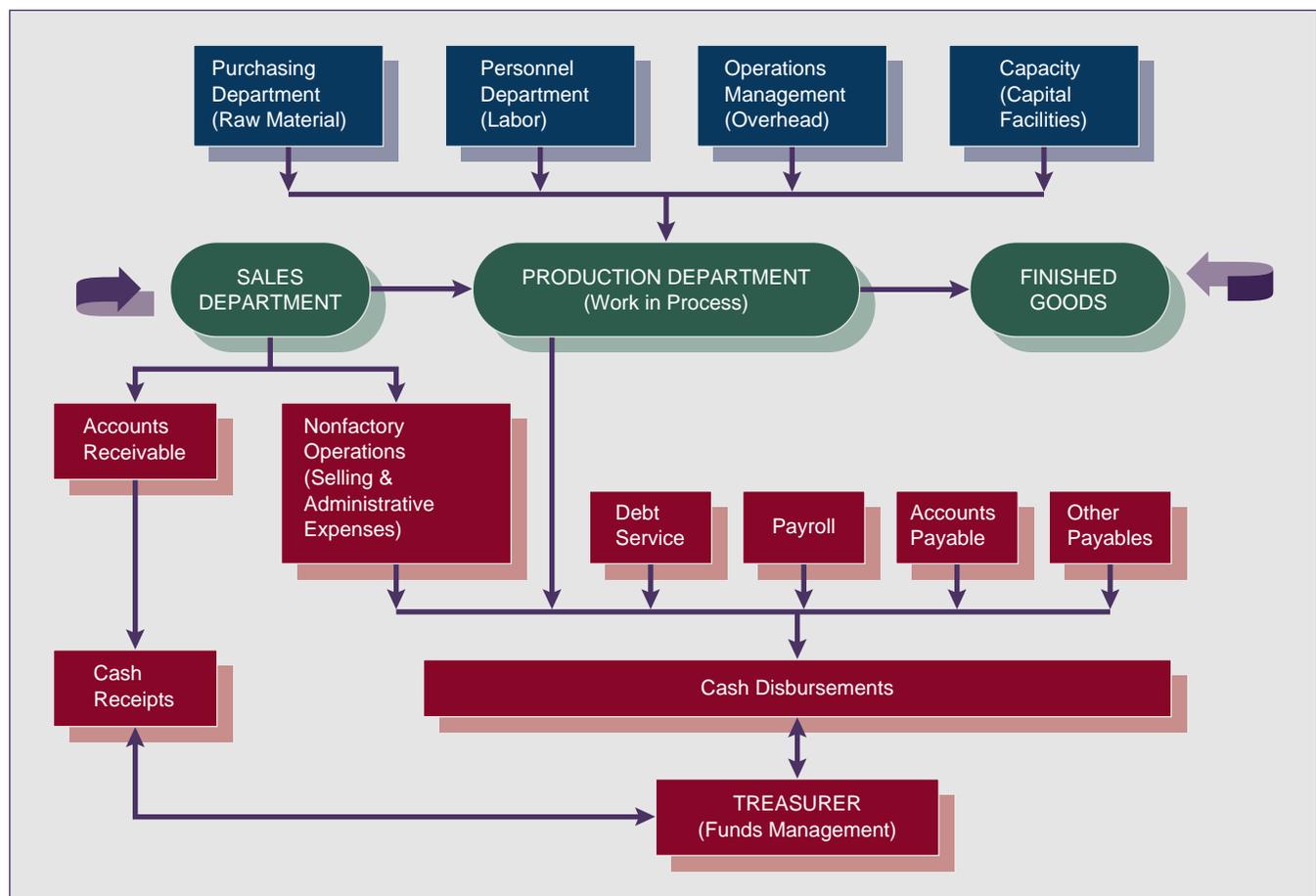
For the treasurer to manage the organization's flow of funds properly, cash receipts and cash disbursements information must be matched from all areas so that cash is available when needed and in the quantity needed.

3

What is the starting point of a master budget and why?

EXHIBIT 13-3

The Budgetary Process in a Manufacturing Organization

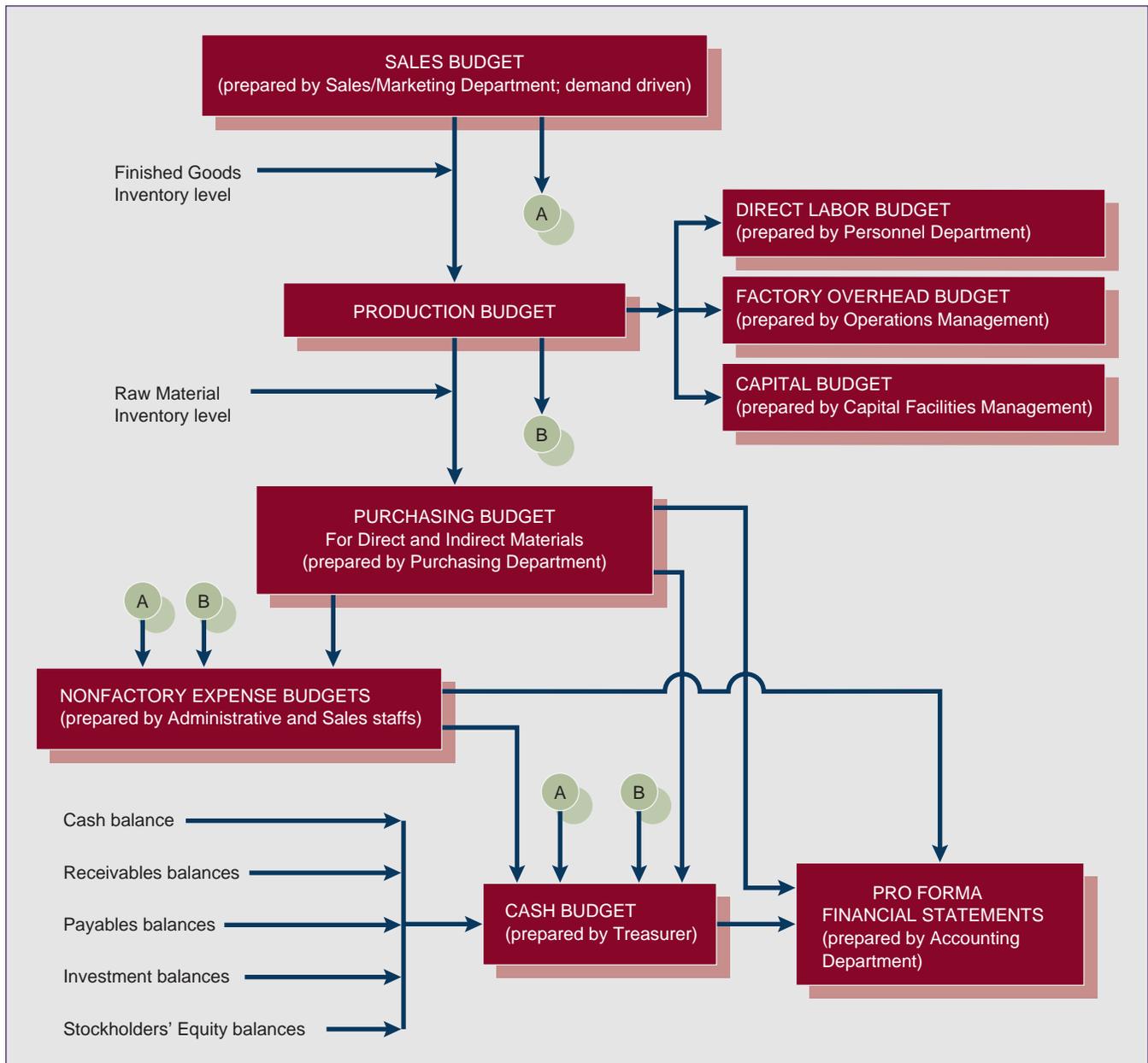


Note that some information must flow back into a department from which it began. For example, the Sales Department must receive finished goods information to know whether goods are in stock (or can be produced) before selling products. In addition, the treasurer must *receive* continual information on cash receipts and disbursements as well as *provide* information to various organizational units on funds availability so that proper funds management can be maintained.

If top management encourages participation by lower-level managers in the budgeting process, each department either prepares its own budget or provides information for inclusion in a budget. Exhibit 13-4 presents an overview of the component budget preparation sequence of the master budget, indicates which departments are responsible for which budget's preparation, and illustrates how the budgets interface with one another.

EXHIBIT 13-4

The Master Budget: An Overview



The master budget begins with a sales budget based on expected demand. Production and cash flows are planned using the chosen sales level, and ultimately pro forma financial statements are prepared. The information flow is visible from Exhibit 13–4, but the quantitative and monetary implications are not. Therefore, the next section of the chapter is devoted to the preparation of a master budget.

THE MASTER BUDGET ILLUSTRATED

This illustration uses information from Better Brackets, a small company that has been in business for several years. The company, which produces a bracket used to attach legs to tables and chairs, is preparing its 2001 budget and has estimated total annual sales at 900,000 brackets. Although annual sales would be detailed on a monthly basis, the Better Brackets illustration focuses only on the budgets for the first quarter of 2001. The process of developing the master budget is the same regardless of whether the time frame is one year or one quarter.

The December 31, 2000, balance sheet presented in Exhibit 13–5 provides account balances needed to begin preparation of the master budget. The December 31, 2000, balances are really estimates rather than actual figures because the budget process for 2001 must begin significantly before December 31, 2000. The company's budgetary time schedule depends on many factors, including its size and degree of forecasting sophistication. Assume that Better Brackets begins its budgeting process in November 2000, when the 2001 sales forecast is received by management or the budget committee.

Sales Budget

The sales budget is prepared in both units and sales dollars. The selling price set for 2001 is \$0.50 per bracket, regardless of sales territory or customer. Monthly demand and its related revenue impact for the first four months of 2001 are shown in Exhibit 13–6. Dollar sales figures are computed by multiplying sales quantities by product selling prices. April information is presented because some elements of the March budget require the following month's information.

4

How are the various schedules in a master budget prepared and how do they relate to one another?

EXHIBIT 13-5

Balance Sheet—December 31, 2000

ASSETS		LIABILITIES AND STOCKHOLDERS' EQUITY	
Current Assets		Current Liabilities	
Cash	\$ 6,000	Accounts Payable	\$ 4,330
Accounts Receivable	\$ 24,000	Dividends Payable (payment scheduled for March 31)	25,000
Less Allowance for Uncollectibles	(432)	Total Current Liabilities	\$ 29,330
	23,568		
Inventories		Stockholders' Equity	
Raw Material (31,800 ounces)	\$ 636	Common Stock	\$180,000
Finished Goods (4,000 units)	748	Retained Earnings	101,622
Total Current Assets	\$ 30,952	Total Stockholders' Equity	281,622
Plant Assets		Total Liabilities and Stockholders' Equity	\$310,952
Property, Plant, and Equipment	\$370,000		
Less Accumulated Depreciation	(90,000)		
	280,000		
Total Assets	\$310,952		

EXHIBIT 13-6

Sales Budget for the Three Months and Quarter Ending March 31, 2001

	January	February	March	Total for Quarter	April*
Sales in units	80,000	70,000	75,000	225,000	64,000
Sales in dollars	\$40,000	\$35,000	\$37,500	\$112,500	\$32,000

*Information for April is needed for subsequent computations.

Production Budget

The production budget follows from the sales budget and uses information regarding the type, quantity, and timing of units to be sold. Sales information is used in conjunction with beginning and ending inventory information so that managers can schedule necessary production. The following formula provides the computation for units to be produced:

Number of units to be sold (from sales budget)	XXX
+ Number of units desired in ending inventory	<u>XXX</u>
= Total units needed during period	XXX
– Number of units in beginning inventory	<u>(XXX)</u>
= Units to be produced	<u>XXX</u>

The number of units desired in ending inventory is determined and specified by company management. Desired ending inventory balance is generally a function of the quantity and timing of demand in the upcoming period as related to the firm's capacity and speed to produce particular units. Frequently, management stipulates that ending inventory be equal to a given percentage of the next period's projected sales. Other alternatives include a constant amount of inventory, a buildup of inventory for future high-demand periods, or near-zero inventory under a just-in-time system. The decision about ending inventory levels results from the consideration of whether a firm wants to have constant production with varying inventory levels or variable production with constant inventory levels.

Managers should consider the high costs of stockpiling inventory before making a decision about how much inventory to keep on hand. Demand for Better Brackets' products is relatively constant, but the company's most active sales season is in the fall. The company's ending finished inventory policy for December through March is that FG inventory equal 5 percent of the next month's sales. Considering this policy and using the sales information from Exhibit 13-6, the production budget shown in Exhibit 13-7 is prepared.

The January beginning inventory balance is 4,000 units that were on hand at December 31, 2000, which represents 5 percent of January's estimated sales of 80,000 units. Desired March ending inventory is 5 percent of April sales of 64,000 (given in Exhibit 13-6). Better Brackets does not have any work in process in-

EXHIBIT 13-7

Production Budget for the Three Months and Quarter Ending March 31, 2001

	January	February	March	Total
Sales in units (from Exhibit 13-6)	80,000	70,000	75,000	225,000
+ Desired ending inventory	<u>3,500</u>	<u>3,750</u>	<u>3,200</u>	<u>3,200</u>
= Total needed	83,500	73,750	78,200	228,200
– Beginning inventory	<u>(4,000)</u>	<u>(3,500)</u>	<u>(3,750)</u>	<u>(4,000)</u>
= Units to be produced	<u>79,500</u>	<u>70,250</u>	<u>74,450</u>	<u>224,200</u>

ventory because all units placed into production are assumed to be fully completed each period.³

Peter Pallans, director and production manager for Forbes, Inc., in New York, discusses developing a magazine production budget in the accompanying News Note.

Purchases Budget

Direct material is essential to production and must be purchased each period in sufficient quantities to meet production needs. In addition, the quantities of direct material purchased must be in conformity with the company's desired ending inventory policies.

