Managerial and Leadership Think-Work Functions

and

Associated Concepts and Practices

Budgeting

Robert D. Cecil

Third Edition

R. D. Cecil and Company
Human Resources Development

Copyright © 1989, 1995, 2012, 2021
R. D. Cecil and Company
All Rights Reserved.

Table of Contents

PART V: BUDGETING

Table of Contents

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

BUDGETING

Basic Perspectives

General Context

In order to implement its programs and projects and to continue its ongoing operations, an organization must utilize the financial and nonfinancial resources available to it. *Financial resources* include, for example, cash and other assets that can readily be converted to cash (such as securities). Some financial resources are internally generated—e.g., by generating profits. Some can be "freed up"—e.g., by accelerating the sale of inventory in order to generate cash. And some can be procured externally—e.g., by selling stock and by borrowing. *Nonfinancial resources* include, for example, human resources (personnel) and physical resources (such as plant and equipment). The procurement of nonfinancial resources generally requires the expenditure of financial resources.

Usually, however, an organization does not have all the resources necessary to implement all the programs, projects, and ongoing operations that it would like to implement. Organizational resources are usually limited. In fact, they are often scarce. Therefore, an organization must budget the resources available to it.

Definitions

Budgeting is the part of the planning process (and the management control process) aimed at planning the effective and efficient use of resources. It involves these basic phases and steps:

1. Determining resources requirements:
   a. Identifying the resources (e.g., facilities, equipment, materials, and personnel) that will be needed in order to carry out programs/projects and ongoing operations.
   b. Costing resources requirements for which expenditures will be made—i.e., translating these resources requirements into monetary (dollar) terms.
   c. Translating nonfinancial resources requirements into nonmonetary (non-dollar/numerical) terms.
2. Determining funding constraints: Determining the total internally-generated and externally-procurable financial resources that will be available to fund ongoing operations and new programs/projects.
3. Allocating resources: Determining how much of the available resources will be allocated to and utilized by which organizational units during the long-term or short-term time period under consideration.

Budgets are the outputs of the budgeting process. While many people think of budgets as being financial in nature, a number of budgets also deal with nonfinancial aspects of operations.

Financial budgets, which have been called "the dollarization of plans," are statements of anticipated/planned results of operations in dollar terms —

a. anticipated/planned revenues (income); and/or
b. anticipated/planned (resources requirements) costs.

Nonfinancial budgets are statements of anticipated/planned results involving nonfinancial aspects of operations. These can deal with, for example: total unit sales volume, total units of production, total required number of direct labor hours, total required number of machine hours, and floor space utilization.

Relationships to the Planning Process

1. As shown in Figures 7-A and 7-B (pages PP-4 and PP-5), (initial) budgeting steps immediately follow the formulation of plans for the implementation of programs/projects (first at the organizational level, and then at each successively lower level in its turn).

2. The budgeting process often leads to the modification and/or the reprioritization of programs/projects. Since it involves projecting the revenues and expenses associated with each alternative program/project, it enables managers to (a) further analyze each program/project,

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

Exhibit K: WXY Company (Marketing Department) 1st Quarter Sales Budget
(in 000s of units or dollars)

	January			February			March			1st Quarter Total		
	Bdgt	Actl	Var	Bdgt	Actl	Var	Bdgt	Actl	Var	Bdgt	Actl	Var
UNIT SALES of Products/Services												
Prod/Srvc Group A												
Prod/Srvc 1	80			82			84			246		
Prod/Srvc 2	70			70			71			211		
Total Units A	150			152			155			457		
Prod/Srvc Group B												
Prod/Srvc 3	50			51			52			153		
TOTL UNIT SALES	200			203			207			610		
DOLLAR SALES (# units x $ Price)												
Prod/Srvc Group A												
# P/S 1 (x) $10	800			820			840			2460		
# P/S 2 (x) $13	910			910			923			2743		
Total $s A:	1,710			1730			1763			5203		
Prod/Srvc Group B												
# P/S 3 (x) $18	900			918			936			2754		
TOTAL $ SALES	2,610			2,648			2,699			7,957		

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

(b) identify benefit/cost trade-offs between programs/projects, (c) justify programs/projects, and (d) determine which programs/projects will deliver a "big enough bang for the buck."

3. When the planning process has been completed and budgets have been finalized and approved, budgets (resources) are formally allocated to units (or responsibility centers—i.e., revenue centers, expense centers, profit centers, and investment centers).

Purposes/Benefits of Budgeting

1. To means-orient (as well as goal-orient) activities.

   a. To focus personnel's attention on their utilization of (limited) resources.

   b. To crystallize and specify the means—that is, to specify who is to generate and/or utilize how much of which resources over a specific period of time.

2. To assure the effective, efficient allocation and utilization of (limited) resources.

   a. To preserve an organization's resources.

   b. To promote discussions concerning how resources will be utilized in order to implement plans and achieve goals.

   c. To provide a numerical/monetary basis for analyzing, justifying, and modifying each alternative program/project during the planning phase of the planning process.

Exhibit L: WXY Company (Production Department) 1st Quarter Materials/Parts Budget* (in 000s of units or dollars)

	January			February			March			1st Quarter Total		
	Bdgt	Actl	Var	Bdgt	Actl	Var	Bdgt	Actl	Var	Bdgt	Actl	Var
Units Prod 1	80			82			84			246		
Mtl X: 2 lb/unit	160			164			168			492		
Part 1: 1/unit	80			82			84			246		
Units Prod 2	70			70			71			211		
Mtl Y: 2 lb/unit	140			140			142			422		
Part 2: 1/unit	70			70			71			211		
Units Prod 3	50			51			52			153		
Mtl Y: 3 lb/unit	150			153			156			459		
Part 3: 1/unit	50			51			52			153		
Matls/Parts Costs												
(Units x Use x Cost)												
Matl. X (x) $2/lb	320			328			336			984		
Matl. Y (x) $3/lb	870			879			894			2693		
Part 1 (x) $1/ea	80			82			84			246		
Part 2 (x) $2/ea	140			140			142			422		
Part 3 (x) $3/ea	150			153			156			459		
TOTL MATL COST	1,560			1,582			1,612			4,754		

* Here it has been unrealistically assumed that there are no ending inventories of materials or finished goods.

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

d. To provide a numerical/monetary basis for comparing and (re)prioritizing alternative programs/projects during the decision-making phase of the planning process.

e. To place limits on the resources used by responsibility centers.

f. To allocate resources wisely and fairly among responsibility centers.

3. To establish bases for controlling resources.

   a. To clarify managers' responsibilities concerning resources.

   b. To obtain managers' commitment to budgetary plans.

   c. To establish standards against which actual financial performance (interim and/or final results involving financial items such as revenues, expenses, assets, and liabilities) can be compared and evaluated.

   d. To establish standards against which actual nonfinancial performance (interim and/or final results involving nonfinancial items such as units sold, units produced, labor hours incurred, and machine hours incurred) can be compared and evaluated.

Characteristics of Budgets

1. Down the left-hand column (of a columnar sheet), they list specific budgetary items or budgetary accounts. (See Exhibits K and L.)

A particular budget may list (a) financial items (such as revenue items, expense items, asset items, and/or liability items); (b) nonfinancial items (such as unit sales volume, unit production volume, direct labor hours, machine hours, and square foot usage); or (c) both types of items.

What items are listed on a particular budget depends on several factors: (a) the basic purpose of the budget (i.e., the type of budget it is); (b) the organizational level to which it applies; (c) the type of functional unit to which it applies; (d) the type of responsibility center to which it applies; (e) the items that are to be controlled by the responsibility center (organization or unit); and (f) the detail or specificity desired.

Similar or related items are often grouped together under a heading that broadly describes them. A particular budget may contain several broad headings.

2. Budgetary entries for the items listed are stated in numerical terms. Entries for financial items are stated in monetary (dollar) terms, while entries for nonfinancial items are stated in nonmonetary (non-dollar/numerical) terms.

   Note in Exhibit K that revenue items (sales dollars) are expressed in monetary (dollar) terms. So are the expense items (materials and parts costs) in Exhibit L.

   Also note that the entries for unit sales volume and units of production (both nonfinancial items) are expressed in nonmonetary (non-dollar) terms. In other types of budgets, entries for other nonfinancial items (such as allocated office space, labor hours, and machine hours) are expressed in the same manner.

   Where similar or related items are listed together under some broad or inclusive heading, a total for those items is generally entered directly below the last item.

3. Budgets cover a specified period of time. Short-term budgets cover a (work) week, a month, a quarter, a six-month (semi-annual) period, or a year. Long-range budgets can cover five, ten, fifteen, twenty, or more years.

4. Budgets are formatted in (horizontal) rows and (vertical) columns.

   Rows: Rows extend from left to right across a budget sheet. Exhibits K and L illustrate the following: Most rows are labeled in the left-hand column. Some labels may be for budgetary item groups (e.g., "Product/Service Group A"). Some labels may be for specific budgetary items under a group heading (e.g., "Product/Service 1" and "Product/Service 2" in "Group A"). Some labels may denote a sub-total, total, or grand total for a grouping of items. Some rows may be left blank in order to separate labeled rows visually.

   Time period columns: Columns extend from top to bottom down a budget sheet. Figures for the budgetary items are entered in columns from left to right (starting with the column to the right of the one containing row labels), with a column for each day, week, month, quarter, or year covered. For example:

   * In a weekly budget, figures for each budgetary item are shown for each day of the work week (in four, five, six, or seven separate columns from left to right). The items' weekly totals are normally shown in a final column to the right. [We have provided no example of a weekly budget in this section.]

   * In a monthly budget, figures for each budgetary item are normally shown for each of the four weeks (in four separate columns from left to right). The items' monthly totals are usually shown in a final column to the right. (Figures for items are sometimes shown for each of the month's work days, with the monthly totals shown in a final column to the right.) [We have provided no example of a monthly budget in this section.]

   * In a quarterly budget, figures for each budgetary item are normally shown for each of the three months (in three separate columns from left to right). The items' quarterly totals are normally shown in a final column to the right. Exhibits K and L are quarterly budgets.

   * In a semi-annual budget, figures for each budgetary item are shown in one of two ways: (a) for each of the six months (in six separate columns from left to right), with the six-month totals shown in a final column to the right; or (b) for each of the two quarters (in two separate columns from left to right), with the six-month totals shown in a final column to the right. [We have provided no example of a semi-annual budget in this section.]

* In an annual budget, figures for each budgetary item can be shown in several ways: (a) for each of the twelve months (in twelve separate columns from left to right), with the twelve-month totals shown in a final column to the right; (b) for each of the four quarters (in four separate columns from left to right), with the twelve-month totals shown in a final column to the right; (c) for each of the two semi-annual periods (in two separate columns from left to right), with the annual totals shown in a final column to the right; or (d) totalled for the entire year in a single column to the right.

  In the sample annual budgets shown in Exhibits N through V and Exhibit X (on pages B- 20, 24, 26, 28, 29, 30, 34 to 36, 42, and 48), we have utilized the second format described above (quarterly totals followed by annual totals for the items).

  In the sample annual budgets shown in Exhibits W and Y (pages B-42 and B-52), we have utilized the last format described above (annual totals for the items).

* In a long-range budget, figures for each budgetary item are normally shown for each of the five, ten, fifteen, twenty, or more years that constitute the long-range budgetary period. [We have provided no example of a long-range budget in this section.]

Budget, actual, and variance columns: Since budgets are generally used as reporting and control documents as well as planning tools, they often contain two or three additional columns.

The first column contains budgeted (planned) figures for the items listed. These figures constitute the forecasted, estimated, projected, or desired amounts or levels of results that an organization or a unit plans to achieve with respect to the items listed.

The second column contains actual figures for the items listed. These figures constitute the actual amounts or levels of results that eventually occur with respect to the items listed. They are entered on the budget document once the actual amounts/levels of (operating) results have been determined by the accounting department.

The third column contains variance figures for the items listed. These figures are calculated by subtracting the figures for "actual results" from the figures for "budgeted/planned results." Coming out under budget on an item yields a "positive variance." Coming out over budget on an item yields a "negative variance." And coming out on budget yields a "zero variance."

Prior period (reference/comparison) columns: Budgets frequently have even more columns that show the budget, actual, and variance figures for the corresponding weekly, monthly, quarterly, or annual period(s) during the previous budgetary (fiscal) period. All three columns—but often just the "actual" column—may be included in order to provide reference figures that will (a) help managers formulate the budget for the coming year, and (b) subsequently enable them to compare results achieved during the coming period with results achieved during the corresponding period in the recent past.

Note: See Exhibits W and Y on pages B-42 and B-52 for examples.

5. Budgets are approved in advance by a higher level of authority (such as top management).

6. They represent managerial agreement to utilize resources as officially allocated.

7. Once approved and agreed to, they can be modified only under previously agreed circumstances.

The Responsibility Centers to Which Budgets Are Assigned/Allocated

Once budgets have been finalized and approved by upper management, they are officially assigned and allocated to responsibility centers (units). Assignment of a budget to a responsibility center makes that center responsible for achieving the planned budgetary results. Allocation of a budget to a responsibility center provides that center with its share of organizational resources and makes that center accountable for controlling its utilization of those resources.

Although we described the types of responsibility centers earlier in the section on goal setting (page GS-21), we will

describe them again here for the reader's convenience. We will also indicate which types of units are generally considered which types of responsibility centers.

1. Expense centers: These centers are held responsible for controlling only the expenses (costs) that they incur. They can incur expenses in several ways:

    a. by making (or causing the organization to make) expenditures for personnel, materials, supplies, and other inputs to unit operations;
    b. by utilizing services provided by another internal unit such as the data processing department—and subsequently being charged on a time/volume or other basis for a share of the provider unit's expenses; and
    c. by being charged on an actual cost, output volume, space usage, or other basis for some portion of organizational overhead expenses involving, for example, utilities, office rental/lease, telephone service, and executive salaries.

    Although expense centers control the costs of inputs to their operations, they do not determine the prices to be charged for the value of their outputs. (Pricing involves adding some mark-up over costs in order to generate some amount of profit.) Most expense centers transfer their products or services to other organizational units at an "internal value" that is determined by the cost accounting department rather than free market forces (which are operating when a buyer and a seller agree to a price within a competitive market environment).

    Thus, expense centers do not generate revenue, and, therefore, do not make a profit. However, by controlling and minimizing expenses, which are subtracted from revenues in order to calculate profit, they do contribute to profit.

    The following units and sub-units are usually considered expense centers:

    a. the marketing department's advertising and market research departments;
    b. the R&D department — and its research and development departments;
    c. the production, service, or operations department — and its engineering, purchasing, maintenance, manufacturing, quality assurance, and shipping departments;
    d. the human resources department — and its employment, compensation, labor relations, and training departments; and
    e. the finance department — and its accounting and data processing departments.

2. Revenue centers: These centers are held responsible for the revenue they generate. (Revenue equals the number of units of products/services sold multiplied by the unit prices of products/services sold.) However, in order to be considered a true revenue center, an organizational unit must be able to control or significantly influence the prices it charges for the products or services it sells. It need not be able to control internal charges/prices (or outside sources' prices) for the products/services it sells (or purchases and then sells). (If a revenue center does control both revenues and expenses, it is considered a profit center.)

    Since revenue centers incur operating expenses, they also have expense budgets. This often creates some confusion as to whether they should be called "revenue centers," "expense centers," both, or something else. The following points provide basic guidelines:

    In most organizations that do not have profit center units, only the marketing or sales department actually sells products or services in the marketplace. In such organizations, therefore, it is the only unit that can be a revenue center.

    In those organizations where prices are established by top management (as in the case of many small organizations), the marketing or sales department is sometimes called a revenue center, but it is not a true revenue center. It would be more appropriate to call it an expense center.

    In those organizations where top management authorizes the marketing or sales department to establish prices for products or services (as in the cases of many larger organizations), that department can be called a "true revenue center."

    In some organizations, units other than the marketing or sales department sell their products or services to outside customers. This is usually done in order to utilize excess capacity and generate additional revenue. For example: A data processing department might sell its excess computer time to another organization on

a contract basis. Or a production department might sell certain unfinished or finished products direct to certain customers. Such units can be considered revenue centers if they (a) are authorized to establish their own prices, and (b) sell a significant percentage of their products or services to outside customers.

3. Profit centers: These centers are held responsible for the profit they generate. Profit is calculated by subtracting expenses from revenues. Therefore, to be a true profit center, a unit must be able to control or significantly influence both (a) the revenue it generates (the prices it charges for its outputs), and (b) the expenses it incurs (the costs of its inputs—including the prices it pays for any products or services that it buys). In other words, a unit can be a true profit center if its revenues and expenses are significantly if not entirely determined by free market forces.

   An entire organization is a true profit center.

   Certain individual units of an organization can also be true profit centers if they are authorized to operate more or less autonomously. In general, the units most likely to be profit centers are the marketing division and the production or service division.

   A large, autonomous marketing division is a true profit center if it (a) establishes the prices for the products or services it sells, (b) can negotiate the (inter-divisional) prices it pays to the production division for the products it buys from that division, and (c) is free to purchase significant amounts of what it sells from sources other than the production division.

   Similarly, a large, autonomous production division is a true profit center if it (a) is free to negotiate the (inter-divisional) prices for which it sells its products to the marketing division, and (b) is free to sell a significant percentage of its products—at prices that it establishes—to customers outside the organization.

4. Investment centers: These centers are held responsible for some specified relationship between the profits they generate and the assets they employ. (The most commonly used relationship is "return on investment" or "ROI," which is calculated by dividing net profit by total assets.) Thus, investment centers must be able to control or significantly influence a number of factors.

   First, being profit centers, they must control or significantly influence revenue and expenses (i.e., prices charged for outputs and prices paid for inputs). Second, they must also have the authority to make decisions concerning the physical and financial assets that they use in order to conduct their operations.

   An entire organization is a true investment center.

   Certain profit center units can also be investment centers—if they have authority to make decisions regarding their capital investments: a profit center marketing division; a profit center production division; the trust department of a bank; the securities department of an insurance company; and the investment department of a trust fund.

The above discussion is summarized in Table 4 on page B-58.

Basic Types of Budgets and the Process of Their Preparation

In previous sections we discussed types of goals and plans (programs/projects) in two steps: first, in terms of their context; then, in terms of the organizational level or unit to which they applied. In this section, however, we discuss types of budgets in a more integrated manner—in terms of both (a) the types of items/accounts involved, and (b) the organizational level or unit(s) that are responsible for them.

The following types of budgets are described below:

Unit/departmental program/project budgets
Operating program/project budget(s)
Facilitiess/equipment program/project budget(s)
Structural/systems program/project budget(s)
Human resources program/project budget(s)

Marketing/sales department budgets
Sales budget
Revenue budget
Cash collections budget
Selling (expense) budget
Advertising/promotion (expense) budget

Production department budgets
Production budget
(Direct) Materials budget

Disbursements (for materials) budget
Direct labor (expense) budget
Factory overhead (expense) budget
Factory payroll budget
Cost of goods sold (COGS) budget
Ending inventories budgets

Other specialized departments' budgets
Portfolio/investment(s) budget

Budgets common to various departments
(Other) Departmental expenses budget
(Summary) operating budget
Facilities/equipment budget
Human resources budget

Organizational/corporate budgets
(Summaries and/or consolidations of unit budgets)

Operating budget
Facilities/equipment budget
Capital expenditures budget
Human resources budget
Payroll budget
Procurement budget
Cash budget
Balance sheet (assets/liabilities) budget

Preliminary Perspectives and Notes

A. **Organizational and unit/departmental budgets**

Manufacturing organizations' budgets: Most manufacturing organizations have all or nearly all of the budgets listed above. The major organizational budgets, however, are the organizational operating budget, the organizational cash budget, and the organizational pro forma balance sheet budget. Most of the other budgets are essentially "supporting budgets." The preparation of supporting budgets is normally the responsibility of various organizational units, but is usually assisted by the accounting department.

In general, manufacturing organizations' units do not have all the above budgets. Although they may have a (summary) operating budget, they do not normally have organizational budgets such as a cash budget and a balance sheet budget. Also, as indicated in the listing above, certain types of units usually have certain types of budgets that other units do not have.

Non-manufacturing/service and non-profit organizations' budgets: Most non-manufacturing/service and non-profit organizations do not have all the budgets listed above. For example, they do not have budgets associated with production—e.g., production, materials, direct labor, factory overhead, and cost-of-goods-sold budgets. Non-profit organizations have a revenue budget, but they may or may not have a sales budget.

Non-manufacturing organizations' units also do not have many of the listed budgets.

B. **Relationships among budgets**

Virtually all budgets are in some way related to other budgets. Some are "supporting budgets" or "sub-budgets," some are "summary budgets," and some are "consolidated budgets."

A supporting budget is a detailed, specialized budget that contains figures for a number of items or accounts associated with one particular area. It is prepared in order to:

a. establish a format for filling in planned/projected figures for the items/accounts in that one particular area;
b. establish bases for subsequently managing/controlling the items/accounts in that particular area;
c. provide inputs for the preparation of other budgets; and
d. provide detailed substantiation for figures that are carried forward to other budgets.

Supporting budgets are essentially the building blocks on which summary and consolidated budgets are based. In general, most unit/departmental budgets are supporting budgets. For example, all of the budgets listed below the word "Budgets" on page B-10 of Figure 14 are supporting budgets. They support the preparation of (a) several unit/departmental summary budgets (on the left side of page B-11), and (b) various organizational summary and consolidated budgets (on the right side of page B-11).

A summary budget provides a less detailed view of planned results. For example, rather than indicating both (a) figures for specific items in a group of similar

or related items, and (b) total figures for that group directly underneath (as does a more detailed supporting budget), it only indicates the total figures for the group. A summary budget often contains figures derived from several areas' supporting budgets.

Two good examples are a unit operating budget and an organizational operating budget. A particular unit's operating budget summarizes various figures contained in its supporting budgets (many of which can be summaries of its specialized sub-units' budgets). An organization's operating budget summarizes various figures contained in the operating budgets and other accounting budgets of major units. [See page B-11 of Figure 14.]

A consolidated budget contains totalled (aggragated/consolidated) figures for specified items appearing in similarly-titled supporting budgets prepared by units and sub-units.

Units' consolidated budgets contain total figures for specified items in their sub-units' similarly-titled budgets. For example, the production department's consolidated facilities/equipment budget indicates the totals for specified items in its engineering, purchasing, maintenance, manufacturing, quality assurance, and shipping (sub-)departments' separate facilities/equipment budgets.

Basically, organizational (consolidated) budgets contain total figures for specified items in major units' similarly-titled budgets. In addition, however, the totals often include figures for the resources used and expenses incurred by the top management or corporate level. For example, the total figures for items on the organizational human resources budget generally include (a) the totals for those items in the major units' separate human resources budgets, and (b) figures for those same human resources requirements and expenses that are attributable to top executives and their office personnel.

It should be noted that, as indicated above the right-hand column on page B-11 of Figure 14, many organizational budgets both summarize and consolidate figures contained in major units' budgets.

It is because of the many building-block relationships among unit/departmental budgets and organizational budgets that we will discuss various types of budgets within the context of the budgeting process (the budgeting portion of the goal-setting/planning process).

C. Basic perspectives on budgeting within the context of the goal-setting and planning process

Figure 14 on page B-10 illustrates how the budgeting process fits within the context of an annual top-down/bottom-up goal-setting and planning process. *It must be acknowledged that this approach is an "ideal" and is only sometimes used in the real world.*

In the many organizations that still plan in the tradition manner, there is no formal process for formulating goals and plans and then translating them into budgets. Instead, planning simply amounts to updating the prior period's budgets to take account of factors such as inflation and anticipated/planned changes in levels of operations.