Better Brackets' management ties its policy for ending inventories of direct material to its production needs for the following month. Because of occasional difficulty in obtaining the quality of materials needed, Better Brackets' ending inventories

GENERAL BUSINESS



NEWS NOTE

Primer on Production Budgets

What will it cost? How much will we spend? Can we do it cheaper? Production people are not accountants by trade, but a major part of their function is to understand and communicate the financial ramifications of producing a magazine. As publishers create new print products, advertising vehicles and promotions, production costs are becoming increasingly important for all magazine companies.

The production director's basic tool for providing financial data is the manufacturing budget. With a good working budget, the director can let management know what it will need to spend in a specified time frame. Because production represents such a large part of a magazine's overall budget, it's a major factor in how management makes fiscal decisions about the rest of the company's operations. Stay educated about suppliers' needs.

But a budget is really only a guess as to what will be spent. Annual manufacturing budgets are prepared long before suppliers announce any price increases. And departments such as ad sales and circulation must tell production what they plan to do (number of ad pages, special projects, distribution projections) in the year ahead, and keep production informed about any changes as the year progresses. Knowledge about future trends and past production spending is key. By staying educated about suppliers' market factors, internal needs and final

costs, you can keep management abreast of how to spend wisely.

The manufacturing budget is based on three main components: printing and prepress, paper and distribution. Since printing cost increases are spelled out in the contract, you should be able to avoid getting hit with costs beyond your budget. These increases are frequently tied to statistics such as the consumer price index or the inflation rate, which are forecast fairly well.

Then you need accurate projections of what the sales and circulation departments want to produce. Now, I personally don't use all their proposed numbers exactly, because some projections may be inflated or deflated. Be sure to take a historical perspective. If a department gives me information that forecasts something different for a particular month, I know I should still budget for what we've produced in the past. But sales and circulation may not even know what they will end up needing. If sales sells 20 more ads than were budgeted for, the cost information originally communicated to management may be misleading. The only way to check accuracy is to compare the estimated to the actual costs on a regular basis, say monthly or quarterly.

SOURCE: Peter I. Pallans, "Primer on Production Budgets," *The Magazine for Magazine Management* (August 1999), pp. 62ff.

³ Most manufacturing entities do not produce only whole units during the period. Normally, partially completed beginning and ending work in process inventories will exist. These inventories create the need to use equivalent units of production when computing the production budget.

of direct material from December through March equal 10 percent of the quantities needed for the following month's production.

Companies may have different policies for the direct material associated with different products or for different seasons of the year. For example, a company may maintain only a minimal ending inventory of a direct material that is consistently available in the quantity and quality desired. Alternatively, if a material is difficult to obtain at certain times of the year (such as certain components for spice preparation), a company may stockpile that material for use in future periods.

The purchases budget is first stated in whole units of finished products and then converted to direct material component requirements and dollar amounts. Production of a Better Brackets unit requires only one direct material: four ounces of metal. Material cost has been estimated by the purchasing agent as \$0.02 per ounce of metal. Exhibit 13-8 shows Better Brackets' purchases cost for each month of the first quarter of 2001. Note that beginning and ending inventory quantities are expressed first in terms of brackets and then converted to the appropriate quantity measure (ounces of metal). The total budgeted cost of direct material purchases for the quarter is \$17,816 (\$6,286 + \$5,654 + \$5,876).

Personnel Budget

Given expected production, the Engineering and Personnel Departments can work together to determine the necessary labor requirements for the factory, sales force, and office staff. Labor requirements are stated in total number of people, specific number of types of people (skilled laborers, salespeople, clerical personnel, and so forth), and production hours needed for factory employees. Labor costs are computed from items such as union labor contracts, minimum wage laws, fringe benefit costs, payroll taxes, and bonus arrangements. The various personnel amounts will be shown, as appropriate, in either the direct labor budget, manufacturing overhead budget, or selling and administrative budget.

Direct Labor Budget

Better Brackets' management has reviewed the staffing requirements and has developed the direct labor cost estimates shown in Exhibit 13-9 for the first quarter

EXHIBIT 13-8

Purchases Budget for the Three Months and Quarter Ending March 31, 2001

	January	February	March	Quarter
Units to be produced (from Exhibit 13-7)	79,500	70,250	74,450	224,200
+ EI (10% of next month's production)*	7,025	7,445	6,450	6,450
= Total whole units needed	86,525	77,695	80,900	230,650
- Beginning inventory	(7,950)**	(7,025)	(7,445)	(7,950)
= Finished units for which purchases are required	<u>78,575</u>	<u>70,670</u>	<u>73,455</u>	<u>222,700</u>
METAL PURCHASES				
Finished units	78,575	70,670	73,455	222,700
× Ounces needed per unit	× 4	× 4	× 4	× 4
= Total ounces to be purchased	314,300	282,680	293,820	890,800
× Price per ounce	× \$0.02	× \$0.02	× \$0.02	× \$0.02
= Total cost of metal purchases	<u>\$ 6,286</u>	<u>\$ 5,654</u>	<u>\$ 5,876</u>	<u>\$17,816</u>
*April production is expected to be 64,500 units.				
**BI of RM was 31,800; each unit requires 4 ounces, so there was enough RM for 7,950 units or 10% of the following month's production.				

	January	February	March	Total
Units of production	79,500	70,250	74,450	224,200
× Standard hours allowed	<u>.005</u>	<u>.005</u>	<u>.005</u>	<u>.005</u>
= Total hours allowed	397.5	351.25	372.25	1,121
× Average wage rate (including fringe cost)	× <u>\$12</u>	× <u>\$12</u>	× <u>\$12</u>	× <u>\$12</u>
= Direct labor cost	<u>\$ 4,770</u>	<u>\$ 4,215</u>	<u>\$ 4,467</u>	<u>\$ 13,452</u>

EXHIBIT 13-9

Direct Labor Budget for the Three Months and Quarter Ending March 31, 2001

of 2001. Factory direct labor costs are based on the standard hours of labor needed to produce the number of units shown in the production budget. The average wage rate includes both the direct labor payroll rate and the payroll taxes and fringe benefits related to direct labor (because these items usually add between 25 and 30 percent to the base labor cost). All compensation is paid in the month in which it is incurred. Therefore, Better Brackets will have no accrued liability for direct labor cost at March 31, 2001.

Overhead Budget

Another production cost that management must estimate is overhead. Exhibit 13-10 presents Better Brackets' monthly cost of each overhead item for the first quarter of 2001. The company has determined that machine hours is the best predictor of overhead costs.

In estimating overhead, all fixed and variable costs must be specified and mixed costs must be separated into their fixed (*a*) and variable (*b*) components. Each overhead amount shown is calculated using the $y = a + bX$ formula discussed in Chapter 3. For example, March maintenance cost is the fixed amount of \$175 plus (\$0.30 times 1,240 estimated hours of machine time) or $\$175 + \$372 = \$547$. Both total cost and cost net of depreciation are shown in the budget. The net of depreciation cost is expected to be paid in cash during the month and will affect the cash budget.

	Value of		January	February	March	Total
	(fixed)	(variable)				
	<i>a</i>	<i>b</i>				
Estimated machine hours (X) (assumed)			1,325	1,171	1,240	3,736
Overhead item:						
Depreciation	\$ 600	\$ —	\$ 600	\$ 600	\$ 600	\$ 1,800
Indirect material	—	0.20	265	234	248	747
Indirect labor	1,000	0.50	1,663	1,585	1,620	4,868
Utilities	100	0.20	365	334	348	1,047
Property tax	100	—	100	100	100	300
Insurance	50	—	50	50	50	150
Maintenance	175	0.30	573	526	547	1,646
Total cost (y)	<u>\$2,025</u>	<u>\$1.20</u>	<u>\$3,616</u>	<u>\$3,429</u>	<u>\$3,513</u>	<u>\$10,558</u>
Total cost net of depreciation			<u>\$3,016</u>	<u>\$2,829</u>	<u>\$2,913</u>	<u>\$ 8,758</u>

EXHIBIT 13-10

Overhead Budget for the Three Months and Quarter Ending March 31, 2001

Selling and Administrative Budget

Selling and administrative (S&A) expenses can be predicted in the same manner as overhead costs. Exhibit 13–11 presents the first quarter 2001 Better Brackets S&A budget. Sales figures, rather than production levels, are the activity measure used to prepare this budget. The company has two salespeople who receive \$500 per month plus a 4 percent commission on sales. Administrative salaries total \$2,000 per month.

Capital Budget

The budgets included in the master budget focus on the short-term or upcoming fiscal period. Managers, however, must also assess such long-term needs as plant and equipment purchases and budget for those expenditures in a process called capital budgeting. The capital budget is prepared separately from the master budget, but because expenditures are involved, capital budgeting does affect the master budgeting process.⁴

As shown in Exhibit 13–12, Better Brackets' managers have decided that a \$23,000 piece of metal extruding machinery will be purchased and paid for in February. The machinery will be placed into service when installation is complete in April 2001 after installation and testing. Depreciation on the extruding machinery will not be included in the overhead calculation until installation is complete.

5

Why is the cash budget so important in the master budgeting process?

Cash Budget

After the preceding budgets have been developed, a cash budget can be constructed. The cash budget may be the most important schedule prepared during the budgeting process because, without cash, a company cannot survive.

EXHIBIT 13-11

Selling and Administrative Budget for the Three Months and Quarter Ending March 31, 2001

			January	February	March	Total
Predicted sales (from Exhibit 13–6)			\$40,000	\$35,000	\$37,500	\$112,500
	Value of					
	(fixed)	(variable)				
	<i>a</i>	<i>b</i>				
S&A Item:						
Supplies	\$ —	\$0.010	\$ 400	\$ 350	\$ 375	\$ 1,125
Depreciation	200	—	200	200	200	600
Miscellaneous	100	0.001	140	135	138	413
Compensation						
Salespeople	1,000	0.040	2,600	2,400	2,500	7,500
Administrative	2,000		2,000	2,000	2,000	6,000
Total cost (y)	<u>\$3,300</u>	<u>\$0.051</u>	<u>\$ 5,340</u>	<u>\$ 5,085</u>	<u>\$ 5,213</u>	<u>\$ 15,638</u>
Total cost (net of depreciation)			<u>\$ 5,140</u>	<u>\$ 4,885</u>	<u>\$ 5,013</u>	<u>\$ 15,038</u>

EXHIBIT 13-12

Capital Budget for the Three Months and Quarter Ending March 31, 2001

	January	February	March	Total
Acquisition—machinery	\$0	\$23,000	\$0	\$23,000
Cash payment for machinery	0	23,000	0	23,000

⁴ Capital budgeting is discussed in depth in Chapter 14.

The following model can be used to summarize cash receipts and disbursements in a way that assists managers to devise appropriate financing measures to meet company needs.

Cash Budget Model

Beginning cash balance		XXX
+ Cash receipts (collections)		XXX
= Cash available for disbursements exclusive of financing		XXX
– Cash needed for disbursements (purchases, direct labor, overhead, S&A, taxes, bonuses, etc.)		(XXX)
= Cash excess or deficiency (a)		XXX
– Minimum desired cash balance		(XXX)
= Cash needed or available for investment or repayment		XXX
Financing methods:		
± Borrowing (repayments)	XXX	
± Issue (reacquire) capital stock	XXX	
± Sell (acquire) investments or plant assets	XXX	
± Receive (pay) interest or dividends	XXX	
Total impact (+ or –) of planned financing (b)		XXX
= Ending cash balance (c), where [(c) = (a) ± (b)]		XXX

CASH RECEIPTS AND ACCOUNTS RECEIVABLE

Once sales dollars have been determined, managers translate revenue information into cash receipts through the use of an expected collection pattern. This pattern considers the collection patterns experienced in the recent past and management's judgment about changes that could disturb current collection patterns. For example, changes that could weaken current collection patterns include recessionary conditions, increases in interest rates, less strict credit granting practices, or ineffective collection practices.

In specifying collection patterns, managers should recognize that different types of customers pay in different ways. Any sizable, unique category of clientele should be segregated. Better Brackets has two different types of customers: (1) cash customers who never receive a discount and (2) credit customers. Of the credit customers, manufacturers and wholesalers are allowed a 2 percent cash discount; retailers are not allowed the discount.



Although budgeting is not an exact science, neither is it random predictions about future events. Significant care must be taken with underlying assumptions and analysis of future economic conditions.

Better Brackets has determined from historical data that the collection pattern diagrammed in Exhibit 13–13 is applicable to its customers. Of each month's sales, 20 percent will be for cash and 80 percent will be on credit. The 40 percent of the credit customers who are allowed the discount pay in the month of the sale. Collections from the remaining credit customers are as follows: 20 percent in the month of sale; 50 percent in the month following the sale; and 29 percent in the second month following the sale. One percent of credit sales not taking a discount is uncollectible.

Using the sales budget, information on November and December 2000 sales, and the collection pattern, management can estimate cash receipts from sales during the first three months of 2001. Management must have November and December sales information because collections for credit sales extend over three months, meaning that collection of some of the previous year's sales occur early in the current year. Better Brackets' November and December sales were \$44,000 and \$46,000, respectively. Projected monthly collections in the first quarter of 2001 are shown in Exhibit 13–14. The individual calculations relate to the alternative collection patterns and the corresponding percentages that are presented in Exhibit 13–13. All amounts have been rounded to the nearest dollar.