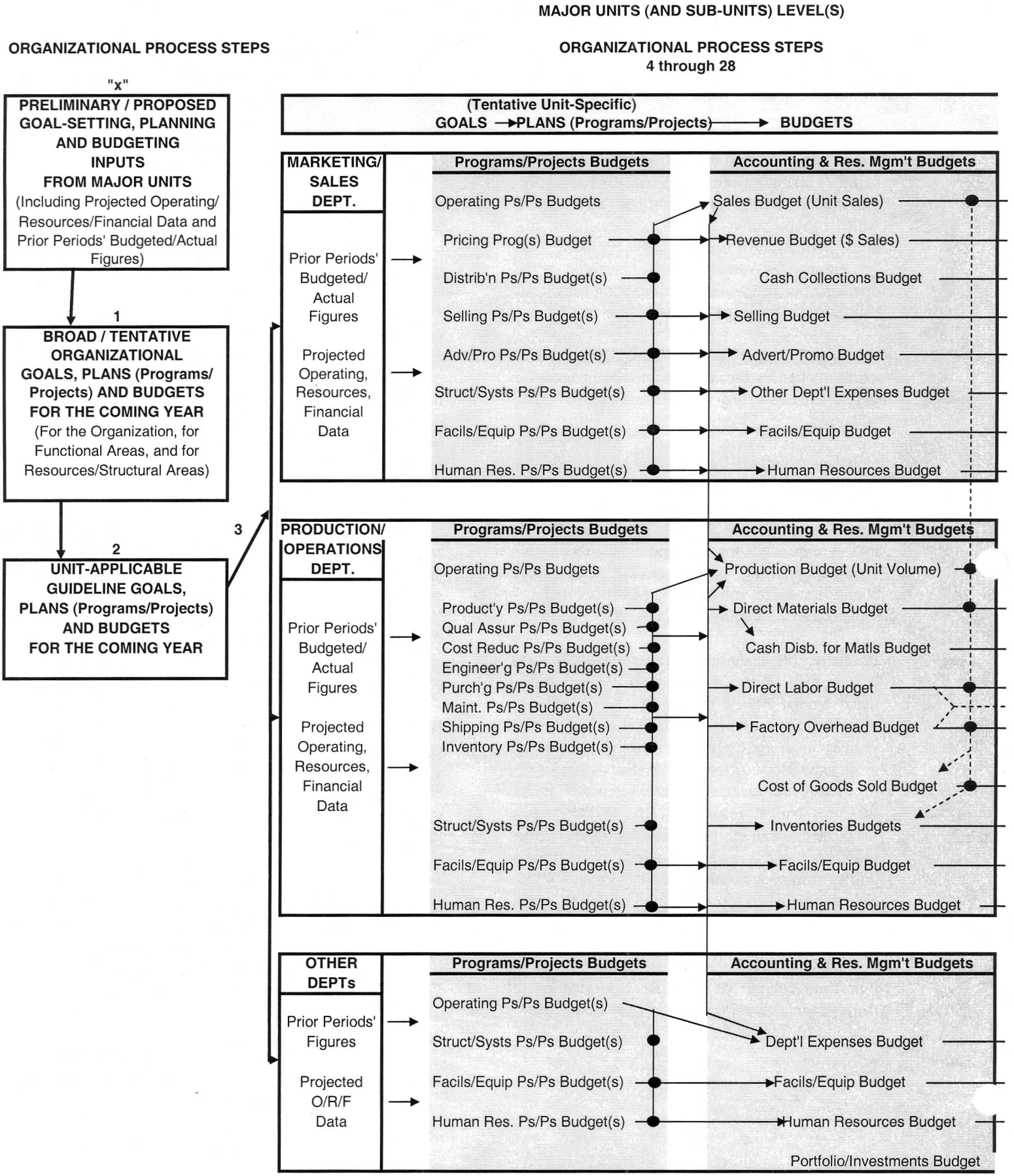
In the numerous organizations that still use traditional, authoritarian management practices, organizational and unit (goals/plans and) budgets are formulated and then promulgated by top management, which may or may not solicit budgetary proposals from major units. Unlike the top-down/bottom-up (participative) process described in Part IV (Planning), the traditional approach does not directly involve unit and sub-unit personnel in the goal-setting/planning/budgeting process.

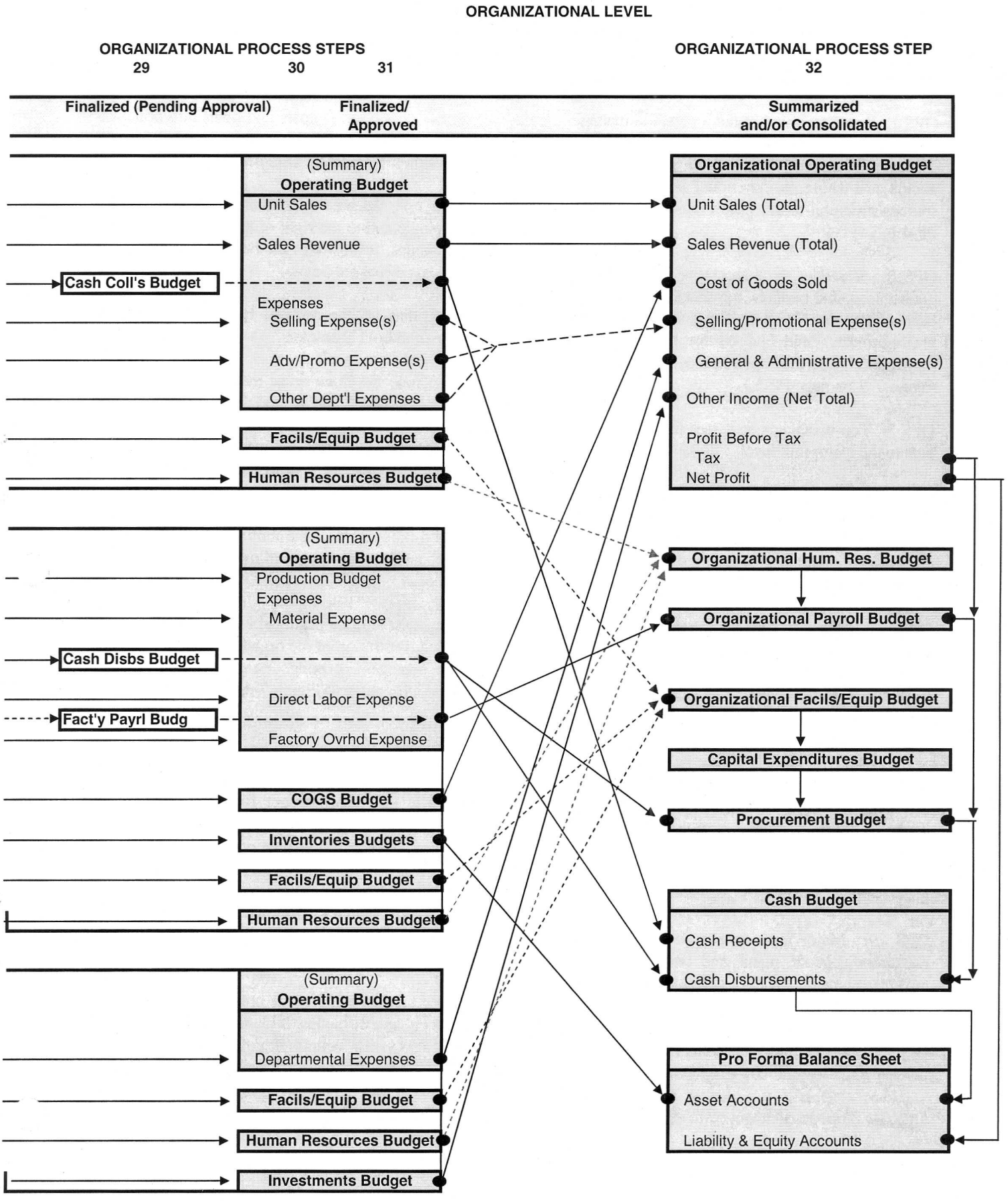
Because the figure illustrates so much about budgets, their interrelationships, and their relationships to the goal-setting/planning/budgeting process, we will walk the reader through it step by step. We begin doing so by relating it to Figures 7-A and 7-B (pages PP-4 and PP-5) and Figure 8 (page PP-6).

1. First, note the three high, shaded rectangles on the left side of page B-10 (under the top heading "Organizational Level"). Also note the Organizational Process Step ("OPS") designations above them. [Organizational process steps are illustrated in Figure 8 (page PP-6) and are described on pages PP-7 to PP-11.]

   OPS "X": Earlier we mentioned that, prior to organizational process Step 1, many organizations have their major units submit the following inputs

Figure 14: Basic Types of Budgets Prepared During An Annual Top-Down/Bottom-Up Goal-Setting, Planning, and Budgeting Process (in a Manufacturing Enterprise)




ORGANIZATIONAL LEVEL
ORGANIZATIONAL PROCESS STEPS
29
30
31
ORGANIZATIONAL PROCESS STEP
32
Finalized (Pending Approval)
Finalized/ Approved
Summarized and/or Consolidated
(Summary) Operating Budget
Unit Sales
Sales Revenue
Cash Coll's Budget
Expenses
Selling Expense(s)
Adv/Promo Expense(s)
Other Dept'l Expenses
Facils/Equip Budget
Human Resources Budget
(Summary) Operating Budget
Production Budget
Expenses
Material Expense
Cash Disbs Budget
Direct Labor Expense
Fact'y Payrl Budg
Factory Ovrhd Expense
COGS Budget
Inventories Budgets
Facils/Equip Budget
Human Resources Budget
(Summary) Operating Budget
Departmental Expenses
Facils/Equip Budget
Human Resources Budget
Investments Budget
Organizational Operating Budget
Unit Sales (Total)
Sales Revenue (Total)
Cost of Goods Sold
Selling/Promotional Expense(s)
General & Administrative Expense(s)
Other Income (Net Total)
Profit Before Tax
Tax
Net Profit
Organizational Hum. Res. Budget
Organizational Payroll Budget
Organizational Facils/Equip Budget
Capital Expenditures Budget
Procurement Budget
Cash Budget
Cash Receipts
Cash Disbursements
Pro Forma Balance Sheet
Asset Accounts
Liability & Equity Accounts

to the top management level: (a) preliminary/proposed goals, plans, and budgets; and (b) the previous period's budgetary figures (budgeted, actual, and variance figures).

OPS 1: Based on units' initial inputs, top management formulates broad/tentative goals, plans (programs/projects), and budgets for (a) the organization as a whole, (b) functional areas, and (c) resources/structural areas. [See Figure 7-A on page PP-4.]

OPS 2: Based on broad/tentative organizational goals, plans, and budgets, top management formulates unit-applicable guideline goals, plans (programs/projects), and budgets for major units/departments. [See the top note on the left side of Figure 7-B on page PP-5.]

OPS 3: Top management passes the guideline inputs to the major unit level.

2. Next, note the long, shaded rectangle that extends across the top of both pages. This represents the activities indicated in Figure 7-B on page PP-5. It also represents organizational process Steps 4 through 32, which are illustrated in Figure 8 on page PP-6.

   OP Steps 4 through 28: The major units/departments (and their sub-units) translate their unit/(sub-unit)-applicable guideline inputs into unit/(sub-unit)-specific goals, plans, and budgets. The upward- and downward-pointing bold arrows in the shaded rectangle represent the arrows in each of the panels in Figure 7-B. They signify that each unit's/(sub-unit's) goals, plans, and budgets can significantly influence other units'/(sub-units') goals, plans, and budgets—and that, therefore, all units/(sub-units) should coordinate their efforts as they formulate their unit/(sub-unit)-specific goals, plans, and budgets.

   OPS 29: Major units/departments finalize their unit-specific goals, plans, and budgets—pending top management review, possible modification, and approval.

   OPS 30: Major units/departments pass their "finalized" outputs up to top management.

   OPS 31: Top management reviews, perhaps modifies, finalizes, and approves units'/departments' respective sets of (goals, plans, and accompanying) budgets.

   OPS 32: Top management incorporates major units'/departments' goals and plans into organizational goals and plans. It summarizes and consolidates their budgets on organizational budgets.

3. Now note the area that is below the long, shaded rectangle and to the right of the three high, shaded rectangles. It illustrates the budgets and budgeting process discussed below.

   Note that all the various types of budgets are shown in bold characters.

   Also note the three areas that are [bracketed] by very bold lines and extend from page B-10 into page B-11. These areas group various budgets according to the units having them—i.e., marketing/sales department budgets; production department budgets; and other departments' budgets. Together, the three areas provide a much more detailed illustration of the unit/departmental budgets and budgeting process illustrated in the fourth panel of Figure 7-B on page PP-5.

   The right side of page B-11 provides a more detailed illustration of the organizational budgets and top management budgeting process illustrated in the fourth panel in Figure 7-A on page PP-4.

D. **Exhibits**

The exhibits in this section illustrate common, but not necessarily universal, budget formats. There are as many different budget formats as there are different industries and different organizations within them.

The ratios and percentages existing among the figures for various budgetary items/accounts differ from industry to industry and from organization to organization within an industry.

In general, when budgets are prepared for the coming year, they are formatted with one column for each month and a last column for the year-end total. At some point, the figures for the twelve months may be summarized into quarterly figures. Here we will show figures for each of the four quarters and a total figure

for the year. We will not include columns for "actual" and "variance" figures in most exhibits.

Although Exhibit K on page B-2 deals with a multi-product organization, the following exhibits deal with a single-product company for the sake of simplicity.

All the following exhibits contain fairly realistic figures for the various items/accounts listed. Exhibits involving summary and consolidated budgets indicate the sources (supporting budgets) from which certain figures have been derived.

E. **Assumptions**

Although social responsibility (goals/plans and) budgets are shown in Figures 7-A and 7-B, they are not discussed below. We have assumed that, as in many organizations, they have been incorporated into organizational and unit/departmental human resources (goals/plans and) budgets.

Although innovation (goals/plans and) budgets are shown in Figures 7-A and 7-B, they, too, are not discussed below. We have assumed that, as in many organizations, they have been incorporated into organizational and unit/departmental operating, facilities/equipment, structural/systems, and human resources (goals/plans and) budgets.

F. **Other Matters**

Level of detail: Since we advocate utilizing the participative, top-down/bottom-up approach described in this section, we discuss budgets, relationships among budgets, and budgeting steps at a level of detail that should enable a reader to (a) prepare better budgets, and (b) coordinate budgeting efforts more effectively with other units and personnel.

Accounting principles and practices: Since budgeting involves the application of various accounting principles and practices, we will discuss them when appropriate, but not in the detail found in accounting textbooks and references.

Generalizations: Because budgets can be formatted and prepared in many different ways, our discussions regarding the many types of budgets and their preparation will be somewhat generalized. For more detailed information regarding budgets and budgeting practices, we recommend that you consult the references listed in the bibliography.

For specifics regarding your own organization's budgets, budgeting steps, and accounting practices, we recommend that you consult with your finance or accounting department.

Program/Project Budgets in General

A. **Description**

We discuss these budgets first because they are the basic links or "bridges" between departmental plans (programs and projects) and virtually all other departmental budgets shown in Figure 14. They translate departmental programs/projects (and associated action plans) into financial terms. As indicated by the arrows following them, the figures they contain are inputs to the development of the departmental "accounting and resources management budgets" listed down the right side of page B-10.

Therefore, at the beginning of the budgeting process, a specific program/project budget should be prepared for each departmental program/project under serious consideration.

Note that departments' program/project budgets fall into four main areas that correspond to the types of programs/projects: Operating; structural/systems; facilities/equipment; and human resources. (Remember our assumption that social responsibility and innovation programs/projects have been incorporated into other programs/projects.)

Since a department can have more than one program/project in each of these four areas, it can have more than one program/project budget in each area.

B. **Format(s)**

Program/project bcan contain nonfinancial as well as financial items. Although different types of program/project budgets have different formats, many contain items such as those below. Many of these items are shown in the Sample Capital Project Budget in Exhibit M (next page).

1. Capital expenditures (net cash outflows) for any capital facilities/equipment required [See the investment cost section of Exhibit M.]

Exhibit M: Capital Program/Project Budget -- for Project X

Year:	2011	2012	2013	2014	2015	2016	2017
Investment Cost							
1 Cost of machinery/equipment	268,000						
2 + Cost to install machinery/equipment	12,000						
3 = Total (depreciable) M/E cost	280,000						
4 + Cost of plant/office facilities							
5 + Cost of land							
6 (-) Proceeeds from sale of replaced assets							
7 (-) Trade-in allowance on replaced assets							
8 (-) Debt Incurred to finance purchases[a]							
9 + Recapture of deprec'n on replaced assets							
10 = Net cash outflow on investment	280,000						
Investment Benefits							
(Annual) Income/Earnings							
11 New/additional sales revenue generated	20,000	25,000	30,000	35,000	40,000	45,000	50,000
12 + Cost reductions/savings realized	65,000	80,000	95,000	110,000	125,000	140,000	155,000
13 (-) New/additional operat'g costs incurred	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
14 (-) Depreciation expense	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)	(40,000)
15 (-) Interest expense[a]							
16 = Income/earnings before tax	40,000	60,000	80,000	100,000	120,000	140,000	160,000
17 (-) Income tax[b]	(20,000)	(30,000)	(40,000)	(50,000)	(60,000)	(70,000)	(80,000)
18 = Net (after-tax) income/earnings	**20,000**	**30,000**	**40,000**	**50,000**	**60,000**	**70,000**	**80,000**
(Annual) Cash Flow							
19 Net (after-tax) earnings (Line 18)	20,000	30,000	40,000	50,000	60,000	70,000	80,000
20 + Depreciation expense	40,000	40,000	40,000	40,000	40,000	40,000	40,000
21 + Net proceeds from disposal of assets							20,000
22 (-) Debt repayment[c]							
23 (-) Net increase in working capital[d]							
24 = **Net beneficial cash flow**	**60,000**	**70,000**	**80,000**	**90,000**	**100,000**	**110,000**	**140,000**

[a] Many practitioners do not enter figures on this line, because they do not use financing cost figures to calculate figures for certain financial criteria.

[b] Here we have assumed a combined federal/state tax rate of 50% (for the sake of simplicity).

[c] Debt repayments are often entered on this line in order to calculate "net cash flow" for cash budgeting purposes, but they are not taken into account when calculating "net beneficial cash flow."

[d] There are often figures on this line, because a sales increase usually requires an increase in working capital.

2. Any non-financial benefits of the program/project (in monthly or yearly columns)

    a. Any increase in production volume (units of output)
    b. Any increase in sales volume (unit sales)
    c. Any other type of increase in productivity or performance
    d. Any other type of non-financial benefit

3. Any financial benefits of the program/project (in monthly or yearly columns) [See lines 11 and 12 of the (annual) income/earnings portion of the investment benefits section of Exhibit M.]

    a. Any increased sales revenue generated
    b. Any cost savings realized

4. Any new or additional costs incurred (in monthly or yearly columns)

    a. Any significant installation or implementation costs
    b. Any significant start-up costs (R&D, production, selling, administrative)
    c. Any new/additional operating/usage costs incurred — for (1) personnel; (2) materials/supplies; (3) depreciation on new facilities/equipment; and (4) other expense items.

5. Any related cash flows (in monthly or yearly columns) [See lines 6 through 9 of the investment cost section, and lines 20 through 23 of the (annual) cash flow portion of the investment benefits section.]

    a. funds borrowed (to finance capital expenditures)
    b. principal repayments and interest payments

6. Financial results — such as (a) net (discounted) present value; (b) benefit/cost ratio; (c) payback period; and/or (d) return on investment

C. **Inputs** — Inputs to the preparation of various departmental program/project budgets include the following, some of which are indicated on page B-10:

    a. Guideline unit-applicable program/project budgets formulated by top management
    b. Unit-specific programs/projects formulated at the unit/departmental level
    c. Figures from the previous period's/periods' program/projects budgets
    d. Ratios/percentages among figures contained in the previous period's/periods' budgets
    e. Forecasts of results
    f. Marginal analyses (of incremental costs and/or revenues)
    g. Other financial analyses

D. **Outputs** — As indicated by the arrows to the right of these budgets in Figure 14, the figures they contain (their outputs) are inputs to the preparation of the various departmental "accounting and resources management budgets" listed to the right. We give examples below as we discuss the four basic types of program/project budgets.

Program/Project Budgets That Are Common to All Departments

The four basic types of program/project budgets are: operating program/project budgets; structural/systems program/project budgets; facilities/equipment (physical resources) program/project budgets; and human resources program/project budgets. All major units/departments should have at least one of all four types.

1. **Operating program/project budgets** — The most important of all four types of program/project budgets, these translate various operating programs/projects into financial (dollar) and other numerical terms. A particular operating program/project budget essentially contains figures for the benefits and costs associated with a particular operating program/project.

    As shown on page B-10, each major unit has its own unit-applicable set of operating program/project budgets. *Examples:* The marketing department has program/project budgets that correspond to various types of marketing programs/projects—e.g.: pricing; advertising/promotion; selling; and distribution. The production department has program/project budgets that correspond to various types of production programs/projects—e.g.: productivity; quality assurance; cost reduction; purchasing; engineering; maintenance; inventories; and shipping. [We discuss the marketing and production departments' operating program/project budgets under "marketing department budgets" and "production department budgets" (respectively).]

A. Format — An operating program/project budget can contain figures for any applicable or appropriate items listed at the top of page B-15.

B. Inputs — These can include items "a" through "g" beginning at the bottom of page B-15.

C. Outputs — As shown on page B-10 of Figure 14, the figures contained in units' operating program/project budgets are used as inputs to the formulation of the following:

1. Structural/systems, facilities/equipment, and human resources program/project budgets because these budgets involve the resources necessary to support operating programs/projects); and
2. various departmental accounting and resources management budgets.

2. **Structural/systems program/project budgets** — These translate structural/systems programs/projects into dollar and other numerical terms. A particular structural program/project budget essentially contains figures for benefits and costs associated with a particular program/project involving either (a) a unit's modification of its structure, or (b) an organizational structure modification that affects a unit. A particular systems program/project budget essentially contains figures for benefits and costs associated with either (a) a unit's modification of an internal system, or (b) an organizational system modification that affects a unit.

A unit may have only one such program/project budget (if it has only one structural/systems program/project), or it may have several (if it has several programs/projects).

A. Format — A structural/systems program/project budget can contain figures for any applicable or appropriate items listed at the top of page B-15.

B. Inputs — These can include the items listed in "a" through "g" on page B-15.

C. Outputs:

1. Costs (figures for expense items) are generally carried forward to appropriate items/accounts in a unit's (other) departmental expenses budget.
2. Figures for any facilities/equipment requirements, expenses, and capital expenditures involved may be recapped/summarized on a unit's facilities/equipment budget.
3. Figures for any human resources requirements or expenses involved may be summarized on a unit's human resources budget.
4. As shown in Figure 14, any aspects of these budgets that affect operational efficiencies and costs should be reflected in the appropriate accounting budgets.

3. **Facilities/equipment program/project budgets** — These budgets translate facilities/equipment programs/projects into dollar and other numerical terms. A particular facilities/equipment program/project budget essentially contains figures for benefits, expenditures, and costs associated with a particular facilities/equipment program/project, which can involve one (or possibly more) of the following: (a) land procurement or improvement; (b) plant construction or expansion; (c) major equipment procurement and installation; (d) major equipment modification; (e) major reengineering/relocation of equipment; or (f) installation or major modification of utilities hardware.

A unit may have only one such program/project budget (if it has only one facilities/equipment program/ project), or it may have several (if it has several facilities/equipment programs/projects). In general, a unit is more likely to have such program/project budgets if (a) its operations are capital-intensive, (b) its facilities and equipment are costly, and (c) it uses a substantial portion of the company's physical assets.