The amounts for November and December collections can be reconciled to the December 31, 2000, balance sheet (Exhibit 13–5), which indicated an Accounts Receivable balance of \$24,000. This amount appears in the collection schedule as follows:

December 31, 2000, Balance in Accounts Receivable:

January collections of November sales	\$ 6,125
Estimated November bad debts	211
January collections of December sales	11,040
February collections of December sales	6,403
Estimated December bad debts	221
December 31, 2000, balance in Accounts Receivable	<u>\$24,000</u>

EXHIBIT 13-13

*Better Brackets' Collection
Pattern for Sales*

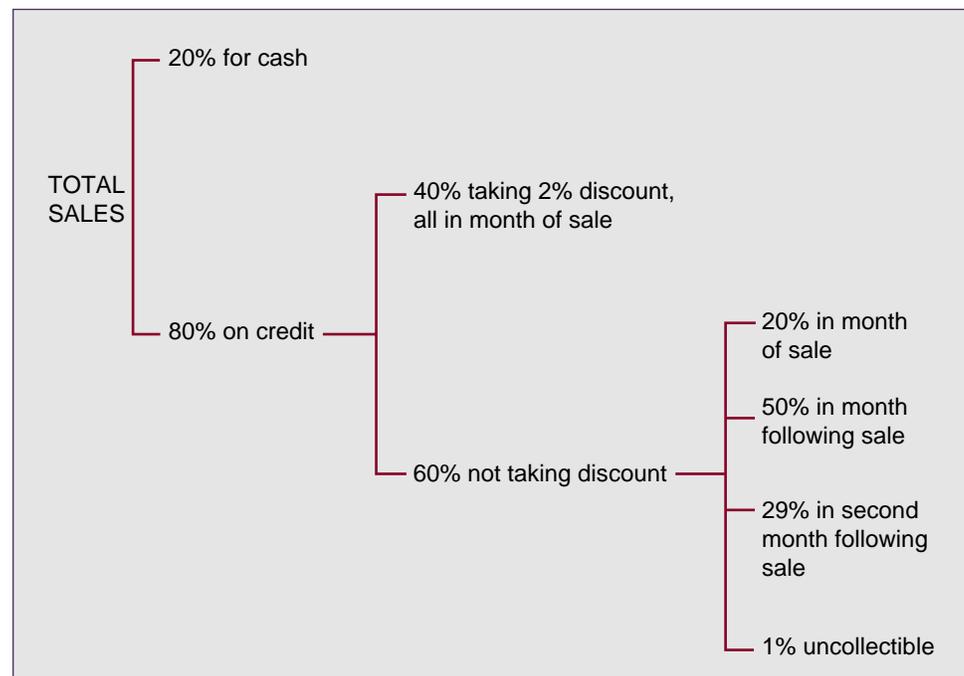


EXHIBIT 13-14

Cash Collections for the Three Months and Quarter Ending March 31, 2001

	January	February	March	Total	Disc.	Uncoll.
FROM:						
<i>November 2000 sales:</i>						
\$44,000(0.8)(0.6)(0.29)	\$ 6,125			\$ 6,125		
\$44,000(0.8)(0.6)(0.01)						\$211
<i>December 2000 sales:</i>						
\$46,000(0.8)(0.6)(0.5)	11,040			11,040		
\$46,000(0.8)(0.6)(0.29)		\$ 6,403		6,403		
\$46,000(0.8)(0.6)(0.01)						221
<i>January 2001 sales:</i>						
\$40,000(0.2)	8,000			8,000		
\$40,000(0.8)(0.4)(0.98)	12,544N			12,544	\$256	
\$40,000(0.8)(0.6)(0.2)	3,840			3,840		
\$40,000(0.8)(0.6)(0.5)		9,600		9,600		
\$40,000(0.8)(0.6)(0.29)			\$ 5,568	5,568		
\$40,000(0.8)(0.6)(0.01)						192
<i>February 2001 sales:</i>						
\$35,000(0.2)		7,000		7,000		
\$35,000(0.8)(0.4)(0.98)		10,976N		10,976	224	
\$35,000(0.8)(0.6)(0.2)		3,360		3,360		
\$35,000(0.8)(0.6)(0.5)			8,400	8,400		
<i>March 2001 sales:</i>						
\$37,500(0.2)			7,500	7,500		
\$37,500(0.8)(0.4)(0.98)			11,760N	11,760	240	
\$37,500(0.8)(0.6)(0.2)			3,600	3,600		
Totals	<u>\$41,549</u>	<u>\$37,339</u>	<u>\$36,828</u>	<u>\$115,716</u>	<u>\$720</u>	<u>\$624</u>

"N" stands for "Net of discount." To determine the gross amount, divide the net amount by 0.98 (i.e., 100% - 2%).

January 2001 sales of \$40,000 are used to illustrate the collection calculations in Exhibit 13-14. The first line (for January) represents cash sales of 20 percent of total sales, or \$8,000. The next two lines represent the 80 percent of the customers who buy on credit. The first of these lines represents the 40 percent of credit customers who take the discount, computed as follows:

Sales to credit customers (80% of \$40,000)	<u>\$32,000</u>
Sales to customers allowed discount (40% × \$32,000)	\$12,800
– Discount taken by customers (0.02 × \$12,800)	<u>(256)</u>
= Net collections from customers allowed discount	<u>\$12,544</u>

The second of these two lines relates to the remaining 20 percent of credit customers who paid in the month of sale but were not allowed the discount. The remaining amounts in Exhibit 13-14 are computed similarly.

Once the cash collections schedule is prepared, balances for Accounts Receivable, Allowance for Uncollectibles, and Sales Discounts can be projected. (These T-accounts for Better Brackets follow.) These amounts will be used to prepare pro forma quarter-end 2001 financial statements. All sales are initially recorded as Accounts Receivable. Immediate cash collections are then deducted from the Accounts Receivable balance.

Note that the estimated uncollectible accounts from November 2000 through March 2001 have not been written off as of the end of the first quarter of 2001.

Companies continue to make collection efforts for a substantial period before accounts are acknowledged as truly worthless. Thus, these receivables may remain on the books six months or more from the sale date. When accounts are written off, Accounts Receivable and the Allowance for Uncollectibles will both decrease; however, there will be no income statement impact relative to the write-off.

Accounts Receivable

12/31/00 Balance (Exhibit 13-5)	24,000	Collections in January from beginning A/R (\$6,125 + \$11,040)	17,165
January 2001 sales (Exhibit 13-6)	40,000	Cash sales in January (Exhibit 13-14)	8,000
		Credit collections subject to discount (cash received, \$12,544)	12,800
		Credit collections not subject to discount	3,840
February 2001 sales (Exhibit 13-6)	35,000	Collections in February from beginning A/R	6,403
		Cash sales in February (Exhibit 13-14)	7,000
		Collections in February from January sales	9,600
		Credit collections subject to discount (cash received, \$10,976)	11,200
		Credit collections not subject to discount	3,360
March 2001 sales (Exhibit 13-6)	37,500	Cash sales in March (Exhibit 13-14)	7,500
		Collections in March from January sales	5,568
		Collections in March from February sales	8,400
		Credit collections subject to discount (cash received, \$11,760)	12,000
		Credit collections not subject to discount	3,600
3/31/01 Balance	20,064		

Allowance for Uncollectible Accounts

	12/31/00 Balance (Exhibit 13-5)	432
	January estimate (Exhibit 13-14)	192
	February estimate [\$35,000(80%)(60%)(1%)]	168
	March estimate [\$37,500(80%)(60%)(1%)]	180
	3/31/01 Balance	972

Sales Discounts

January discounts	256
February discounts	224
March discounts	240
3/31/01 Balance	720

CASH DISBURSEMENTS AND ACCOUNTS PAYABLE

Using the purchases information from Exhibit 13–8, management can prepare a cash disbursements schedule for Accounts Payable. Better Brackets makes all raw material purchases on account. The company pays for 40 percent of each month's purchases in the month of purchase. These purchases are from suppliers who allow Better Brackets a 2 percent discount for prompt payment. The remaining suppliers allow no discounts, but require payments be made within 30 days from the purchase date. Thus, the remaining 60 percent of each month's purchases are paid in the month following the month of purchase.

Exhibit 13–15 presents the first quarter 2001 cash disbursements information for purchases. The December 31, 2000, Accounts Payable balance of \$4,330 (Exhibit 13–5) represents 60 percent of December purchases of \$7,217. All amounts have been rounded to whole dollars.

Accounts payable activity is summarized in the following T-account. The March 31 balance represents 60 percent of March purchases that will be paid during April.

Accounts Payable		
		12/31/00 Balance
		(Exhibit 13–5) 4,330
January payments for December purchases		January purchases
(Exhibit 13–15) 4,330		(Exhibit 13–8) 6,286
January payments for January purchases subject to discount		February purchases
(cash paid, \$2,464) 2,514		(Exhibit 13–8) 5,654
February payments for January purchases		March purchases
(Exhibit 13–15) 3,772		(Exhibit 13–8) 5,876
February payments for February purchases subject to discount		
(cash paid, \$2,216) 2,261		
March payments for February purchases		
(Exhibit 13–15) 3,393		
March payments for March purchases subject to discount		
(cash paid, \$2,303) 2,350		
		3/31/01 Balance 3,526

Purchases Discounts	
	January discounts 50
	February discounts 45
	March discounts 47
	3/31/01 Balance 142

Given the cash receipts and disbursements information for Better Brackets, the cash budget model is used to formulate the cash budget shown in Exhibit 13–16. The company has established \$6,000 as its desired minimum cash balance. There are two primary reasons for having a desired minimum cash balance: one is internal; the other is external. The first reason reflects the uncertainty associated with the budgeting process. Because managers cannot budget with absolute precision, a “cushion” is maintained to protect the company from potential errors in forecasting

EXHIBIT 13-15

Cash Disbursements for
Accounts Payable for the Three
Months and Quarter Ending
March 31, 2001

	January	February	March	Total	Discount
PAYMENT FOR PURCHASES OF:					
December 2000	\$4,330			\$ 4,330	
January 2001 (from Exhibit 13-8)					
\$6,286(0.40)(0.98)	2,464N			2,464	\$ 50
\$6,286(0.60)		\$3,772		3,772	
February 2001 (from Exhibit 13-8)					
\$5,654(0.40)(0.98)		2,216N		2,216	45
\$5,654(0.60)			\$3,393	3,393	
March 2001 (from Exhibit 13-8)					
\$5,876(0.40)(0.98)			2,303N	2,303	47
Total disbursements for A/P	<u>\$6,794</u>	<u>\$5,988</u>	<u>\$5,696</u>	<u>\$18,478</u>	<u>\$142</u>

"N" stands for "Net of discount." The total amount of gross purchases being paid for in the month of purchase is the sum of the net of discount payment plus the amount shown on the same line in the Discount column.

EXHIBIT 13-16

Cash Budget for the Three
Months and Quarter Ending
March 31, 2001

	January	February	March	Total
Beginning cash balance	\$ 6,000	\$ 6,829	\$ 6,461	\$ 6,000
Cash collections (Exhibit 13-14)	<u>41,549</u>	<u>37,339</u>	<u>36,828</u>	<u>115,716</u>
Cash available exclusive of financing	<u>\$ 47,549</u>	<u>\$ 44,168</u>	<u>\$ 43,289</u>	<u>\$121,716</u>
DISBURSEMENTS:				
Accounts payable (for purchases, Ex. 13-15)	\$ 6,794	\$ 5,988	\$ 5,696	\$ 18,478
Direct labor (Ex. 13-9)	4,770	4,215	4,467	13,452
Overhead (Ex. 13-10)*	3,016	2,829	2,913	8,758
S&A expenses (Ex. 13-11)*	5,140	4,885	5,013	15,038
Total disbursements	<u>\$ 19,720</u>	<u>\$ 17,917</u>	<u>\$ 18,089</u>	<u>\$ 55,726</u>
Cash excess (inadequacy)	<u>\$ 27,829</u>	<u>\$ 26,251</u>	<u>\$ 25,200</u>	<u>\$ 65,990</u>
Minimum balance desired	(6,000)	(6,000)	(6,000)	(6,000)
Cash available (needed)	<u>\$ 21,829</u>	<u>\$ 20,251</u>	<u>\$ 19,200</u>	<u>\$ 59,990</u>
FINANCING:				
Borrowings (repayments)	\$ 0	\$ 0	\$ 0	\$ 0
Issue (reacquire) stock	0	0	0	0
Sell (acquire) investments	(21,000)	3,000	6,000	(12,000)***
Sell (acquire) plant assets	0	(23,000)	0	(23,000)
Receive (pay) interest**		210	180	390
Receive (pay) dividends			(25,000)	(25,000)
Total impact of planned financing	<u>\$(21,000)</u>	<u>\$(19,790)</u>	<u>\$(18,820)</u>	<u>\$(59,610)</u>
Ending cash balance	<u>\$ 6,829</u>	<u>\$ 6,461</u>	<u>\$ 6,380</u>	<u>\$ 6,380</u>

*These amounts are the net of depreciation figures.
**Interest is calculated assuming a 12 percent annual rate (1 percent per month) and investments and disposals of investments are made at the end of the month in \$1,000 increments.
***This is the net result of investments and disposals of investments.

collection and payment schedules. The second reason is the company's banks may require a minimum cash balance in relation to an open line of credit.

For simplicity, it is assumed that any investments or sales of investments are made in end-of-month \$1,000 increments. Interest on company investments at 12 percent per annum or 1 percent per month is added to the company's bank account at month's end.

Exhibit 13–16 indicates that Better Brackets has a \$27,829 excess of cash available over disbursements in January. Such an excess, however, does not consider the need for the \$6,000 minimum balance. Thus, the company has \$21,829 available. It used \$21,000 of that amount to purchase temporary investments at the end of January.

In February, Better Brackets again will have enough cash to meet its desired minimum cash balance and, by liquidating \$3,000 of its investments, pay for the machinery. In March, there is enough excess cash available, coupled with the liquidation of another \$6,000 of investments, to pay the \$25,000 dividend that is due in March.

Cash flow provides the short-run source of power in a business to negotiate and act. In addition to preparing and executing a sound cash budget, there are other measures a business can take. Exhibit 13–17 offers some suggestions in this regard for small businesses, although the same prescriptions are applicable to businesses of all sizes.

EXHIBIT 13-17

10 Ways to Improve Small Business Cash Flow

Cash flow is the lifeblood of any small business. A healthy stream is essential if a business is to succeed. In general, the key is to accelerate the flow of money coming in and delay what goes out. Having written credit and collection policies can also help. Here are 10 tips a business can use to improve cash flow.