A. Format — A facilities/equipment program/project budget often contains figures for all of the items listed at the top of page B-15.

B. Inputs — These can include all of the items listed in "a" through "g" on page B-15.

C. Outputs:

1. Figures for benefits, costs, and capital expenditures in all of a unit's facilities/equipment program/project budgets are usually recapped/summarized and then consolidated (totalled) in the unit's facilities/equipment budget.

2. Any human resources requirements or expenses involved may be recapped/summarized on a unit's human resources budget.
3. As shown in Figure 14, any aspects of these budgets that affect operational efficiencies and costs should be reflected in the appropriate departmental accounting budgets.

4. **Human resources program/project budgets** — These budgets translate human resources programs/projects into dollar and other numerical terms. A particular human resources program/project budget essentially contains figures for benefits and costs associated with a particular human resources program/project, which can involve one (or possibly more) of these and other areas: (a) restructuring the unit; (b) staffing the unit; (c) compensating personnel; (d) improving personnel's technical/ professional skills; (e) improving managerial and supervisory skills; (f) improving working conditions; (g) modifying managerial/supervisory practices; and/or (h) modifying or improving working relationships.

   A unit may have only one such budget (if it has only one human resources program/project), or it may have several (if it has several human resources programs/projects). In general, a unit is more likely to have such program/project budgets if (a) its operations are personnel-intensive, and (b) it utilizes a substantial portion of the organization's human resources.

   A. Format — A human resources program/project budget can contain figures for any applicable or appropriate items listed at the top of page B-15.

   B. Inputs — These can include all of the items listed in "a" through "g" on page B-15.

   C. Outputs:

      1. The figures in all of a unit's human resources program/project budgets are normally recapped/summarized and totalled in the unit's human resources budget.
      2. Any facilities/equipment requirements, expenses, and capital expenditures involved may be recapped or summarized on a unit's facilities/equipment budget.
      3. As shown in Figure 14, any aspects of these budgets that affect operational efficiencies and costs should be reflected in the appropriate departmental accounting budgets. For example: Personnel cost figures are inputs to the following: a marketing department's selling budget and other departmental expenses budget; a production department's direct labor budget, indirect labor budget, factory overhead budget, and factory payroll budget; and other departments' departmental expenses budgets.

Several process-related perspectives pertaining to all program/project budgets

The rather complicated process of preparing program/project budgets and then using the figures they contain to formulate departmental accounting and resources management budgets is usually further complicated by several other budgeting phenomena:

1. As a result of translating programs/projects into "dollarized" requirements, benefits, and costs, a department will often determine that certain programs/projects—and even goals—need revising in order to take account of tradeoffs and/or incompatibilities among the requirements, benefits, and costs of various programs/projects. In turn, the revision of goals and programs/projects usually requires the revision of program/project budgets. This cycle of revisions may be repeated several times before a department's program/project budgets are fine-tuned and mutually compatible.

2. In the process of formulating departmental accounting and resources management budgets based (partly) on figures contained in program/project budgets, a department will often determine that program/project budgets (and perhaps even goals and programs/projects) need (further) revision. This initiates additional cycles of revisions.

3. Most units' programs/projects, associated program/project budgets, and departmental accounting and resources management budgets are highly interrelated. Those being developed in one unit can significantly affect those being developed in other units. For example:

   A marketing/sales department's unit sales and sales revenue budgets are largely influenced by its pricing program(s) and associated pricing program budget(s)—which, in

turn, are largely influenced by the production department's "per unit product costs" at various levels of production. On the other hand, a production department's "per unit cost" (which is calculated based on several production expense budgets) is largely influenced by its production volume budget—which, in turn, is largely influenced by the marketing/sales department's unit sales budget.

Other departments' expenses, facilities/equipment, and human resources budgets are largely influenced by the levels of operations reflected in the marketing department's sales budget and the production department's production budget.

Therefore, in order to minimize intradepartmental revisions and the "rippling" of interdepartmental revisions caused by relationships among departments' budgets, all units should . . .

1. very carefully prepare their own program/project budgets and accounting/resources budgets; and
2. closely coordinate their budgeting efforts with other departments, taking organizational process Steps such as 5 and 28 in Figure 8, page PP-6.

Expense Budgets in General

We discuss expense budgets at this point for two reasons: First, many of the departmental accounting budgets discussed below are expense budgets. They are named according to the types of department-related expense items they contain—e.g., selling (expense) budget, advertising/promotion (expense) budget, direct materials (expense) budget, direct labor (expense) budget, factory overhead (expense) budget, and (other) departmental expenses budget. Second, operating budgets and resources management budgets usually contain expense sections.

A. **Basic description and related definitions**

Expense budgets contain figures for the planned/estimated expenses (costs) to be incurred with respect to various expense items/accounts.

Expenses — costs that are incurred as a result of operations or activities conducted during a period, and, therefore, are "expensed" ("charged against" or subtracted from the revenue generated during that period) in order to calculate profit (and taxes) for that period. [Revenue - Expenses = Profit or a (Loss).]

Expense items/accounts — particular cost items or accounts, each of which is named according to a particular type of resource or input that is consumed, employed, or used up during operations. Examples of expense items are: direct labor costs, indirect labor costs, materials/parts costs, rental/lease expenses, utilities expenses, travel and entertainment expenses, production/shop supplies costs, office supplies costs, non-depreciable equipment costs, advertising expenses, salesforce expenses, telephone charges, professional service charges, training costs, executive salaries, and office personnel expense.

Depreciation is also an expense item. When a major physical asset (capital asset) such as a plant facility or major piece of equipment is purchased, its cost is not fully expensed during the year in which it was purchased (because the asset will be used over a number of years rather than being "consumed" in just one year). Instead, the asset's purchase cost is (1) "capitalized" (added to a balance sheet asset account), and then (2) "depreciated" (expensed or "written off") over the number of years of the asset's usable (or at least legally depreciable) life. If the straight-line method of depreciation is used, the asset's annual depreciation is calculated by simply dividing the purchase cost by the number of years of the asset's depreciable life. If one of several accelerated depreciation methods is used, more depreciation is expensed during the early years of the asset's life.

Variable cost — a cost that varies (increases or decreases) with the level of operations or activities. A good example is material cost. As an increasing number of product units is produced, an increasing material cost is incurred. Conversely, as a decreasing number of product units is produced, a decreasing material cost is incurred.

Fixed cost — a cost that tends to remain constant regardless of the level of operations or activities. Organizational overhead costs (such as corporate office rent, top executives' salaries, and other ex-

penses associated with corporate offices) are considered fixed costs—as are factory overhead costs (such as plant and machinery depreciation and the salaries of production department professional staff and middle management personnel). (These costs are considered "fixed" even though they may change or be changed over time.)

Direct (or variable) costing method: In those few organizations where this cost accounting method is still used, only (directly incurred) variable costs are charged to either (a) a unit's expense budget, or (b) a product's cost.

Absorption (or full) costing method: In the increasing number of enterprises that use this cost accounting method, all variable costs and all (indirectly incurred) fixed (overhead) costs are charged to either (a) a unit's expense budget, or (b) a product's cost.

Corporate overhead expenses (fixed costs incurred at the corporate level) are "allocated" (prorated and charged or "distributed") to units and products based on, for example, (a) number of personnel, (b) space utilization, or (c) output volume. Prorated portions of corporate overhead expenses are included on a production department's factory overhead expense budget (along with departmental fixed costs) so that the computation of any product's unit cost will reflect all costs that can be properly associated with the production of each unit of that product. Prorated portions of corporate overhead expenses are often included on other department's expense budgets so that they will reflect a (fair) share of those expenses.

Units' expense budgets can also contain "user charges"—i.e., those expenses of a department (such as data processing) that are charged to user departments based on, for example, (a) usage time, (b) percentage of total reports received, or (c) workhours per report received. User charges are often included on units' expense budgets so that unit managers and their personnel will be more aware of, and will better manage their use of, the resources being made available to them.

B. **Inputs** — Figures contained in these budgets are derived from several sources:

1. Unit-applicable guideline expense budgets formulated by top management
2. Expense item figures on relevant program/project budgets
3. the corporate general & administrative expense budget
4. Figures from the previous period's/periods' budgets
5. Ratios/percentages among figures contained in the previous period's/periods' budgets
6. Other financial analyses

C. **Outputs** — As shown in Figure 14, figures contained in expense budgets are outputs to summary departmental budgets (such as departments' summary operating budgets)—which, in turn, provide inputs to the preparation of summary and consolidated organizational budgets.

Marketing/Sales Department Budgets

1. **Marketing/sales department program/project budgets**

The general description of program/project budgets (on pages B-13 and B-15) applies to this department's program/project budgets.

A. Marketing/sales department operating program/project budgets: This department has several types of operating program/project budgets that other departments do not have:

Pricing program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, pricing programs and discounts/allowances programs.

Selling program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, increasing/decreasing the size of the salesforce, altering salary and commission formulas, increasing/decreasing the number of sales offices, and increasing/decreasing the number or cost of selling aids.

Advertising/promotional program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, changing the promotional approaches used in various media,

Exhibit N: XYZ Company (Marketing Department) Sales Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	Projected sales (units)	36,500	37,500	37,500	38,500	150,000
2 (x)	Unit sales price ($200 ea.)	(x) $200	(x) $200	(x) $200	(x) $200	(x) $200
3 (=)	Gross sales revenue ($s)	7,300,000	7,500,000	7,500,000	7,700,000	30,000,000
4 (-)	Sales discounts[a] ($s)	(146,000)	(150,000)	(150,000)	(154,000)	(600,000)
5 (-)	Freight allowances[b] ($s)	(73,000)	(75,000)	(75,000)	(77,000)	(300,000)
6 (=)	**Net sales revenue ($s)**	**7,081,000**	**7,275,000**	**7,275,000**	**7,469,000**	**29,100,000**

Assumptions based on historical data:
[a] 2% of gross sales revenue
[b] 1% of gross sales revenue

Exhibit O: XYZ Company (Marketing Department) Cash Collections (from Sales) Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
7	Accounts receivable (12/31/2011)	1,979,250				1,979,250
8 (+)	1st Qrtr collections	4,956,700	2,053,490			7,010,190
9 (+)	2nd Qrtr collections		5,092,500	2,109,750		7,202,250
10(+)	3rd Qrtr collections			5,092,500	2,109,750	7,202,250
11(+)	4th Qrtr collections				5,228,300	5,228,300
12(=)	**Total cash collections**	6,935,950	7,145,990	7,202,250	7,338,050	28,662,240

Assumptions based on historical collection data:
70% of a quarter's sales are collected during the quarter of sale.
29% of a quarter's sales are collected in the quarter following the quarter of sale.
1% of a quarter's sales are uncollectible.

29% of a quarter's sales constitute "accounts receivable" at the beginning of the the next quarter. Thus, 29% of the 4th quarter's sales constitute "accounts receivable" at the beginning of the next budgetary year.

improving the production of commercials or advertisements, and increasing/decreasing advertising expenditures in various types of media.

Distribution program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, modifying warehousing and shipping practices, using new channels of distribution, increasing/decreasing the use of certain channels, and increasing/decreasing the costs associated with certain channels.

The preparation of the above program/project budgets should take account of trade-offs among the benefits and costs of the various types of programs/projects. In other words, ask, for example, How much more sales would be generated by a dollar-per-unit decrease in price—versus a dollar-per-unit increase in advertising—versus a dollar-per-unit increase in sales effort—versus a dollar-per-unit increase in channel of distribution costs?

B. Resources/structural program/project budgets — See pages B-16 and B-17 for general descriptions of structural/systems, facilities/equipment, and human resources program/project budgets, which are common to all departments.

C. Format — A marketing/sales department program/project budget can contain any items at the top of page B-15 that are applicable/appropriate.

D. Inputs — See the list "a" through "g" on page B-15.

E. Outputs — As indicated by the arrows on page B-10 of Figure 14, the output figures contained in these budgets are inputs to the preparation of the departmental accounting and resources management budgets discussed below.

2. **Sales budget** — This type of budget normally contains both nonfinancial (# unit sales) figures and financial ($ sales revenue) figures. [See the example of a single-product/service sales budget in Exhibit L. For an example of a multi-product/service sales budget, see Exhibit K on page B-2.]

A. Description and Format

Unit sales budget — The top portion of a sales budget contains unit sales figures, which indicate the projected/planned number of units of products or services to be sold. These figures are based on forecasts of unit sales. In a more detailed sales budget than the example in Exhibit N, unit sales figures (Row 1) can be shown by month or quarter under various possible combinations of these and other headings: (a) product/service groups (and specific products/services under each group); (b) geographic areas; and (c) types of customers. A sub-total is usually shown beneath each heading (grouping). A total or grand total is usually shown at the bottom. [Also see Exhibit K on page B-2.] Unit sales figures are used to calculate sales dollars.

Sales revenue — The bottom portion of a sales budget contains revenue figures, which are translations of unit sales into dollar sales. In a single-product/service enterprise, the monthly or quarterly gross sales revenue figures (Row 3 in Exhibit L) are calculated by multiplying the monthly or quarterly number of units (Row 1) by the unit price (Row 2). In a multi-product/service enterprise, monthly or quarterly gross sales revenue figures are calculated by multiplying each product's/service's unit sales by its unit price, and then adding the results for all products/services. [Also see Exhibit K on page B-2.]

B. Inputs — A unit sales budget should contain figures that reflect the results of an over-all or total marketing effort. In other words, the figures should take into account (a) the projected sales resulting from existing (normal/standard/on-going) marketing efforts (which include previously implemented programs/projects); and (b) the projected additional sales resulting from the implementation of any new marketing programs/projects.

As shown in Figure 14, these are important inputs to the formulation of a unit sales budget:

1. the guideline sales budget formulated by top management
2. the last period's unit sales figures — and trends in those figures
3. forecasts of anticipated increases or decreases in sales due to the economy, market demand, competitive practices, and other environmental and industry factors

4. projected (additional) sales figures contained in the pricing, selling, advertising/promotion, distribution, structural/systems, facilities/ equipment, and human resources program/ project budgets

C. Outputs

1. As shown by the two horizontal arrows that extend from page B-10 into page B-11 of Figure 14, unit sales and sales revenue figures are usually summarized on a marketing department's operating budget.

2. As shown by the vertical line and arrows on page B-10, desired/projected unit sfigures tend to influence figures in . . .

   a. the sales revenue b
   b. the departmental/(organizational) cash collections budget
   c. the departmental selling (expense) budget
   d. the departmental advertising and promotion (expense) budget
   e. the departmental other expenses budget
   f. the departmental facilities/equipment budget
   g. the departmental human resources budget
   h. the production department's production (units) budget
   i. other production department budgets
   j. other departments' operating levels, and, therefore, their various budgets

D. Departments having sales budgets: In most organizations, the only unit to have a Sales Budget is the marketing or sales department. However, some organizations have certain other units that sell products or services to outside customers, and, therefore, may also have their own sales budgets. (In general, such units are less likely to be true revenue and/or profit centers.)

3. **Cash collections budget** — Although sales may occur during a particular month, customers may not actually pay their bills for another thirty, sixty, or more days. In fact, a small percentage of bills are uncollectable (are "bad debts"). This budget indicates the projected total cash collections (payments by customers) during each month (or quarter).

A. Format — See the budget in Exhibit O (page B-20) as an example.

B. Inputs — The (projected) figures on a cash collections budget are generally based on historical collection data and an "aging of accounts analysis." [See the assumptions at the bottom of Exhibit O.] They can also be affected by new marketing department or organizational credit policies, payment policies, and payment terms.

C. Outputs — As shown on page B-11 of Figure 14, the total cash collections figures are carried forward to the cash receipts section of the organization's cash budget.

4. **Selling (expense) budget** — This budget indicates expenses that are incurred by or associated with a salesforce. [In general, selling expenses are considered fixed costs. However, certain items—such as salesforce commissions/bonuses—are considered variable cost items.]

A. Format — These and other selling expense items may be shown: geographic managers' compensation, salespersons' compensation, the costs of selling aids, salesforce training costs, expenses associated with shows and expositions, telephone charges attributable to salesforce personnel, and salespersons' travel and entertainment expenses. In a detailed selling budget, certain items may be broken down by categories of salespersons, sales territories, product/service groups (and specific products/services), types of selling aids, types of shows/expositions, and other categories.

B. Inputs — As shown in Figure 14, the primary sources of selling expense figures are:

1. the guideline selling budget formulated by top management
2. expense figures from the previous period's/ periods' selling expense budget(s)
3. expense figures in one or more selling program(s)/project(s) b(s)
4. the calculation of selling cost per unit sold (based on recent data)

C. Outputs — As shown in Figure 14, figures for items in the selling budget are carried forward to and summarized in the marketing/sales department's operating budget (if the department prepares one). [See Exhibit P.] In turn, selling expense figures in the marketing/sales department's operating budget are carried forward to and further summarized in the organizational operating budget. [See Exhibit W on page B- 42.] (If the department does not prepare a summary operating budget, selling budget figures are directly carried forward to and summarized in the organization's operating budget.)

5. **Advertising/promotion (expense) budget** — This budget deals with expenses that are associated with advertising and promotional efforts. (Such expenses are generally considered fixed costs.)

   A. Format — These and other advertising/promotion expense items may be shown: catalog/brochure expenses, the cost of commercials on broadcast media (TV and radio), the cost of advertisements in print media (newspapers and magazines), expenses associated with direct mail promotions, expenses associated with the production of ads and commercials, the cost of point of sale displays, and postage (for direct mail and catalogs). In a detailed budget, certain items may be broken down by geographic region, product or service groups (or specific products/services), types of media utilized, and other categories.

   B. Inputs — As shown in Figure 14, the primary sources of these expense figures are:

      1. the guideline advertising/promotion budget formulated by top management
      2. expense figures from the previous period's/ periods' ad/promo budget(s)
      3. expense figures in one or more ad/promo program(s)/project(s) budget(s)
      4. the calculation of ad/promo cost per unit sold (based on recent data)

   C. Outputs — As shown in Figure 14, items in the ad/promo budget are carried forward to and summarized in the marketing/sales department's operating budget (if the department prepares one). [See Exhibit P on page B-24.] In turn, operating budget advertising/promotion expense figures are carried forward to and further summarized in the organizational operating budget. [See Exhibit W on page B-42.] (If the department does not prepare a summary operating budget, advertising/ promotion budget figures are directly carried forward to and summarized in the organization's operating budget.)

6. **Other departmental expenses budget** — This contains figures for expenses associated with "departmental overhead" items involving (a) the internal administration of the department, and (b) other (non-selling and non-promotional) aspects of the department's operations. [Most of these expenses are considered fixed costs. However, certain items (such as employment taxes and employee benefits) are normally considered variable costs.]

   A. Format — These and other expenses may be shown: sub-unit managers' compensation, professional staff members' compensation, secretarial/ clerical personnel's compensation, office supplies and equipment expenses, office rent (if office space is rented), main sales office telephone and postage expenses, distribution and warehousing expenses, and departmental employment taxes and employee benefits.

   B. Inputs — As shown in Figure 14, sources of other expenses figures include:

      1. the guideline other departmental expenses budget formulated by top management
      2. expense figures from the previous period's/ periods' other expenses budget(s)
      3. expense figures from structural/systems program(s)/project(s) budget(s)
      4. expense figures from distribution/warehousing program(s)/project(s) budget(s)
      5. the calculation of other costs per unit sold (based on recent data)

   C. Outputs — As shown in Figure 14, figures for expense items in this budget are carried forward to and summarized in the marketing/sales department's (summary) operating budget (if the department prepares one). [See Exhibit P.] In turn, other expenses figures in the department's operating budget are carried forward to, and further summarized in, the organization's operating budget. [See Exhibit W on page B-42.) (If the depart-

Exhibit P: Marketing Department (of XYZ Company) Operating Budget (2011)

Row #	(All figures in 000s Units/$s)	1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	**UNIT SALES**	36.5	37.5	37.5	38.5	150.0
2	**GROSS SALES REVENUE**	7,300	7,500	7,500	7,700	30,000
3	Sales discounts	(146)	(150)	(150)	(154)	(600)
4	Freight allowances	(73)	(75)	(75)	(77)	(300)
5 (-)	TOTAL DISC/ALLOW:	(219)	(225)	(225)	(231)	(900)
6 (=)	**NET SALES REVENUE**	**7,081**	**7,275**	**7,275**	**7,469**	**29,100**
	EXPENSES					
	Advertising/Promotion Expenses					
7	Catalogs/brochures/postage	140	20	20	20	200
8	Point of purchase displays	150	50	50	50	300
9	Broadcast media advert'g (co-op)	20	25	25	30	100
10	Print media advertising (co-op)	100	125	125	150	500
11(+)	TOTAL ADV/PRO EXPENSE	410	220	220	250	1,100
	Selling Expenses					
12	Reg'l managers' compensation	58	58	58	59	233
13	Salespersons' compensation	329	333	333	337	1,332
14	Samples & other selling aids	60	10	15	15	100
15	Telephone	5	17	17	21	70
16	Travel/entertainment	150	200	200	250	800
17	Shows/exhibitions	40	50	50	60	200
18	Salesforce training/conferences	25	10	20	10	65
19(+)	TOTAL SELLING EXPENSE	677	678	693	752	2,800
	Other Marketing Dept. Expenses					
20	Mid-mgm't & staff compensation	62	62	62	62	248
21	Office personnel compensation	75	75	75	75	300
22	Employment taxes (all pers.)	58	58	58	59	233
23	Employee benefits (all pers.)	31	31	31	31	124
24	Office supplies & equipment	6	6	6	6	24
25	Telephone & postage (hdqrtrs)	8	9	10	11	38
26	Warehousing contracts	80	80	80	80	320
27	Miscellaneous	6	6	6	6	24
28(+)	TOTAL OTHER EXPENSES	326	327	328	330	1,311
29(=)	**TOTAL DIRECT EXPENSES**	1,413	1,225	1,241	1,332	5,211
	Charged (Corp. G&A) Expenses					
30	Executive/admin compensation	60	60	60	62	242
31	Information system usage	9	9	9	9	36
32	Rent/utilities/deprec. & other	39	39	39	41	158
33(+)	**TOTL CHARGED EXPENSES**	108	108	108	112	436
34(=)	**TOTAL EXPENSES**	**1,521**	**1,333**	**1,349**	**1,444**	**5,647**

ment does not prepare an operating budget, other expenses figures are directly carried forward to and summarized in the organization's operating budget.)

7. **Marketing/sales department operating budget —** This budget reviews a marketing/sales department's operations on a single document. It summarizes items and associated figures contained in the more detailed (supporting) sales and expenses budgets. Since the supporting budgets are the ones actually used to manage operations and resources, and since they can be used to provide inputs to the organization's operating budget, it is not absolutely necessary to prepare this summary budget. Thus, while it is prepared in many organizations, it is not prepared in all organizations.

   A. Format — Exhibit P is an example.

      Sales section: This indicates total figures for unit sales and sales revenue (rather than breaking these items down by, for example, territories or product/service groups).

      Direct expenses section: Likewise, this indicates total figures for advertising/promotion, selling, and other expenses (rather than breaking them down by, for example, territories or product/service groups).

      Charged expenses section: This contains figures 3for prorated portions of corporate general and admin expenses (overhead expenses) that are being allocated to the marketing/sales department. In Exhibit P, the department is being charged for its (prorated) share of corporate-level executive and office personnel salaries, information system utilization, and various other G&A items (one of which is depreciation on the department's share of office space owned by the company). (These figures can be calculated and entered once organizational G&A expenses have been calculated.)

      If a marketing/sales unit is a subsidiary profit-making and tax-paying corporation, it also indicates a "bottom line" after-tax profit or (loss).