1. **Establish sound credit practices.** Before dealing with a new customer, always get at least three trade references and a bank reference. Credit reports, available from Dun and Bradstreet and others, report on a company's general financial health as well as how quickly—or slowly—it pays its bills. Never give credit until you are comfortable with a customer's ability to pay.
2. **Expedite fulfillment and shipping.** Fill orders accurately and efficiently, and then use the quickest means available to deliver products and services to customers. Unnecessary delays can add days or weeks to customer payments.
3. **Bill promptly and accurately.** The faster you mail an invoice, the faster you will be paid. Where possible, send an invoice with the order. If deliveries do not automatically trigger an invoice, establish a set billing schedule, preferably weekly. Check invoices for accuracy before mailing them. All invoices should include a payment due date. An invoice without payment terms may fall to the bottom of a customer's pile of bills.
4. **Offer discounts for prompt payment.** Given an incentive, some customers will pay sooner rather than later. Trade discounts typically give 1% to 2% off the total amount due if customers pay in 10 days.
5. **Aggressively follow up on past due accounts.** As soon as a bill becomes overdue, call the customer and ask when you can expect payment. Keep a record of the conversation and the customer's response. Set a follow-up date in the event the promised payment is not received. Ask delinquent customers with genuine financial problems to try to pay at least a small amount every week. When necessary, don't hesitate to seek professional help from an attorney or collection agency.
6. **Deposit payments promptly.** Don't let checks sit in a drawer waiting to be deposited. The sooner you make a deposit, the sooner you can put the money to work for your business. If you are really serious about speeding up your cash flow, a post office box or bank lockbox can accelerate receipt of checks.
7. **Seek better payment terms from suppliers and banks.** Better payment terms from suppliers are the simplest way to slow down a company's cash outflow. While most suppliers provide terms of 30 days, 60 or 90 days are sometimes available, though it might mean changing suppliers. Better credit terms translate into borrowing money interest-free. Some banks also may be willing to restructure business loans to make them easier to repay.
8. **Keep a tight control on inventory.** Less cash tied up in inventory generally means better cash flow. While some suppliers offer deeper discounts on volume purchases, if inventory sits on the shelf too long, it ties up money that could be put to better use elsewhere.
9. **Review and reduce expenses.** Take a critical look at all expenses. If you're not sure an expense is necessary, hold back until you are confident it will have a favorable impact on the bottom line. Consider ways to decrease operating costs, such as switching from a weekly to a biweekly payroll to reduce payroll processing costs. Be careful not to cut costs that could hurt profits. For instance, rather than cutting the marketing budget, redirect the money to areas where it will have a more positive impact.
10. **Pay bills on time, but never before they are due.** The basic rule is to take as long as you are allowed to pay bills—without incurring late fees or interest charges. Make an exception to this rule only when you are offered a trade discount for early payment.

SOURCE: "10 Ways to Improve Small Business Cash Flow," New York State Society of CPAs, New York, <http://www.nysscpa.org>.

Budgeted Financial Statements

The final step in the budgeting process is the development of budgeted (pro forma) financial statements for the period. These financial statements reflect the results that will be achieved if the estimates and assumptions used for all previous budgets actually occur. Such statements allow management to determine whether the predicted results are acceptable. If they are not acceptable, management has the opportunity to change and adjust items before the period for which the budget is being prepared begins.

When expected net income is not considered reasonable, management may investigate the possibility of raising selling prices or finding ways to decrease costs. Any specific changes considered by management might have related effects that must be included in the revised projections. For example, raising selling prices may decrease volume. Alternatively, reductions in costs from using lower-grade material could increase spoilage during production or cause a decline in demand. With the availability of the computer, changes in budget assumptions and their resultant effects can be simulated quickly and easily.

COST OF GOODS MANUFACTURED SCHEDULE

Management must prepare a schedule of cost of goods manufactured before an income statement can be prepared. This schedule is necessary to determine cost of goods sold. Using information from previous budgets, the Better Brackets' budgeted cost of goods manufactured schedule is shown in Exhibit 13-18. Because there were no beginning or ending work in process inventories, the cost of goods manufactured equals the manufacturing costs of the period. Had work in process inventory existed, the computations would be more complex and would have involved the use of equivalent units of production.

INCOME STATEMENT

The projected income statement for Better Brackets for the first quarter of 2001 is presented in Exhibit 13-19. This statement uses much of the information previously developed in determining the revenues and expenses for the period.

EXHIBIT 13-18

*Pro Forma Cost of Goods
Manufactured Schedule for
Quarter Ending March 31, 2001*

Beginning work in process inventory		\$ 0
Cost of raw material used:		
Beginning balance (Exhibit 13-5)	\$ 636	
Net purchases (from Accounts Payable and Purchases Discounts, p. 569)	17,674	
Total raw material available	<u>\$18,310</u>	
Ending balance of RM (Note A)	<u>(516)</u>	
Cost of raw material used	\$17,794	
Direct labor (Exhibit 13-9)	13,452	
Factory overhead (Exhibit 13-10)	<u>10,558</u>	
Total costs to be accounted for		41,804
Ending work in process inventory		<u>(0)</u>
Cost of goods manufactured		<u>\$41,804</u>
Note A:	<u>METAL</u>	
Ending balance (Exhibit 13-8) required for FG	6,450	
Ounces per unit	× 4	
Total ounces of RM required	<u>25,800</u>	
Price per ounce	× \$0.02	
Ending balance of RM	<u>\$ 516</u>	

EXHIBIT 13-19

*Pro Forma Income Statement for
Quarter Ending March 31, 2001*

Sales (Exhibit 13-6)		\$112,500	
Less: Sales discounts (p. 568)			(720)
Net sales			<u>\$111,780</u>
Cost of goods sold:			
Finished goods—12/31/00 (Exhibit 13-5)	\$	748	
Cost of goods manufactured (Exhibit 13-18)			<u>41,804</u>
Cost of goods available for sale	\$	<u>42,552</u>	
Finished goods—3/31/01 (Note A)			<u>(598)</u>
Gross margin			<u>\$ 69,826</u>
Expenses:			
Uncollectible accounts expense (Note B)	\$	540	
S&A expenses (Exhibit 13-11)		<u>15,638</u>	<u>(16,178)</u>
Income from operations			<u>\$ 53,648</u>
Other revenue—interest earned (Exhibit 13-16)			390
Income before income taxes			<u>\$ 54,038</u>
Income taxes (assumed rate of 40%)			<u>(21,615)</u>
Net income			<u><u>\$ 32,423</u></u>

Note A:

Beginning finished goods units		4,000	
Production (Exhibit 13-7)		<u>224,200</u>	
Units available for sale		228,200	
Sales (Exhibit 13-6)		<u>(225,000)</u>	
Ending finished goods units		3,200	
Cost per unit:			
Material	\$0.080		
Conversion (assumed)	<u>0.107</u>	×	<u>\$0.187</u>
Cost of ending inventory			<u><u>\$ 598</u></u>

Note B:

Total sales	\$112,500	
× % credit sales	× 0.80	
= Credit sales	<u>\$ 90,000</u>	
× % not taking discount	× 0.60	
= Potential bad debts	<u>\$ 54,000</u>	
× % estimated uncollectible	× 0.01	
= Estimated bad debts	<u><u>\$ 540</u></u>	

BALANCE SHEET

On completion of the income statement, a March 31, 2001, balance sheet (Exhibit 13-20) can be prepared.

STATEMENT OF CASH FLOWS

The information found on the income statement, balance sheet, and cash budget is also used to prepare a Statement of Cash Flows (SCF). This statement can assist managers in judging the company's ability to handle fixed cash outflow commitments, adapt to adverse changes in business conditions, and undertake new commitments. Further, because the SCF identifies the relationship between net income and net cash flow from operations, it assists managers in judging the quality of the company's earnings.

Whereas the cash budget is essential to current cash management, the budgeted SCF gives managers a more global view of cash flows by rearranging them into three distinct major activities (operating, investing, and financing). Such a rearrangement permits management to judge whether the specific anticipated flows are consistent with the company's strategic plans.

In addition, the SCF would incorporate a schedule or narrative about significant noncash transactions if any have occurred, such as an exchange of stock for land, that are disregarded in the cash budget.

EXHIBIT 13-20

Pro Forma Balance Sheet,
March 31, 2001

ASSETS		
Current Assets		
Cash (Exhibit 13-16)		\$ 6,380
Accounts Receivable (p. 568)	\$ 20,064	
Less Allowance for Uncollectibles (p. 568)	(972)	19,092
Inventory		
Raw Material (Exhibit 13-18, Note A)	\$ 516	
Finished Goods (Exhibit 13-19, Note A)	598	1,114
Investments (Exhibit 13-16)		12,000
Total Current Assets		<u>\$ 38,586</u>
Plant Assets		
Property, Plant, and Equipment (Note A)	\$393,000	
Less Accumulated Depreciation (Note B)	(92,400)	300,600
Total Assets		<u><u>\$339,186</u></u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities		
Accounts Payable (p. 569)		\$ 3,526
Income Taxes Payable (Exhibit 13-19)		21,615
Total Current Liabilities		<u>\$ 25,141</u>
Stockholders' Equity		
Common Stock	\$180,000	
Retained Earnings (Note C)	134,045	314,045
Total Liabilities and Stockholders' Equity		<u><u>\$339,186</u></u>
Note A:		
Beginning balance		
(Exhibit 13-5)	\$370,000	
Purchased new computer	23,000	
Ending balance	<u>\$393,000</u>	
Note B:		
Beginning balance		
(Exhibit 13-5)	\$ 90,000	
Factory depreciation		
(Exhibit 13-10)	1,800	
S&A depreciation		
(Exhibit 13-11)	600	
Ending balance	<u>\$ 92,400</u>	
Note C:		
Beginning balance		
(Exhibit 13-5)	\$101,622	
Net income (Exhibit 13-19)	32,423	
Ending balance	<u>\$134,045</u>	

The operating section of the SCF prepared on either a direct or an indirect basis is acceptable for external reporting. The direct basis uses pure cash flow information (cash collections and cash disbursements) for operating activities. The operating section for a SCF prepared on an indirect basis begins with net income and makes reconciling adjustments to arrive at cash flow from operations. Exhibit 13-21 provides a Statement of Cash Flows for Better Brackets using the information from the cash budget in Exhibit 13-16; the second, indirect presentation of the operating section uses the information from the income statement in Exhibit 13-19 and the balance sheets in Exhibits 13-5 and 13-20.

Better Brackets generates both a large cash flow from operations (\$60,380 from Exhibit 13-21) and a high net income per net sales dollar (29 percent). This strong showing by both measures suggests that Better Brackets has high-quality earnings.

EXHIBIT 13-21

Pro Forma Statement of Cash Flows for Quarter Ending March 31, 2001

Operating Activities:		
Cash collections from sales (Exhibit 13-16)	\$115,716	
Interest earned (Exhibit 13-16)	390	
Total	<u>\$116,106</u>	
Cash payments		
For inventory:		
Raw material (Exhibit 13-16)	\$18,478	
Direct labor (Exhibit 13-16)	13,452	
Overhead (Exhibit 13-16)	<u>8,758</u>	(40,688)
For nonfactory costs:		
Salaries and wages (Exhibit 13-11)	\$13,500	
Supplies (Exhibit 13-11)	1,125	
Other S&A expenses (Exhibit 13-11)	<u>413</u>	(15,038)
Net cash inflow from operating activities		\$60,380
Investing Activities:		
Purchase of plant asset (Exhibit 13-12)	\$ 23,000	
Short-term investment (Exhibit 13-16)	<u>12,000</u>	
Net cash outflow from investing activities		(35,000)
Financing Activities:		
Dividends (Exhibit 13-16)	\$ 25,000	
Net cash outflow from financing activities		<u>(25,000)</u>
Net increase in cash		<u>\$ 380</u>
Alternative (Indirect) Basis for Operating Activities:		
Net income		\$32,423
+ Depreciation (Exhibit 13-10 and Exhibit 13-11)	\$ 2,400	
+ Decrease in Accounts Receivable (\$23,568 - \$19,092)	4,476	
+ Decrease in total inventory (\$1,384 - \$1,114)	270	
+ Increase in Taxes Payable (\$21,615 - \$0)	21,615	
- Decrease in Accounts Payable (\$4,330 - \$3,526)	<u>(804)</u>	27,957
= Net cash inflow from operating activities		<u>\$60,380</u>

Both cash flow from operations and net income are necessary for continued business success. Better Brackets' management is doing an effective job in pricing the company's product and an efficient job in controlling costs.

CONCLUDING COMMENTS

A well-prepared budget provides the following benefits:

1. a guide to help managers align activities and resource allocations with organizational goals;
2. a vehicle to promote employee participation, cooperation, and departmental coordination;
3. a tool to enhance conduct of the managerial functions of planning, controlling, problem solving, and performance evaluating;
4. a basis on which to sharpen management's responsiveness to changes in both internal and external factors; and
5. a model that provides a rigorous view of future performance of a business in time to consider alternative measures.

Because of its fundamental nature in the budgeting process, demand must be predicted as accurately and with as many details as possible. Sales forecasts should indicate type and quantity of products to be sold, geographic locations of the sales, types of buyers, and when the sales are to be made. Such detail is necessary because

6

What benefits are provided by a budget?

different products require different production and distribution facilities, different customers have different credit terms and payment schedules, and different seasons or months may necessitate different shipping schedules or methods.

Estimated sales demand has a pervasive impact on the master budget. To arrive at a valid prediction, managers use as much information as is available and may combine several estimation approaches. Combining prediction methods provides managers with a means to confirm estimates and reduce uncertainty. Some ways of estimating future demand are (1) canvassing sales personnel for a subjective consensus, (2) making simple extrapolations of past trends, (3) using market research, and (4) employing statistical and other mathematical models.

Care should be taken to use realistic, rather than optimistic or pessimistic, forecasts of revenues and costs. Computer models can be developed that allow repetitive computer simulations to be run after changes are made to one or more factors. These simulations permit managers to review results that would be obtained under various circumstances.