   B. Inputs — The departmental operating budget should contain figures that reflect overall results. In other words, the figures should account for (a) the projected results of on-going operations, and (b) the projected results of any new programs/projects. (If the sales and expense budgets reflect these results, then their summarization on the operating budget should automatically reflect them.)

      As shown in Figure 7-B (page PP-5) and in Figure 14, a marketing/sales dOperating budget is prepared based on the following inputs (to Exhibit P):

      1. the guideline departmental operating budget formulated by top management
      2. *Projected unit sales* (**Row 1**) **—** from the sales budget (Row 1, Exhibit N)
      3. *Gross sales revenue* (**Row 2**) **—** from the sales budget (Row 3, Ex. N)
      4. *Discounts/allowances* (**Rows 3 & 4**) **—** from the sales budget (Rows 4 & 5, Ex. N)
      5. *Net sales revenue* (**Row 6**) **—** from the sales budget (Row 6, Ex. N)
      6. *Advertising/promotion expenses* (**Rows 7-10**) **—** from the advertising/promotion budget
      7. *Selling expenses* (**Rows 12-18**) **—** from the selling budget
      8. *Other departmental expenses* (**Rows 20-27**) **—** from the other expenses budget
      9. *Charged (Corp. G&A) expenses* (**Rows 30-32**) **—** from the organizational G&A budget

   C. Outputs — As indicated on page B-11 of Figure 14, all marketing/sales department operating budget figures are used to prepare the organizational operating budget. Figures for *total unit sales* and *total sales revenue* are directly carried forward. *Selling expense*, *advertising/promotion expense*, and *other departmental expense* items (and associated figures) are normally carried forward in a summarized format.

The facilities/equipment and human resources budgets of all departments are discussed in a separate section below.

Exhibit Q: XYZ Company (Production Department) Production Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	Projected unit sales	36,500	37,500	37,500	38,500	150,000
2 (+)	Desired ending inventory[a]	3,750	3,750	3,850	3,900[b]	3,900
3 (-)	Beginning inventory[c]	(3,650)	(3,750)	(3,750)	(3,850)	(3,650)
4 (=)	Production volume (units)	36,600	37,500	37,600	38,550	150,250

Assumptions:

[a] 10% of the next quarter's sales

[b] Estimated

[c] Same as the previous quarter's ending inventory

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

Note the rather slight differences between the unit sales and production volume figures so as not to confuse these figures when examining subsequent exhibits.

Production Department Budgets

1. **Production department program/project budgets**

The general description of program/project budgets (on pages B-13 and B-15) applies to a production department's program/project budgets.

A. Operating program/project budgets: A production department can have various types of operating program/project budgets, many of which are not common to other departments.

Productivity program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, changes in performance standards, work schedules, and work procedures. It should be noted that other program/project budgets mentioned in this section can also reflect attempts to improve productive efficiency.

Quality assurance program(s)/project(s) budgets(s), which contain(s) figures for benefits and costs associated with programs/projects aimed at improving product/service quality. It should be noted that there may be trade-offs between quality and both productivity and cost reduction.

Cost reduction program(s)/project(s) budgets(s), which contain(s) figures for benefits and costs associated with, for example, waste reduction and performance improvement programs. It should be noted that other program/project budgets mentioned in this section can also reflect attempts to reduce costs.

Engineering program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, improvements in machine design, process design, work area layout, machine placement, machine utilization, and materials handling practices.

Purchasing program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, changes in sources and in purchasing practices.

Maintenance program(s)/project(s) budgets(s), which contain(s) figures for benefits and costs associated with, for example, preventive maintenance and spare parts programs.

Warehousing/inventory program(s)/project(s) budget(s), which contain(s) figures for benefits and

costs associated with, for example, improvements in warehousing, materials handling, and inventory control practices.

Shipping program(s)/project(s) budget(s), which contain(s) figures for benefits and costs associated with, for example, improvements in sales-production-customer coordination, carrier selection, and packaging, scheduling, and routing practices.

B. Resources/structural program/project budgets — See pages B-16 and B-17 for general descriptions of structural/systems, facilities/equipment, and human resources program/project budgets, which are common to all departments.

C. Format — Production department program/project budgets can contain any items on the left of page B-15 that are applicable or appropriate.

D. Inputs — See items "a" through "g" on page B-15.

E. Outputs — As indicated by arrows on page B-10 of Figure 14, the figures contained in these budgets are used to prepare the departmental accounting and resources management budgets discussed below.

2. **Production budget** — This nonfinancial budget contains figures for the planned number of units to be produced—or number of units or volume of production.

A. Format — Exhibit Q is a simplified example, because it deals with only one product. A multi-product production budget would be broken down by product groups and would indicate the same four rows of figures for each individual product.

B. Inputs — As shown in Exhibit Q and Figure 14, this budget's preparation is mostly based on projected figures for unit sales and beginning and ending (levels of) finished goods inventories, but the figures are also influenced either directly or indirectly by other factors included among the following inputs (to Exhibit Q):

1. the guideline production budget formulated by top management
2. *Projected unit sales* (**Row 1**) — from the sales budget (Row 1, Exhibit N)
3. *Desired ending inventory of finished goods* (**Row 2**) — the level of the ending inventory of finished goods desired by the sales and/or production departments (See Assumption "a.")
4. *Beginning inventory of finished goods* (**Row 3**) — for the 1st quarter, from the previous budgetary period's organizational balance sheet (and/or physical inventory of finished goods); for other quarters, from the previous quarter's ending inventory figure
5. the effects of departmental programs/projects on production capabilities and costs
6. organizational funds, which influence facilities/equipment decisions that affect production capacity and costs
7. the effects of production costs on prices and unit sales
8. the organization's profit goal, the attainment of which is largely affected by production costs

C. Outputs — Once the production budget has been prepared, the next eight budgets can be prepared based on production volume igures: the direct materials budget, the cash disbursements for materials budget, the direct labor budget, the factory overhead budget, the departmental operating budget (if any), the factory payroll budget, the cost of goods sold budget, and the ending inventories budgets.

Because of the significant relationships between the sales budget and the production and production costs budgets, the formulation of these budgets should be inter-departmentally coordinated.

3. **Direct materials budget** — This budget contains both dollar and non-dollar figures associated with materials (raw materials and/or parts) inputs to the production process.

A. Format — Exhibit R (next page) is a simplified example, because it deals with only one product and only one material input required to make that product. The following steps apply to this Exhibit: First, Rows 1 through 3 are used to calculate the figures for (total) materials requirements. Second, Rows 3 through 6 are used to calculate the figures for purchasing requirements (taking into account beginning and ending inventories of materials).

Exhibit R: XYZ Company (Production Department) Direct Materials Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	**Projected production (units)**	36,600	37,500	37,600	38,550	150,250
2 (x)	Materials input per unit (lbs)	(x) 30	(x) 30	(x) 30	(x) 30	(x) 30
3 (=)	**Materials requirements (lbs)**	1,098,000	1,125,000	1,128,000	1,156,500	4,507,500
4 (+)	Desired ending inventory of materials[a]	112,500	112,800	115,650	117,450[b]	117,450
5 (-)	Beginning materials inventory[c]	(109,800)	(112,500)	(112,800)	(115,650)	(109,800)
6 (=)	**Materials to be purch'd** (units)	1,100,700	1,125,300	1,130,850	1,158,300	4,515,150
7 (x)	Price per unit of material(s)	(x) $2.00	(x) $2.00	(x) $2.00	(x) $2.00	(x) $2.00
8 (=)	**Materials purchase cost**	**2,201,400**	**2,250,600**	**2,261,700**	**2,316,600**	**9,030,300**

Assumptions:

[a] 10% of the next quarter's materials requirements

[b] Estimated

[c] Same as the previous quarter's ending inventory

Exhibit S: XYZ Company (Production Dept.) Schedule of Cash Disbursements for Materials (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
9	Accounts payable (12/31/20__)	1,017,022				1,017,022
10(+)	1st Quarter purchases	1,100,700	1,100,700			2,201,400
11(+)	2nd Quarter purchases		1,125,300	1,125,300		2,250,600
12(+)	3rd Quarter purchases			1,130,850	1,130,850	2,261,700
13(+)	4th Quarter purchases				1,158,300	1,158,300
14(+)	**Total disbursements for materials**	**2,117,722**	**2,226,000**	**2,256,150**	**2,289,150**	**8,880,022**

Assumptions:

50% of a quarter's materials bill is paid during that quarter; the other 50% is paid during the following quarter.

Exhibit T: XYZ Company (Production Department) Direct Labor Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	Production volume (units)	36,600	37,500	37,600	38,550	150,250
2 (x)	Direct labor hours per unit	(x) 5.0	(x) 5.0	(x) 5.0	(x) 5.0	(x) 5.0
3 (=)	**Total direct labor hours**	183,000	187,500	188,000	192,750	751,250
4 (x)	Direct labor cost/hour		(x) $9.00	(x) $9.00	(x) $9.00	(x) $9.00
5 (=)	**Total direct labor cost**	1,647,000	1,687,500	1,692,000	1,734,750	6,761,250

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

Third, Rows 6 through 8 are used to calculate the figures for the cost of purchased materials.

Note: A multi-product materials budget—especially one in which each product required a number of materials or parts—would be much more elaborate. [See Exhibit L on page B-3, which does not account for inventories (but would if it were constructed as it should be).]

B. Inputs — Inputs to this budget include:

1. the guideline direct materials budget prepared by top management (if any)
2. *Production volume* (**Row 1**) — from the production budget (Row 4, Exhibit Q)
3. *Materials requirements per unit* (**Row 2**) — from . . .
   a. historical materials usage data
   b. usage improvements indicated on relevant engineering, cost/waste reduction, and other programs/projects budgets
4. *(Desired) Ending materials inventory* (**Row 4**) — See the production department's assumption "a."
5. *Beginning materials inventory* (**Row 5**) — for the 1st quarter, from the previous budgetary period's *ending inventory of materials* item on the organizational balance sheet (or physical inventory document); for other quarters, from the previous quarter's ending inventory figure.
6. *Materials (unit) prices* (**Row 7**) — from . .
   a. suppliers' price lists
   b. projections regarding economic (e.g., inflationary) influences on prices

C. Outputs — As shown on page B-10 of Figure 14, Materials Purchase Cost figures are inputs to the next budget (schedule).

4. **Cash disbursements for materials budget** — This budget (or schedule) indicates when payments for materials purchases will be made. A common assumption: 50% of a quarter's materials purchase bill will be paid during that quarter, and 50% will be paid during the next quarter. (In general, purchases made in the last thirty to forty-five days of a quarter are paid for during the next quarter.)

A. Format — See the bottom section of Exhibit S for an example. (Note that it is formatted in the same manner as the cash collections budget in Exhibit O on page B-20, but indicates "accounts payable" instead of "accounts receivable" at the top.)

B. Inputs — *Materials purchase cost* figures — from the direct materials budget (Row 8, Ex. R)

C. Outputs — *Total disbursements for materials* figures are carried forward to the organizational procurement budget and to the cash disbursements section of the organizational cash budget (Exhibit X on page B-48).