The master budget is normally prepared for a year and detailed by quarters and months within those quarters. Some companies use a process of **continuous budgeting**. For companies using continuous budgeting, this generally means that an ongoing 12-month budget is presented by successively adding a new budget month (12 months into the future) as each current month expires. Such a process allows management to work, at any time, within the present 1-month component of a full 12-month annual budget. Continuous budgets make the planning process less sporadic. Rather than having managers “go into the budgeting period” at a specific time, they are continuously involved in planning and budgeting.

If actual results differ from plans, managers should find the causes of the differences and then consider budget revisions. Arrangements usually cannot be made rapidly enough to revise the current month’s budget. However, under certain circumstances and if they so desire, managers may be able to revise future months’ budgets. If actual performance is substantially worse than what was expected, the budget may or may not be adjusted, depending on the variance causes.

If the causes are beyond the organization’s control and are cost related, management may decide to revise budget cost estimates upward to be more realistic. If the causes are internal (such as the sales staff not selling the product), management may leave the budget in its original form so that the lack of operational control is visible in the comparisons.

If actual performance is substantially better than expected, alterations may also be made to the budget, although management may decide not to alter the budget so that the positive performance is highlighted. Regardless of whether the budget is revised, managers should commend those individuals responsible for the positive performance and communicate the effects of such performance to other related departments. For example, if the sales force has sold significantly higher quantities of product than expected in the original budget, production and purchasing will need to be notified to increase the number of units manufactured and raw material purchased.

When budgets are used for performance evaluations, management often encounters the problem of **budget slack**. Budget slack is the intentional underestimation of revenues and/or overestimation of expenses. Slack can be incorporated into the budget during the development process in a participatory budget. A **participatory budget** is developed through joint decision making by top management and operating personnel. However, slack is not often found in imposed budgets. **Imposed budgets** are prepared by top management with little or no input from operating personnel. After the budget is developed, operating personnel are informed of the budget goals and constraints.⁵

continuous budgeting

budget slack

participatory budget

imposed budget

⁵ The budgeting process can be represented by a continuum with imposed budgets on one end and participatory budgets on the other. It is probably rare that a budget is either purely imposed or purely participatory. The budget process in a particular company is usually defined by the degree to which the process is either imposed or participatory.

Having budget slack allows subordinate managers to achieve their objectives with less effort than would be necessary without the slack. Slack also creates problems because of the significant interaction of the budget factors. For example, if sales volumes are understated or overstated, problems can arise in the production, purchasing, and personnel areas.

Top management can try to reduce slack by tying actual performance to the budget through a bonus system. Operating managers are rewarded with large bonuses for budgeting relatively high performance levels and achieving those levels. If performance is set at a low or minimal level, achievement of that performance is either not rewarded or only minimally rewarded. Top management must be aware that budget slack has a tremendous negative impact on organizational effectiveness and efficiency.

Managers may want to consider expanding their budgeting process to recognize the concepts of activities and cost drivers in a manner consistent with activity-based management. An activity budget can be created by mapping the line items in the conventional budget to a list of activities. This type of budget can help management become more aware of the budgeted costs of proposed non-value-added activities and make managers question why such costs are being planned. Based on this enhanced awareness, managers can plan to reduce or eliminate some of these non-value-added activities.

REVISITING

The HON Company

<http://www.honcompany.com>

In August 1999, HON INDUSTRIES Inc., which includes The HON Company and its companion companies, was selected by *Industry Week Magazine* as one of the world's 100 Best-Managed Companies.

Candidates for the *Industry Week Magazine* honor were culled from the magazine's 1000, a list of the world's largest publicly held manufacturing companies based on revenues. Each company was evaluated on measures that included financial performance, philanthropy, and safety.

"Industry Week's 100 Best-Managed Companies demonstrate superior, consistent financial performance," said John Brandt, editor-in-chief of IW. "We also honor these companies for investing heavily in such areas as research and development, new markets, employees, and society."

In The HON Company's aggressive but realistic budget philosophy, senior management expects each quarter's performance to exceed the previous one. New products and services drive company growth, and research to define and meet emerging customer demand is ongoing. Recognizing that service is critical, too, HON offers two- and three-week delivery for orders of any product size and combination. Competitors typically require four- to five-week lead-times for single product orders.

Budget targets must be supported by action plans that coordinate operational improvements throughout the

organization. For example, when the strategic plan calls for a specified increase in productivity, all departments are expected to work together to bring about needed change. In manufacturing, production processes repeatedly are challenged and bottlenecks removed. Sales and marketing are expected to generate increased sales volume to make full use of capacity gained through manufacturing improvements. Distribution then must develop plans to handle increased deliveries while reducing the cost of delivery per sales dollar.

Does quarterly budget preparation consume a disproportionate amount of company time? Experience has shown that managers improve their budgeting skills over time and need no more time to do quarterly budgets than would be needed for one annual budget. Information technology advances also have shortened budget preparation time. A highly integrated computer budgeting system supplies each department manager with four-quarter histories and four-quarter projections of budget line items. Driver codes for revenue and cost targets are set by default, and, thus, managers need only change budgets for line items on an exception basis. The budget system speeds up information flows to higher levels, too, because proposed targets are rolled up to the next level immediately where they can be reviewed and revised quickly by senior management.

Most importantly, The HON Company's process of continuous quarterly budgeting unites senior-level strategy with a committed corporate culture. Corporate management best understands where energies need to be focused to

enhance the firm's competitive edge, but attaining strategic goals depends on a workforce that can translate corporate strategies into a well coordinated action plan.

SOURCES: Ralph Drtina, Steve Hoeger, and John Schaub, "Continuous Budgeting at the HON Company," *Management Accounting* (January 1996), p. 20. The HON Company Web site, <http://www.honcompany.com> (March 3, 2000).

CHAPTER SUMMARY

Planning is the process of setting goals and objectives and translating them into activities and resources required for accomplishment within a specified time horizon. Budgeting is the quantifying of a company's financial plans and activities. Budgets facilitate communication, coordination, and teamwork.

A master budget is the comprehensive set of projections for a specific budget period, culminating in a set of pro forma financial statements. It is composed of operating and financial budgets and is usually detailed by quarters and months. Some companies prepare continuous budgets by successively adding a new budgetary month, 12 months into the future, as each current month expires.

Sales demand is the proper starting point for the master budget. Once sales demand is determined, the cost accountant forecasts revenues, production quantities and costs, and cash flows for the firm's activities for the upcoming period. These expectations reflect the firm's inflows and outflows of resources.

When preparing a budget, managers must remember that organizational departments interact with each other, and the budget for one department may form the basis of or have an effect on the budgets in other departments. Actual operating results can be compared to budget figures to measure how effectively and efficiently organizational goals were met. Significant unfavorable variances dictate that managers should either attempt to alter the behavior of personnel or alter the budget if it appears to be unrealistic; significant favorable variances most likely will not cause the budget to be adjusted, but rather will cause affected departments to be advised of on possible consequences (such as increased production needs indicated by a favorable difference in sales demand). Regardless of whether variances are unfavorable or favorable, feedback to operating personnel is an important part of the budgeting process.

APPENDIX

7

How does a budget manual facilitate the budgeting process?

budget manual

The Budget Manual

To be useful, a budget requires a substantial amount of time and effort from the persons who prepare it. This process can be improved by the availability of an organizational **budget manual**, which is a detailed set of information and guidelines about the budgetary process. The manual should include

1. statements of the budgetary purpose and its desired results;
2. a listing of specific budgetary activities to be performed;
3. a calendar of scheduled budgetary activities;
4. sample budgetary forms; and
5. original, revised, and approved budgets.

The statements of budgetary purpose and desired results communicate the reasons behind the process. These statements should flow from general to specific

details. An example of a general statement of budgetary purpose is “The Cash Budget provides a basis for planning, reviewing, and controlling cash flows from and for various activities; this budget is essential to the preparation of a pro forma Statement of Cash Flows.” Specific statements could include references to minimum desired cash balances and periods of intense cash needs.

Budgetary activities should be listed by position rather than person because the responsibility for actions should be assigned to the individual holding the designated position at the time the budget is being prepared. The manual’s activities section should indicate who has the final authority for revising and approving the budget. Budget approval may be delegated to a budget committee or reserved by one or several members of top management.

The budget calendar helps coordinate the budgetary process; it should indicate a timetable for all budget activities and be keyed directly to the activities list. The timetable for the budget process is unique to each organization. The larger the organization, the more time that will be necessary to gather and coordinate information, identify weak points in the process or the budget itself, and take corrective action. The calendar should also indicate control points for the upcoming periods at which budget-to-actual comparisons are to be made and feedback provided to managers responsible for operations.

Sample forms are extremely useful because they provide for consistent presentations of budget information from all individuals, making summarization of information easier and quicker. The sample forms should be easy to understand and may include standardized worksheets that allow managers to update historical information to arrive at budgetary figures. This section of the budget manual may also provide standard cost tables for items on which the organization has specific guidelines or policies. For example, in estimating employee fringe benefit costs, the company rule of thumb may be 25 percent of base salary. Or, if company policy states that each salesperson’s per diem meal allowance is \$30, meal expenses would be budgeted as estimated travel days multiplied by \$30.

The final section of the budget manual contains the budgets generated during the budgeting process. Numerous budgets probably will be submitted and revised prior to actual budget implementation. Understanding this revision process and why changes were made is helpful for future planning. The final approved master budget is included in the budget manual as a control document.⁶

KEY TERMS

budget (p. 552)	financial budget (p. 556)
budget manual (p. 578)	imposed budget (p. 576)
budget slack (p. 576)	operating budget (p. 556)
budgeting (p. 552)	participatory budget (p. 576)
continuous budgeting (p. 576)	

SOLUTION STRATEGIES

Sales Budget

$$\begin{aligned} & \text{Units of sales} \\ & \times \text{Selling price per unit} \\ & = \text{Dollars of sales} \end{aligned}$$

⁶ In the event of changes in economic conditions or strategic plans, the “final” budget may be revised during the budget period.

Production Budget

Units of sales
 + Units desired in ending inventory
 – Units in beginning inventory
 = Units to be produced

Purchases Budget

Units to be produced
 + Units desired in ending inventory
 – Units in beginning inventory
 = Units to be purchased

Direct Labor Budget

Units of production*
 × Standard time allowed per unit
 = Standard labor time allowed
 × Per hour direct labor cost
 = Total direct labor cost

*Converted to direct material component requirements, if necessary

Overhead Budget

Predicted activity base
 × Variable overhead rate per unit of activity
 = Total variable OH cost
 + Fixed OH cost
 = Total OH cost

Selling and Administrative Budget

Predicted sales dollars (or other variable measure)
 × Variable S&A rate per dollar (or other variable measure)
 = Total variable S&A cost
 + Fixed S&A cost
 = Total S&A cost

Schedule of Cash Collections for Sales

Dollars of credit sales for month
 × Percent collection for month of sale
 = Credit to A/R for month's sales
 – Allowed and taken sales discounts
 = Receipts for current month's credit sales
 + Receipts from cash sales
 + Current month's cash receipts for prior months' credit sales
 = Cash receipts for current month

Schedule of Cash Payments for Purchases

Units to be purchased
 × Cost per unit
 = Total cost of purchases
 × Percent payment for current purchases
 = Debit to A/P for month's purchases
 – Purchase discounts taken
 = Cash payments for current month's purchases
 + Cash purchases
 + Current month's payments for prior months' purchases
 = Cash payments for A/P for current month

Cash Budget

- Beginning cash balance
- + Cash receipts (collections)
- = Cash available for disbursements
- Cash needed for disbursements:
 - Cash payments for A/P for month
 - Cost of compensation
 - Total cost of overhead minus depreciation
 - Total S&A cost minus depreciation
- = Cash excess or deficiency
- Minimum desired cash balance
- = Cash needed or available for investment or financing
- + or – various financing measures
- = Ending cash balance

DEMONSTRATION PROBLEM

Bass Lighting Fixtures' July 31, 2001, balance sheet includes the following:

Cash	\$30,000 debit
Accounts Receivable	92,000 debit
Allowance for Uncollectible Accounts	2,044 credit
Merchandise Inventory	12,266 debit

The firm's management has designated \$30,000 as the firm's monthly minimum cash balance. Other information about Bass follows:

- Revenues of \$200,000 and \$240,000 are expected for August and September, respectively. All goods are sold on account.
- The collection pattern for Accounts Receivable is 55 percent in the month of sale, 44 percent in the month following the sale, and 1 percent uncollectible.
- Cost of goods sold approximates 60 percent of sales revenues.
- Management wants to end each month with 10 percent of that month's cost of sales in Merchandise Inventory.
- All Accounts Payable for inventory are paid in the month of purchase.
- Other monthly expenses are \$26,000, which includes \$4,000 of depreciation, but does not include uncollectible accounts expense.

Required:

- a. Forecast the August cash collections.
- b. Forecast the August and September cost of purchases.
- c. Prepare the cash budget for August including the effects of financing (borrowing or investing).

Solution to Demonstration Problem

a.

<u>August Collections</u>	
From July (\$92,000 – \$2,044)	\$ 89,956
From August (\$200,000 × 0.55)	<u>110,000</u>
Total	<u>\$199,956</u>

b.	August	September
Sales	<u>\$200,000</u>	<u>\$240,000</u>
Cost of goods sold (60%)	\$120,000	\$144,000
Add desired ending balance	12,000	14,400
Total needed	<u>\$132,000</u>	<u>\$158,400</u>
Less beginning balance	<u>(12,266)</u>	<u>(12,000)</u>
Cost of purchases	<u>\$119,734</u>	<u>\$146,400</u>

c. August Cash Budget

Beginning cash balance	\$ 30,000
August collections	<u>199,956</u>
Total cash available for disbursements	\$229,956
Disbursements:	
Purchase of merchandise	\$119,734
Other monthly expenses (\$26,000 – \$4,000)	<u>22,000</u>
Total disbursements	(141,734)
Cash excess or deficiency (a)	\$ 88,222
Less minimum cash balance desired	<u>(30,000)</u>
Cash available or needed	\$ 58,222
Financing:	
Acquire investment (b)	<u>(58,222)</u>
Ending cash balance (c); (c = a – b)	<u>\$ 30,000</u>

QUESTIONS

1. Why do businesses formally document their plans?
2. Outline the basic budgeting process.
3. Why is a budget considered a communication device?
4. Discuss what is meant by the following comment: Budgeting is a process of translation.
5. What major factors are taken into account in formulating an organization's strategic plan?
6. Managers formulate strategic plans that have time horizons of 5 to 10 years. Why do managers also formulate shorter term plans?
7. A major management function is planning. How does budgeting facilitate management planning?
8. How does the process of budgeting assist managers in conducting the management control function?
9. How are budgets used as both planning and control tools?
10. The master budget contains both operational and financial budgets. What is the difference between an operating budget and a financial budget? How do they relate to each other?
11. It is said that the master budget is "demand driven." What does this mean?
12. Explain how managers estimate collections from sales. Why is this information important in the budgeting process?
13. How are the production budgets and material purchasing budgets similar? How are they different? When is each used?
14. In estimating the overhead budget, why is it necessary to separate overhead into its variable and fixed components?
15. Why is the cash budget so important to an organization? If the cash budget identifies a period in which a cash shortage is expected, what actions can the organization take?
16. Why would a company wish to maintain a minimum cash balance?

17. How does the cash budget interface with the sales budget and budgeted accounts receivable?
18. Although managers are not clairvoyant, budgeting may assist in viewing the future. How might this be so?
19. Why is it useful to complete the budgeting process with a presentation of pro forma financial statements?
20. How are the budgeted Statement of Cash Flows and the cash budget similar? How are they different?
21. What benefits should arise from a process of continuous budgeting?
22. What is budget slack? What induces managers to build slack into their budgets?
23. Why is employee participation in developing the budget important to an organization?
24. (*Appendix*) What are the various sections of the budget manual and why is each section necessary?
25. (*Appendix*) What does the budget manual provide for everyone involved in the budgeting process? What does it reflect about top management?
26. Go to the Internet to find a company that either uses an annual budget or claims it does not. What reasons does it give either for using an annual budget or for using some alternative?

EXERCISES

27. (*Production schedule*) The projected sales, in units, for Einstein Inc. by month for the first four months were

January	8,000
February	12,000
March	16,000
April	19,200

Inventory of finished goods on December 31 was 6,400 units. The company desires to have an ending inventory each month equal to one-half of next month's estimated sales.

Determine the company's production requirements for each month of the first quarter.

28. (*Production budget*) The sales budget for Leno Company shows the following sales projections (in units) for the quarters of the calendar year of 2000:

January–March	270,000
April–June	340,000
July–September	245,000
October–December	<u>275,000</u>
Total	<u>1,130,000</u>

Sales for the first quarter of 2001 are expected to be 295,000 units. Finished Goods Inventory at the end of each production period is scheduled to equal 30 percent of the next quarter's budgeted sales in units. The company is expected to be in compliance with this policy as of December 31, 1999. Develop a quarterly production budget for 2000. Include a column to show total expected production for 2000.

29. (*Material purchases budget*) Brennan Ski Company has projected sales of 21,480 ski boots in September. Each pair of boots requires 2.5 linear feet of leather. The beginning inventory of leather and boots, respectively, are 2,500 yards and 1,154 pairs. Brennan Ski wants to have 9,000 yards of leather and 3,800

pair of boots at the end of September due to high sales projections for the winter months. The leather comes in standard widths. Therefore, to convert linear feet to yards, divide by 3. If Brennan has no beginning or ending Work in Process Inventory, how many yards of leather must the company purchase in September?

30. (*Material purchases budget*) San Diego Culvert Company has budgeted sales of 190,000 feet of its concrete culvert products for June 2000. Each foot of product requires 12 pounds of concrete (\$0.10 per pound) and 15 pounds of gravel (\$0.03 per pound). Actual beginning inventories and projected ending inventories are shown below.

	June 1	June 30
Finished Goods Inventory (in feet)	24,500	20,000
Concrete (in pounds)	82,000	68,600
Gravel (in pounds)	65,300	92,500

- How many pounds of concrete does San Diego Culvert plan to purchase in June? What will be the cost of those purchases?
- How many pounds of gravel does San Diego Culvert plan to purchase in June? What will be the cost of those purchases?



31. (*Production and related schedules*) The Jansen Company manufactures and sells two products: plastic boxes and plastic trays. Estimated needs for a unit of each are

	Boxes	Trays
Material A	2 pounds	1 pound
Material B	4 pounds	4 pounds
Direct labor	2 hours	2 hours

Overhead is applied on the basis of \$2 per direct labor hour.

The estimated sales by product for 2000 are:

	Boxes	Trays
Sales	42,000	24,000

The beginning inventories are expected to be as follows:

Material A	4,000 pounds
Material B	6,000 pounds
Boxes	1,000 units
Trays	500 units

The desired inventories are one month's production requirements, assuming constant sales throughout the year.

Prepare the following information:

- Production schedule
 - Purchases budget in units
 - Direct labor budget in hours
 - Overhead to be charged to production
32. (*Cash collections*) Bentham Company is developing its first-quarter monthly cash budget for 2000 and is having difficulty determining its expected cash collections. On investigation, the following actual and expected sales information was revealed:

November	December	January	February	March
\$41,500	\$38,000	\$29,500	\$34,000	\$39,500

Tracing of collections from prior-year monthly sales and discussions with the credit manager helped develop a profile of collection behavior patterns.

Of a given month's sales, 40 percent are typically collected in the month of sale. Because the company terms are 1 percent EOM (end of month), net 30, all collections within the month of sale are net of the 1 percent discount. Thirty percent of a given month's sales are collected in the month following the sale. The remaining 30 percent are collected in the second month following the month of the sale. Bad debts are negligible and should be ignored.

- a. Prepare a schedule of cash collections for Bentham Company by month for January, February, and March.
 - b. Calculate the Accounts Receivable balance at March 31.
33. (*Cash budget*) The Accounts Receivable balance at October 1, 2000, for Skyscraper Architects was \$606,900. Of that balance, \$450,000 represents remaining Accounts Receivable from September billings. The normal collection pattern for the firm is 20 percent of billings in the month of service, 55 percent in the month after service, and 22 percent in the second month following service. The remaining billings are uncollectible. October billings are expected to be \$700,000.
- a. What were August billings for Skyscraper Architects?
 - b. What amount of September billings is expected to be uncollectible?
 - c. What are projected cash collections in October 2000 for the firm?
34. (*Cash collections, accounts receivable*) Atlanta Waterworks is developing a forecast of June 2001 cash receipts from sales. Total sales for June 2001 are expected to be \$650,000. Of each month's sales, 75 percent is expected to be on credit. The Accounts Receivable balance at May 31 is \$171,000 of which \$135,000 represents the remainder of May credit sales. There are no receivables from months prior to April 2001. Atlanta Waterworks has an established collection pattern for credit sales of 60 percent in the month of sale, 25 percent in the month following the sale, and 15 percent in the second month following the sale. Atlanta Waterworks has no uncollectible accounts.
- a. What were total sales for April 2001?
 - b. What were credit sales for May 2001?
 - c. What are projected cash collections for June 2001?
 - d. What will be the balance of Accounts Receivable at June 30, 2001?
35. (*Cash balance*) Jackson Fabrics has prepared a forecast for May 2000. Some of the projected information follows:

Income after tax	\$260,000
Accrued Income Tax Expense	62,000
Increase in Accounts Receivable for month	41,000
Decrease in Accounts Payable for month	18,300
Depreciation Expense	71,200
Estimated Bad Debts Expense	13,100
Dividends declared	20,000

Using the above information, what is the company's projected increase in cash for May 2000?

36. (*Cash disbursements*) In trying to decide whether it was feasible for the company to acquire treasury stock during May 2000, Wyatt Jones, president of Dallas Leather, Inc., requested information on projected cash disbursements for that month. He received the following information from his new accountant:

Sales for May	\$2,000,000
Gross profit on sales	40%
Wages expense for May	\$412,500
Other cash expenses for May	\$235,250
Decrease in Accounts Payable during May	\$40,000
Decrease in Merchandise Inventory during May	\$33,750

Not understanding how the above information could help him compute cash disbursements, Mr. Jones asked the accountant to show how cash disbursements can be computed from these figures. If all significant data are given, what are projected cash disbursements for May?



37. (*Cash budget*) The accountant for Georgia Pizza prepared the following cash budget for the third quarter of 2000. When the owner was reviewing it, he was eating a deep-dish pizza loaded with extra cheese. Some of the topping inadvertently spilled onto the page and smeared the figures. Complete the missing numbers on the cash budget, assuming that the accountant has projected a minimum cash balance at the start of each month of \$2,500. All borrowings, repayments, and investments are made in even \$500 amounts.

	July	August	September	Total
Beginning cash balance	\$ 4,500	\$?	\$?	\$?
Cash receipts	8,200	10,100	?	?
Total cash available	\$?	\$13,000	\$19,500	\$39,400
Cash disbursements:				
Payments on account	\$?	\$ 3,900	\$ 5,700	\$?
Wages expense	5,000	?	6,100	17,200
Overhead costs	4,000	4,600	?	13,000
Total disbursements	\$10,300	\$?	\$16,200	\$?
Cash excess (deficiency)	\$?	\$?	\$?	\$?
Minimum cash balance	(2,500)	(2,500)	?	?
Cash available (needed)	\$?	\$ (4,100)	\$?	\$ (4,200)
Financing:				
Borrowings (repayments)	\$ 500	\$?	\$ (500)	\$?
Acquire (sell) investments	0	0	?	?
Receive (pay) interest	0	0	?	(50)
Ending cash balance	\$ 2,900	\$?	\$?	\$ 2,750

38. (*Various budgets*) The following are four independent situations.
- Tasty Frozen Foods is planning to produce two products: frozen dinners and frozen desserts. Sales of frozen dinners are expected to be 200,000 units at \$4 per unit; projected sales for frozen desserts are 400,000 units at \$3 per unit. Variable costs are 70 percent and 80 percent of sales for dinners and desserts, respectively. What are total fixed costs if Tasty expects net income to be \$425,000?
 - Herringbone Suits is projecting sales of \$20,000,000 and total fixed manufacturing costs of \$4,000,000 for 2000. The company estimates that variable manufacturing costs will be 40 percent of sales. Assuming no change in inventory, what is the company's projected Cost of Goods Sold?
 - The Sizzle Company has projected the following information for October 2001:

Sales	\$800,000
Gross profit (based on sales)	25%
Increase in Merchandise Inventory in October	\$60,000
Decrease in Trade Accounts Payable for October	\$24,000

What are expected cash disbursements for inventories for October 2001?

- d. Sam's Calculators' preliminary forecast for its product in 2000 is as follows:

Selling price per unit	\$20
Unit sales	200,000
Variable costs	\$1,200,000
Fixed costs	\$600,000

In preparing the above forecast, Sam included no advertising expenditures. Based on a market study conducted in December 1999, the firm estimated that it could increase the unit selling price by 15 percent and increase unit

sales volume by 10 percent if \$200,000 were spent on advertising. If Sam's Calculators adjusts its forecast by these amounts, what is the projected operating income for 2000? *(CPA adapted)*

39. *(Projected income statement)* Last year's income statement for Marano Company is presented below:

Sales (50,000 × \$10)		\$500,000
Cost of goods sold:		
Direct material	\$200,000	
Direct labor	100,000	
Overhead	<u>50,000</u>	<u>(350,000)</u>
Gross profit		\$150,000
Expenses		
Selling	\$ 50,000	
Administrative	<u>40,000</u>	<u>(90,000)</u>
Income before taxes		<u>\$ 60,000</u>

Sales are expected to decrease by 10 percent, and material and labor costs are expected to increase by 10 percent. Overhead is applied to production based on a percentage of direct labor costs. Ten thousand dollars of selling expenses are considered fixed. The balance varies with sales dollars. All administrative costs are fixed.

Management desires to earn 5 percent on sales this year and will adjust the unit selling price, if necessary. Develop a pro forma income statement for the year for Marano Company that incorporates the indicated changes.

40. *(Budgeted income, cash, accounts receivable)* In preparing its budget for July 2000, Expert Legal Services has the following accounts receivable information available:

Accounts Receivable at June 30	\$500,000
Estimated credit sales for July	600,000
Estimated collections in July for credit sales in July and prior months	440,000
Estimated write-offs in July for uncollectible credit sales	32,000
Estimated provision for uncollectible accounts for credit sales in July	24,000

- What is the projected balance of Accounts Receivable at July 31, 2000?
 - Which of the above amounts (if any) will affect the cash budget?
 - Which of the above amounts (if any) will affect the pro forma income statement for July? *(CPA adapted)*
41. *(Pro forma income statement)* Bennett Novelty Wholesale Store has prepared the following budget information for May 2001:

- Sales of \$300,000. All sales are on account and a provision for bad debts is made monthly at 3 percent of sales.
- Inventory was \$70,000 on April 30 and an increase of \$10,000 is planned for May.
- All inventory is marked to sell at cost plus 50 percent.
- Estimated cash disbursements for selling and administrative expenses for the month are \$40,000.
- Depreciation for May is projected at \$5,000.

Prepare a pro forma income statement for Bennett Novelty Wholesale Store for May 2001. *(CPA adapted)*

42. *(Pro forma income)* Joan Wilson, president of Fresh Fashions, is considering buying a new piece of equipment for her plant. This piece of equipment will increase her fixed overhead by \$300,000 per year, but reduce her variable expenses per unit of production by 35 percent. Budgeted sales of her only product, hand-painted scarves, for 2001 are 120,000 scarves at an average selling

price of \$25 each. Variable expenses are currently 75 percent of selling price and fixed costs total \$400,000 per year. Assuming that Joan acquires the new piece of equipment, answer the following questions.

- a. What is the projected variable cost per scarf?
- b. What are the projected fixed costs per year?
- c. What is the expected operating profit if actual sales are equal to budgeted sales?
- d. Should Joan acquire the equipment?

PROBLEMS

43. (*Production and purchases budgets*) Aurora Products has prepared the following unit sales forecast for 2000:

	January–June	July–December	Total
Sales	380,000	420,000	800,000

Estimated ending finished goods inventories are 30,000 units at December 31, 1999; 76,000 units at June 30; and 90,000 units at December 31, 2000.

In manufacturing each unit of this product, Aurora Products uses five pounds of Material A and three gallons of Material B. The company carries no Work in Process Inventory. Direct material ending inventories are projected as follows:

	December 31, 1999	June 30, 2000	December 31, 2000
Material A (in pounds)	200,000	250,000	300,000
Material B (in gallons)	140,000	160,000	200,000

Prepare a production and purchases budget for each semiannual period of 2000.

44. (*Production, purchases, cash disbursements*) West Indies Tea Company has budgeted sales of 300,000 cans of iced tea mix during June 2000 and 375,000 cans during July. Production of the mix requires 14 ounces of tea and 2 ounces of sugar. Beginning inventories of tea and sugar are as follows:

Iced tea mix	4,300 cans of finished product
Tea	2,750 pounds
Sugar	600 pounds

West Indies Tea Company generally carries an inventory of 3 percent of the following month's needs for finished goods. Raw materials are stocked in relation to finished goods ending inventory. Assuming the desired ending inventory stock is achieved, answer the following questions.

- a. How many cans of iced tea mix need to be produced in June?
 - b. How many pounds of tea need to be purchased in June? (There are 16 ounces in a pound.)
 - c. How many pounds of sugar need to be purchased in June?
 - d. If tea and sugar cost \$4.50 and \$0.30 per pound, respectively, what dollar amount of purchases is budgeted for June?
 - e. If West Indies Tea Company normally pays for 30 percent of its budgeted purchases during the month of purchase and takes a 2 percent discount, what are budgeted cash disbursements for June purchases during June?
45. (*Production, purchases, cash budgets*) Pop's Tops makes one style of men's hats. Sales and collections for the first three months of 2001 are expected to be

	January	February	March	Total
Sales quantity	3,200	2,600	3,700	9,500
Revenue	\$57,600	\$46,800	\$66,600	\$171,000
Collections	\$58,080	\$48,960	\$62,640	\$169,680

The December 31, 2000, balance sheet revealed the following selected balances: Cash, \$18,760; Raw Material Inventory, \$3,812.50; Finished Goods Inventory, \$10,500; and Accounts Payable, \$3,800. The Raw Material Inventory balance represents 457.50 yards of felt and 12,200 inches of ribbon. The Finished Goods Inventory consists of 800 hats.

During the first quarter of 2001, management expects that all work started within a month will be finished within that month, so no work in process is anticipated.

Management plans to have enough hats on hand at the end of each month to satisfy 25 percent of the subsequent month's sales. In this regard, the company predicts both production and sales of 3,600 hats in April.

Each hat requires $\frac{3}{4}$ of a yard of felt and 20 inches of ribbon. Felt costs \$7 per yard and ribbon costs \$0.05 per inch. Ending inventory policy for raw materials is 20 percent of the next month's production.

The company normally pays for 80 percent of a month's purchases of raw materials in the month of purchase (on which it takes a 2 percent cash discount). The remaining 20 percent is paid in full in the month following the month of purchase.

The cost of direct labor is budgeted at \$3 per hat produced and is paid in the month of production. Total out-of-pocket factory overhead can be predicted as \$5,200 per month plus \$2.25 per hat produced. Total nonfactory cash costs are equal to \$2,800 per month plus 10 percent of sales revenue. All factory and nonfactory cash expenses are paid in the month of incurrence. In addition, the company plans to make an estimated quarterly tax payment of \$5,000 and pay executive bonuses of \$15,000 in January 2001.

The management of Pop's Tops wishes to have a minimum of \$12,000 of cash at the end of each month. If the company has to borrow funds, it will do so in \$1,000 multiples at the beginning of a month at a 12 percent annual interest rate. Loans are to be repaid at the end of a month in multiples of \$1,000. Interest is paid only when a repayment is made.

- Prepare a production budget by month and in total for the first quarter of 2001.
- Prepare a raw material purchases budget by month and in total for the first quarter of 2001.
- Prepare a schedule of cash payments for purchases by month and in total for the first quarter of 2001. The Accounts Payable balance on December 31, 2000, represents the unpaid 20 percent of December purchases.
- Prepare a combined payments schedule for factory overhead and nonfactory cash costs for each month and in total for the first quarter of 2001.
- Prepare a cash budget for each month and in total for the first quarter of 2001.

46. (*Cash budget*) The January 31, 1999, balance sheet of Sara's Plaques follows:

Assets		Liabilities and Stockholders' Equity	
Cash	\$ 12,000	Accounts Payable	\$ 70,200
Accounts Receivable (Net of Allowance for Uncollectibles of \$1,440)	34,560		
Inventory	52,400	Common Stock	\$90,000
Plant Assets (Net of Accumulated Depreciation of \$60,000)	<u>36,000</u>	Retained Earnings (Deficit)	<u>(25,240)</u>
Total Assets	<u>\$134,960</u>	Total Liabilities and Stockholders' Equity	<u>\$134,960</u>

Additional information about the company includes the following:

- Expected sales for February and March are \$120,000 and \$130,000, respectively.
 - The collection pattern from the month of sale forward is 50 percent, 48 percent, and 2 percent uncollectible.
 - Cost of goods sold is 75 percent of sales.
 - Purchases each month are 55 percent of the current month's sales and 45 percent of the next month's projected sales. All purchases are paid for in full in the month following purchase.
 - Other cash expenses each month are \$21,500. The only noncash expense each month is \$4,000 of depreciation.
- a. What are budgeted cash collections for February 2000?
 - b. What will be the Inventory balance at February 29, 2000?
 - c. What will be the projected balance in Retained Earnings at February 29, 2000?
 - d. If the company wishes to maintain a minimum cash balance of \$8,000, how much will be available for investment or need to be borrowed at the end of February 2000?
47. (*Cash budget*) Tim's Department Store typically makes 50 percent of its sales on credit. Sales are billed twice monthly, on the 10th of the month for the last half of the prior month's sales and on the 20th of the month for the first half of the current month's sales. All sales are made with terms of 2/10, n/30. Based on past experience, Accounts Receivable are collected as follows:

Within the discount period	80%
On the 30th day	18%
Uncollectible	2%

Sales for May 2000 were \$600,000 and projected sales for the next four months are

June	\$800,000
July	700,000
August	800,000
September	600,000

Tim's average profit margin on its products is 30 percent of selling price.

Tim's purchases merchandise for resale to meet the current month's sales demand and to maintain a desired monthly ending inventory of 25 percent of the next month's sales. All purchases are on account with terms of n/30. Tim's pays for one-half of a month's purchases in the month of purchase and the other half in the month following the purchase. All sales and purchases occur evenly throughout the month.

- a. How much cash can Tim's plan to collect from Accounts Receivable during July 2000?
 - b. How much cash can Tim's plan to collect in September 2000 from sales made in August?
 - c. What will be the budgeted dollar value of Tim's inventory on August 31, 2000?
 - d. How much merchandise should Tim's plan to purchase during June 2000?
 - e. What are Tim's budgeted cash payments for merchandise during August 2000? *(CMA adapted)*
48. (*Cash budget*) Andrews Manufacturing has incurred substantial losses for several years and has decided to declare bankruptcy. The company petitioned the court for protection from creditors on March 31, 1999, and submitted the following balance sheet:



ANDREWS MANUFACTURING
Balance Sheet
March 31, 1999

	Book Value	Liquidation Value
Assets:		
Accounts Receivable	\$100,000	\$ 50,000
Inventories	90,000	40,000
Plant Assets (Net)	<u>150,000</u>	<u>160,000</u>
Totals	<u>\$340,000</u>	<u>\$250,000</u>

The liabilities and stockholders' equity of Andrews at this date are

Accounts Payable—General Creditors	\$600,000
Common Stock	60,000
Retained Earnings Deficit	<u>(320,000)</u>
Total	<u>\$340,000</u>

Andrews' management informed the court that the company has developed a new product and that a prospective customer is willing to sign a contract for the purchase of 10,000 units of this product during the year ending March 31, 2000, 12,000 units during the year ending March 31, 2001, and 15,000 units during the year ending March 31, 2002, at a price of \$90 per unit. This product can be manufactured using Andrews' present facilities. Monthly production with immediate delivery is expected to be uniform within each year. Receivables are expected to be collected during the calendar month following sales. Unit production costs of the new product are estimated as follows:

Direct material	\$20
Direct labor	30
Variable overhead	10

Fixed costs of \$130,000 (excluding depreciation) are estimated per year. Purchases of direct material will be paid during the calendar month following purchase. Fixed costs, direct labor, and variable overhead will be paid as incurred. Inventory of direct material will be equal to 60 days' usage. After the first month of operations, 30 days' usage will be ordered each month.

The general creditors have agreed to reduce their total claims to 60% of their March 31, 1999, balances under the following conditions:

- Existing accounts receivable and inventories are to be liquidated immediately, with the proceeds turned over to the general creditors.
- The reduced balance of accounts payable is to be paid as cash is generated from future operations, but no later than March 31, 2001. No interest will be paid on these obligations.

Under this proposed plan, the general creditors would receive \$110,000 more than the current liquidation value of Andrews' assets. The court has engaged you to determine the feasibility of this plan.

Ignoring any need to borrow and repay short-term funds for working capital purposes, prepare a cash budget for the years ending March 31, 2000 and 2001, showing the cash expected to be available to pay the claims of the general creditors, payments to general creditors, and the cash remaining after payment of claims. *(CPA adapted)*

49. (*Budgeted sales and S&A; other computations*) Grecian Urns has projected Cost of Goods Sold for June 2000 of \$960,000. Of this amount, \$60,000 represents fixed overhead costs. Total variable costs for the company each month average 70 percent of sales. The company's cost to retail (CGS to sales) percentage is

60 percent and the company normally shows a 15 percent rate of net income on sales. All purchases and expenses (except depreciation) are paid in cash: 55 percent in the month incurred and 45 percent in the following month. Depreciation is \$30,000 per month.

- a. What are Grecian Urns' expected sales for June?
 - b. What are Grecian Urns' expected variable selling and administrative costs for June?
 - c. What is Grecian Urns' normal contribution margin ratio?
 - d. What are Grecian Urns' total fixed costs?
 - e. Grecian Urns normally collects 45 percent of its sales in the month of sale and the rest in the next month. What are expected cash receipts and disbursements related only to June's transactions?
50. (*Pro forma results*) The James Company is attempting to set a new selling price for its single product, a metal file cabinet, for the upcoming year. The current variable production cost is \$40 per unit and total fixed costs are \$2,000,000. Fixed manufacturing costs are 80 percent of total fixed costs and are allocated to the product based on the number of units produced. There are no variable selling or administrative costs. Variable and fixed costs are expected to increase by 15 and 8 percent, respectively, next year. Estimated production and sales are 200,000 units. Selling price is normally set at full production cost plus 25 percent.
- a. What is the expected full production cost per unit of James's file cabinets for next year?
 - b. What is the expected selling price of the product?
 - c. What is pro forma income before tax using the selling price computed in part (b)?
 - d. What would be the required selling price for the company to earn income before tax equal to 25 percent of sales?
51. (*Comprehensive*) Reliable Appliance Company produces and sells two kitchen appliances: mixers and doughmakers. In July 1999, Reliable's budget department gathered the following data to meet budget requirements for 2000.

2000 PROJECTED SALES

Product	Units	Price
Mixers	60,000	\$ 50
Doughmakers	40,000	120

2000 INVENTORIES (UNITS)

Product	Expected 1/1/00	Desired 12/31/00
Mixers	15,000	20,000
Doughmakers	4,000	5,000

To produce one unit of each product, the following major internal components are used (in addition to the plastic housing for products, which is subcontracted in a subsequent operation):

Component	Mixer	Doughmaker
Motor	1	1
Beater	2	4
Fuse	2	3

Projected data for 2000 with respect to components are as follows:

Component	Anticipated Purchase Price	Expected Inventory 1/1/00	Desired Inventory 12/31/00
Motor	\$15.00	2,000	3,600 units
Beater	1.25	21,000	24,000 units
Fuse	2.00	6,000	7,500 units

Projected direct labor requirements for 2000 and rates are as follows:

Product	Hours per Unit	Rate per Hour
Mixers	2	\$7
Doughmakers	3	9

Overhead is applied at a rate of \$5 per direct labor hour.

Based on the above projections and budget requirements for 2000 for mixers and doughmakers, prepare the following budgets for 2000:

- Sales budget (in dollars).
- Production budget (in units).
- Internal components purchases budget (in units).
- Internal components purchases budget (in dollars).
- Direct labor budget (in dollars). *(CPA adapted)*

52. (*Master budget preparation*) Sopchoppy Company manufactures a red industrial dye. The company is preparing its 2000 master budget and has presented you with the following information.

- The December 31, 1999, balance sheet for the company is shown below.



SOPCHOPPY COMPANY
Balance Sheet
December 31, 1999

Assets		Liabilities and Stockholders' Equity	
Cash	\$ 5,080	Notes Payable	\$ 25,000
Accounts Receivable	26,500	Accounts Payable	2,148
Raw Materials Inventory	800	Dividends Payable	10,000
Finished Goods Inventory	2,104	Total Liabilities	\$ 37,148
Prepaid Insurance	1,200	Common Stock	\$100,000
Building	\$300,000	Paid-in Capital	50,000
Accumulated Depreciation	<u>(20,000)</u>	Retained Earnings	<u>128,536</u>
Total Assets	<u>\$315,684</u>	Total Liabilities and Stockholders' Equity	<u>\$315,684</u>

- The Accounts Receivable balance at 12/31/99 represents the remaining balances of November and December credit sales. Sales were \$70,000 and \$65,000, respectively, in those two months.
- Estimated sales in gallons of dye for January through May 2000 are shown below.

January	8,000
February	10,000
March	15,000
April	12,000
May	11,000

Each gallon of dye sells for \$12.

- The collection pattern for accounts receivable is as follows: 70 percent in the month of sale; 20 percent in the first month after the sale; 10 percent in the second month after the sale. Sopchoppy expects no bad debts and no customers are given cash discounts. *(continued)*

5. Each gallon of dye has the following standard quantities and costs for direct materials and direct labor:

1.2 gallons of direct material (some evaporation occurs during processing) @ \$0.80 per gallon	\$0.96
--	--------

1/2 hour of direct labor @ \$6 per hour	3.00
---	------

Variable overhead is applied to the product on a machine-hour basis. It takes 5 hours of machine time to process 1 gallon of dye. The variable overhead rate is \$0.06 per machine hour; VOH consists entirely of utility costs. Total annual fixed overhead is \$120,000; it is applied at \$1.00 per gallon based on an expected annual capacity of 120,000 gallons. Fixed overhead per year is composed of the following costs:

Salaries	\$78,000
Utilities	12,000
Insurance—factory	2,400
Depreciation—factory	27,600

Fixed overhead is incurred evenly throughout the year.

6. There is no beginning inventory of Work in Process. All work in process is completed in the period in which it is started. Raw Materials Inventory at the beginning of the year consists of 1,000 gallons of direct material at a standard cost of \$0.80 per gallon. There are 400 gallons of dye in Finished Goods Inventory at the beginning of the year carried at a standard cost of \$5.26 per gallon: Direct Material, \$0.96; Direct Labor, \$3.00; Variable Overhead, \$0.30; and Fixed Overhead, \$1.00.
7. Accounts Payable relates solely to raw material. Accounts Payable are paid 60 percent in the month of purchase and 40 percent in the month after purchase. No discounts are given for prompt payment.
8. The dividend will be paid in January 2000.
9. A new piece of equipment costing \$9,000 will be purchased on March 1, 2000. Payment of 80 percent will be made in March and 20 percent in April. The equipment will have no salvage value and has a useful life of three years.
10. The note payable has a 12 percent interest rate; interest is paid at the end of each month. The principal of the note is paid off as cash is available to do so.
11. Sopchoppy's management has set a minimum cash balance at \$5,000. Investments and borrowings are made in even \$100 amounts. Investments will earn 9 percent per year.
12. The ending Finished Goods Inventory should be 5 percent of the next month's needs. This is not true at the beginning of 2000 due to a miscalculation in sales for December. The ending inventory of raw materials should be 5 percent of the next month's needs.
13. Selling and administrative costs per month are as follows: salaries, \$18,000; rent, \$7,000; and utilities, \$800. These costs are paid in cash as they are incurred.

Prepare a master budget for each month of the first quarter of 2000 and pro forma financial statements as of the end of the first quarter of 2000.

CASES

53. (*Preparing and analyzing a budget*) Harvey & Company, a local accounting firm, has a formal budgeting system. The firm is comprised of five partners, two managers, four seniors, two secretaries, and two bookkeepers. The budgeting process has a bottom-line focus; that is, the budget and planning process continues to iterate and evolve until an acceptable budgeted net income is obtained. The determination of an acceptable level of net income is based on two factors: (1) the amount of salary the partners could generate if they were employed elsewhere and (2) a reasonable return on the partners' investment in the firm's net assets.

For 2001, after careful consideration of alternative employment opportunities, the partners agreed that the best alternative employment would generate the following salaries:

Partner 1	\$150,000
Partner 2	225,000
Partner 3	110,000
Partner 4	90,000
Partner 5	<u>125,000</u>
Total	<u>\$700,000</u>

The second input to determination of the desired net income level is more complex. This part of the desired net income is based on the value of the net assets owned by the accounting firm. The partners have identified two major categories of assets: tangible assets and intangible assets. The partners have agreed that the net tangible assets are worth \$230,000. The intangible assets, consisting mostly of the accounting practice itself, are worth 1.1 times gross fees billed in 2000. In 2000, the firm's gross billings were \$1,615,000. The partners have also agreed that a reasonable rate of return on the net assets of the accounting firm is 12 percent. Thus, the partners' desired net income from return on investment is as follows:

Tangible assets	\$ 230,000
Intangible assets (\$1,615,000 × 110%)	<u>1,776,500</u>
Total investment	<u>\$2,006,500</u>
Times rate of return	× 0.12
Equals required dollar return	<u>\$ 240,780</u>

The experience of the accounting firm indicates that other operating costs are incurred as follows:

Fixed Expenses (per year):

Salaries (other than partners)	\$300,000
Overhead	125,000

Variable Expenses:

Overhead	15% of gross billings
Client service	5% of gross billings

SOURCE: Adapted from Jerry S. Huss, "Better Budgeting for CPA Firms," *Journal of Accountancy* (November 1977), pp. 65–72. Reprinted with permission from the *Journal of Accountancy*. Copyright © 2000 by American Institute of CPAs. Opinions of the authors are their own and do not necessarily reflect policies of the AICPA.

- Determine the minimum level of gross billings that would allow the partners to realize their net income objective. Prepare a budget of costs and revenues at that level. *(continued)*

- b. If the partners believe that the level of billings you have projected in part (a) is not feasible given the time constraints at the partner, manager, and senior levels, what changes can they make to the budget to preserve the desired level of net income?
54. (*Preparing a cash budget*) Collegiate Management Education (CME), Inc., is a nonprofit organization that sponsors a wide variety of management seminars throughout the Southwest. In addition, it is heavily involved in research into improved methods of teaching and motivating college administrators. The seminar activity is largely supported by fees, and the research program is supported by membership dues.

CME operates on a calendar-year basis and is finalizing the budget for 2000. The following information has been taken from approved plans, which are still tentative at this time:

SEMINAR PROGRAM

Revenue—The scheduled number of programs should produce \$12,000,000 of revenue for the year. Each program is budgeted to produce the same amount of revenue. The revenue is collected during the month the program is offered. The programs are scheduled during the basic academic year and are not held during June, July, August, and December. Twelve percent of the revenue is generated in each of the first five months of the year and the remainder is distributed evenly during September, October, and November.

Direct expenses—The seminar expenses are made up of three types:

- Instructors' fees are paid at the rate of 70 percent of seminar revenue in the month following the seminar. The instructors are considered independent contractors and are not eligible for CME employee benefits.
- Facilities fees total \$5,600,000 for the year. They are the same for each program and are paid in the month the program is given.
- Annual promotional costs of \$1,000,000 are spent equally in all months except June and July when there is no promotional effort.

RESEARCH PROGRAM

Research grants—The research program has a large number of projects nearing completion. The main research activity this year includes feasibility studies for new projects to be started in 2001. As a result, the total grant expense of \$3,000,000 for 2000 is expected to be paid out at the rate of \$500,000 per month during the first six months of the year.

SALARIES AND OTHER CME EXPENSES

- Office lease—annual amount of \$240,000 paid monthly at the beginning of each month.
- General administrative expenses—\$1,500,000 annually or \$125,000 per month. These are paid in cash as incurred.
- Depreciation expense—\$240,000 per year.
- General CME promotion—annual cost of \$600,000, paid monthly.
- Salaries and benefits are as follows:

Number of Employees	Monthly Cash Salary	Total Annual Salaries
1	\$50,000	\$ 50,000
3	40,000	120,000
4	30,000	120,000
15	25,000	375,000
5	15,000	75,000
<u>22</u>	10,000	<u>220,000</u>
<u>50</u>		<u>\$960,000</u>

Employee benefits amount to \$240,000 or 25 percent of annual salaries. Except for the pension contribution, the benefits are paid as salaries are paid. The annual pension payment of \$24,000, based on 2.5 percent of total annual salaries, is due on April 15, 2000.

OTHER INFORMATION

- Membership income—CME has 100,000 members who each pay an annual fee of \$100. The fee for the calendar year is invoiced in late June.
 - The collection schedule is as follows: July, 60 percent; August, 30 percent; September, 5 percent; and October, 5 percent.
 - Capital expenditures—The capital expenditures program calls for a total of \$510,000 in cash payments to be spread evenly over the first five months of 2000.
 - Cash and temporary investments at January 1, 2000, are estimated at \$750,000.
- a. Prepare a budget of the annual cash receipts and disbursements for 2000.
 - b. Prepare a cash budget for CME for January 2000.
 - c. Using the information developed in parts (a) and (b), identify two important operating problems of CME. *(CMA adapted)*

55. *(Revising and analyzing an operating budget)* The Mason Agency, a division of General Service Industries, offers consulting services to clients for a fee. The corporate management at General Service is pleased with the performance of the Mason Agency for the first nine months of the current year and has recommended that the division manager of the Mason Agency, Ramona Howell, submit a revised forecast for the remaining quarter, because the division has exceeded the annual year-to-date plan by 20 percent of operating income. An unexpected increase in billed hour volume over the original plan is the main reason for this gain in income. The original operating budget for the first three quarters for the Mason Agency is presented below.

2000 OPERATING BUDGET				
	1st Quarter	2nd Quarter	3rd Quarter	Total 9 Months
Revenue:				
Consulting fees				
Management consulting	\$ 315,000	\$ 315,000	\$ 315,000	\$ 945,000
EDP consulting	421,875	421,875	421,875	1,265,625
Total	<u>\$ 736,875</u>	<u>\$ 736,875</u>	<u>\$ 736,875</u>	<u>\$ 2,210,625</u>
Other revenue	10,000	10,000	10,000	30,000
Total	<u>\$ 746,875</u>	<u>\$ 746,875</u>	<u>\$ 746,875</u>	<u>\$ 2,240,625</u>
Expenses:				
Consultant salaries	\$(386,750)	\$(386,750)	\$(386,750)	\$(1,160,250)
Travel and entertainment	(45,625)	(45,625)	(45,625)	(136,875)
Administrative	(100,000)	(100,000)	(100,000)	(300,000)
Depreciation	(40,000)	(40,000)	(40,000)	(120,000)
Corporate allocation	(50,000)	(50,000)	(50,000)	(150,000)
Total	<u>\$(622,375)</u>	<u>\$(622,375)</u>	<u>\$(622,375)</u>	<u>\$(1,867,125)</u>
Operating income	<u>\$ 124,500</u>	<u>\$ 124,500</u>	<u>\$ 124,500</u>	<u>\$ 373,500</u>

When comparing the actuals for the first three quarters to the original plan, Howell analyzed the variances and will reflect the following information in her revised forecast for the fourth quarter.

The division currently has 25 consultants on staff, 10 for management consulting and 15 for EDP consulting, and has hired 3 additional management consultants to start work at the beginning of the fourth quarter to meet the increased client demand.

The hourly billing rate for consulting revenues will remain at \$90 per hour for each management consultant and \$75 per hour for each EDP consultant. However, due to the favorable increase in billing hour volume when compared to the plan, the hours for each consultant will be increased by 50 hours per quarter. New employees are equally as capable as current employees and will be billed at the same rates.

The budgeted annual salaries and actual annual salaries, paid monthly, are the same at \$50,000 for a management consultant and 8 percent less for an EDP consultant. Corporate management has approved a merit increase of 10 percent at the beginning of the fourth quarter for all 25 existing consultants, but the new consultants will be compensated at the planned rate.

The planned salary expense includes a provision for employee fringe benefits amounting to 30 percent of the annual salaries; however, the improvement of some corporatewide employee programs will increase the fringe benefit allocation to 40 percent.

The original plan assumes a fixed hourly rate for travel and other related expenses for each billing hour of consulting. These are expenses that are not reimbursed by the client, and the previously determined hourly rate has proven to be adequate to cover these costs.

Other revenues are derived from temporary rentals and interest income and remain unchanged for the fourth quarter.

Administrative expenses have been favorable at 7 percent below the plan; this 7 percent savings on fourth-quarter expenses will be reflected in the revised plan.

Depreciation for office equipment and computers will stay constant at the projected straight-line rate.

Due to the favorable experience for the first three quarters and the division's increased ability to absorb costs, the corporate management at General Service Industries has increased the corporate expense allocation by 50 percent.

- a. Prepare a revised operating budget for the fourth quarter for the Mason Agency that Ramona Howell will present to General Service Industries. Be sure to furnish supporting calculations for all revised revenue and expense amounts.
- b. Discuss the reasons why an organization would prepare a revised forecast.
- c. Discuss your feelings about the 50 percent increase in corporate expense allocations. *(CMA adapted)*

REALITY CHECK

56. Many managers believe that, if all amounts in their budgets are not spent during a period, they will lose allocations in future periods and that little or no recognition will result from cost savings.

Discuss the behavioral and ethical issues involved in a spend-it-or-lose-it attitude. Include in your discussion the issue of negotiating budget allocation requests prior to the beginning of the period.

57. *(Key variables)* A consultant mentioned to Alpha Company's CEO that key variables are significant if the company is to control its destiny. The CEO has asked you to prepare a brief memo explaining what the consultant meant.
58. *(Continuous budgeting)* You own a small boat manufacturing company. At a recent manufacturers' association meeting, you overheard one of the other company owners saying how he liked using a continuous budgeting process. Discuss what you believe are the advantages and disadvantages of continuous budgeting for your company in a report to your top management group.

59. (*Planning versus control*) Your colleague, who loves riddles, has asked you the following question: “Is planning an extension of control or is control an extension of planning?” Prepare a reply.
60. Many companies prepare a simplified cash budget as follows: Beginning cash + Cash receipts – Cash disbursements = Ending cash. Discuss the advantages of the model presented in Exhibit 13–16 when compared with such a simplified cash budget.
61. Find the Web page for the International Red Cross. Review the variety of activities in which this organization is currently involved. What would be the greatest challenges in budgeting for such an organization? What actions has the organization taken to deal with its budgeting challenges?
62. *To evaluate different planning techniques used to develop strategic plans, The Futures Group recently interviewed senior corporate executives at more than 100 U.S. companies. According to 43% of the respondents, competitor actions are the top external factor impacting their business.*



SOURCE: Stephen H. Miller and Samuel Bentley, “Competitive Intelligence Increases Strategic Planning ‘Comfort Level,’” *Competitive Intelligence Magazine* (January–March 1999), p. 5.

Discuss why you believe so many senior executives have indicated that competitor actions are the top external factor impacting their business.