Exhibit U: XYZ Company (Production Department) FactoryOverhead Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
	Variable Factory Overhd Costs					
1	Production volume (units)	36,600	37,500	37,600	38,550	150,250
2 (x)	Indirect labor hours per unit	(x) 1.0	(x) 1.0	(x) 1.0	(x) 1.0	(x) 1.0
3 (=)	Total indirect labor hours	36,600	37,500	37,600	38,550	150,250
4 (x)	Indirect labor cost/hour	(x) $8.00	(x) $8.00	(x) $8.00	(x) $8.00	(x) $8.00
5 (=)	**Total indirect labor cost**	292,800	300,000	300,800	308,400	1,202,000
6	Other variable costs per unit (utilities, supplies, employment taxes, employee benefits, and other variable costs)	$16.00	$16.00	$16.00	$16.00	$16.00
7 (x)	Production volume (Row 1)	(x) 36,600	(x) 37,500	(x) 37,600	(x) 38,550	(x) 150,250
8 (=)	**Total other variable overhead costs**	585,600	600,000	601,600	616,800	2,404,000
9	**Total variable overhead cost** (Sum of Rows 5 and 8)	878,400	900,000	902,400	925,200	3,606,000
	Fixed Factory Overhead Costs					
10	Staff & ofc. pers. compensat'n	150,000	150,000	150,000	150,000	600,000
11 (+)	Office supplies/equipment	5,000	5,000	5,000	5,000	20,000
12 (+)	Rental/lease expenses	5,000	5,000	5,000	5,000	20,000
13 (+)	Depreciation expense (on F/E)	77,000	77,000	77,000	77,000	308,000
14 (+)	Other fixed overhead costs	5,000	5,000	5,000	5,000	20,000
15 (=)	**Total fixed overhead cost**	242,000	242,000	242,000	242,000	968,000
16	**Total factory overhead cost** (Sum of Rows 9 and 15)	**1,120,400**	**1,142,000**	**1,144,400**	**1,167,200**	**4,574,000**

Copyright © 1989, 1995, 2012 by R. D. Cecil & Co.

5. **Direct labor budget** — This budget indicates items and associated figures used to calculate each month's/quarter's total direct labor cost. Direct labor includes all personnel who are directly involved in production —such as machine operators and assembly line workers. Direct labor cost includes only the wages of these personnel. (Employment taxes and employee benefits are included in variable factory overhead costs.)

   The direct labor budget would be fairly easy to prepare if (a) the production rate were steady, (b) employment were constant, and (c) workers' hours and wage rates were constant. In such a case, workers' monthly/quarterly wages could simply be totalled. However, especially in large, multi-product enterprises, the opposite conditions usually exist. Consequently, in order to account for variable production rates and other factors, total direct labor costs are generally calculated as shown in Exhibit T. [In multi-product enterprises, it is common practice to calculate the direct labor cost for each product (or each group of very similar products), and then calculate a grand total.]

   A. Format — First, Rows 1 through 3 are used to calculate the figures for (translate production volume into) total direct labor hours. Then, Rows 3 through 5 are used to calculate the figures for (translate total direct labor hours into) total direct labor cost.

   B. Inputs — Major inputs (to Exhibit T) include:

      1. Guideline direct labor budget formulated by

top management
2. *Production volume* (**Row 1**) **—** from the production budget (Row 4, Exhibit Q)
3. *Direct labor hours per unit* (**Row 2**) **—** from . . .
   a. recent production data
   b. labor hour (job time) improvements indicated in relevant productivity, engineering, cost reduction, facilities/equipment, and human resources program/project budgets
4. *Direct labor cost per hour* (**Row 4**) **—** from wage rate schedules and cost accounting department data

C. Outputs **—** This budget contains figures used to calculate several other budgets:

1. the cost of goods sold budget (Exhibit V on pages B-34 through B-36)
2. the factory payroll budget (of which total direct labor cost is one element)

6. **Factory overhead budget** **—** This budget contains figures for all other cost items that can be properly attributed to overall factory operations. Some of these costs are "variable" (and are covered in one section), and some are "fixed" (and are covered in another section).

A. Format **—** See the example in Exhibit U.

Variable factory overhead costs section **—** This section is usually divided into two variable cost sub-sections. In both, it is common practice to use per unit costs (calculated by the cost accounting department) to calculate total costs.

Indirect labor cost: This first sub-section is used to calculate (factory-wide) total indirect labor cost. Indirect labor consists of personnel not directly involved in production— e.g., supervisors, machine maintenance and repair personnel, electricians, pipefitters, welders, tool and die makers, tool room personnel, and janitors. Only their wages are included in the per unit cost. (Employment taxes and employee benefits are included in the other variable overhead costs sub-section.)

Other variable overhead costs: This second sub-section usually deals with the (per unit) costs of items such as these:

a. utilities (such as gas and electricity);
b. supplies (such as shop supplies, small tools, and other ancillary consumables);
c. employment taxes and employee benefits associated with direct and indirect labor; and
d. employment taxes and employee benefits associated with the salaries and wages of departmental administrative, professional/staff, and secretarial/clerical personnel (who are included under the fixed factory overhead costs section below).

Fixed factory overhead costs section **—** This section contains figures for (a) factory overhead items that are considered fixed costs, and (b) (fixed cost) items that are associated with administrative and staff activities at the departmental level. (In effect, therefore, it is equivalent to the marketing/sales department's other departmental expenses budget.) More specifically, it can include items such as these:

a. salaries/wages of the production department's middle managers, professional staff (e.g., engineers, quality control staff, and purchasing staff), and secretarial/clerical personnel;
b. office supplies and (non-depreciable) equipment;
c. rental/lease expenses associated with any factory and/or office facilities and equipment rented or leased by the production department;
d. depreciation (on any company-owned plant and/or office facilities and equipment used by the production department); and
e. other fixed overhead costs (including property taxes on factory buildings and land).

B. Inputs to the factory overhead budget (in Exhibit U) include:

1. the guideline factory overhead budget formulated by top management
2. *Production volume* (**Rows 1 and 7**) **—** from the production budget (Row 4, Exhibit Q)

3. *Indirect labor hours per unit* (**Row 2**) **—** from cost accounting department data
4. *Other variable costs per unit* (**Row 6**) **—** from cost accounting department data
5. *Fixed factory overhead costs* (**Rows 10 through 14**) **—** from salary and wage schedules, rental/lease agreements, depreciation schedules, and accounting department data

C. Outputs **—** This budget contains figures used to construct several other budgets:

1. the cost of goods sold budget (Exhibit V on pages B-34 through B-36)
2. the factory payroll budget (of which *total indirect labor cost* is one element)
3. the organizational procurement budget
4. the organizational cash budget (Exhibit X on page B-48)

7. **Production department (summary) operating budget** **—** Like the marketing/sales department's operating budget, this reviews both nonfinancial and financial aspects of the production department's operations on a single document. It summarizes items and associated figures in the more detailed (supporting) production, direct materials, direct labor, and factory overhead budgets. Since the supporting budgets are the ones actually used to manage operations and resources, and since the cost of goods sold budget (discussed below) is the budget actually used to construct the organization's operating budget, it is not absolutely necessary to prepare this summary budget. Thus, while it is prepared in many organizations, it is not prepared in all organizations.

A. Format **—** The top portion usually contains a summary of the (nonfinancial) production budget (often, just the budgeted production volume figures). The bottom portion is essentially the department's expense budget. It usually shows expense items broken down into materials expense, direct labor expense, factory overhead expenses, and any prorated organizational or corporate general and administrative expenses being charged to the production department.

B. Inputs:

1. *Production* figures **—** from the production volume figures on the producion budget
2. *Materials expense* figures **—** calculated based on materials purchase cost figures from the direct materials budget (Row 8, Ex. R), adjusted in order to account for the cost of the beginning inventory of materials
3. *Direct labor expense* figures **—** from the direct labor budget (Row 5, Ex. T)
4. *Factory overhead expense* figures **—** from the factory overhead budget (Ex. U)
5. *Charged (corporate G&A) expenses* figures **—** from the organizational G&A budget

C. Outputs **—** Organizational budgets and certain other departmental budgets are not normally prepared based on figures contained in this budget.

8. **Factory payroll budget** **—** This budget contains factory wage figures. Although it is generally the responsibility of the production department, it is usually prepared by the payroll section of the finance/accounting department based on direct and indirect labor expense figures provided by the production department. (On page B-11 of Figure 14, therefore, it is shown in a box with dashed lines.)

A. Format **—** The factory payroll budget contains direct and indirect labor expense (total wages) figures (perhaps broken down by various possible categories of personnel). It may also indicate employment tax figures calculated by the payroll department. [A payroll budget differs from a payroll schedule, which lists each employee by name and is actually used to pay personnel.]

B. Inputs:

1. *Total Direct Labor Cost* **—** from the Direct Labor Budget (Row 5, Exhibit T)
2. *Total Indirect Labor Cost* **—** from the Factory Overhead Budget (Row 5, Exhibit U)

C. Outputs **—** Along with figures contained in other departments' budgets, the figures in this budget are used to prepare the organizational payroll budget and the cash expenditures section of the organizational cash budget (Exhibit X on page B-48).

9. **Cost of goods sold budget** **—** Often called the "cost of sales budget," this indicates the actual total pro-

duction cost of the budgeted units to be sold during the coming period, which, in most manufacturing enterprises, is not the total production cost of the units to be produced during the coming period. Although this budget may be the responsibility of the production department, it, too, is normally prepared by the cost accounting section of the finance/accounting department. (Thus, on page B-10 of Figure 14, it is shown in a box with dashed lines, also.)

If it were not for these and other circumstances, the COGS budget could be constructed directly from figures in the direct materials, direct labor, and factory overhead budgets:

a. The goods produced during a particular period are not necessarily the goods sold during that period. Most enterprises ship products from inventory rather than directly from the production line. Normally, therefore, the beginning inventory of finished goods (the ending inventory for the previous budgetary period) is (a) sold before newly produced units are sold, and (b) produced at costs different from those that will be incurred during the coming period. [This reflects the FIFO (first-in-first-out) inventory policy, rather than the LIFO (last-in-first-out) policy.]

b. The cost of materials used during a particular period is not necessarily the same as the cost of materials purchased during that period. Most manufacturing enterprises maintain an inventory of materials. Normally, therefore, the beginning inventory of materials (the ending inventory for the previous budgetary period) is (a) consumed before newly purchased materials, and (b) purchased at costs different from those that will be incurred during the coming period. [This, too, reflects the FIFO rather than LIFO inventory policy.]

c. Materials prices, materials usage rates, labor hours, and wage rates do not necessarily remain constant during a twelve-month period. Thus, the cost of each unit produced can vary from month to month or quarter to quarter.

A. Format — The format shown in Exhibit V (pages B-34 through B-36) is not a standard format. Different types of manufacturing organizations utilize different formats.

Calculating the COGS is usually much more complicated than indicated in Exhibit V. This is especially true in multi-product enterprises. We have constructed Exhibit V in a manner that demonstrates the logic underlying various calculations. We have greatly simplified it by making the convenient but unrealistic assumption that, after the beginning finished goods inventory has been sold and the beginning materials inventory has been consumed, per unit production costs, purchased materials prices, wage rates, and other variables at the beginning of 2011 will remain the same throughout the rest of the year.

Note the following in Exhibit V:

* At the top, sales from the beginning inventory of finished goods are subtracted from total unit sales in order to determine how many of the units sold must be produced (aales from production). Figures for (unit) sales from the beginning inventory of finished goods are used to calculate the total (material, direct labor, and factory overhead) cost of the goods sold from beginning inventory. Figures for (unit) sales from production are used to calculate the total (material, direct labor, and factory overhead) cost of the goods sold from production.

* Below, the budget has been divided into three major sections: a materials section, a direct labor section, and a factory overhead section. Under each major section, costs are divided into two sub-sections: (a) the costs associated with the goods sold from the beginning inventory of finished goods, and (b) the costs associated with the goods sold from production (during the coming period).

* In the materials section — First, the cost of materials in the beginning inventory of finished products is calculated. Second, the cost of materials in the goods sold from production is calculated. The second step requires (1) determining total materials requirements, (2) subtracting the beginning inventory of materials (so as not to double count its cost), and (3) calculating the cost of materials purchased during the period in order to produce for sales. Third, the costs of materials in the beginning inventory of finished goods and of the materials in goods produced are totalled.

An additional point: Although the cost of goods sold from the beginning inventory of finished goods can be calculated using only a few lines, we have not used this formatting short-cut in Exhibit V. The format we have used (a) illustrates the logic in COGS calculations, and (b) makes calculating total materials cost, total direct labor cost, and total factory overhead cost somewhat easier.

B. Inputs to the COGS budget (in Exhibit V) include:

1. *Total unit sales* (**Row 1**) — as in the sales budget (Row 1, Exhibit N)

Exhibit V: XYZ Company (Production Department) Cost of Goods Sold (COGS) Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	Total unit sales	36,500	37,500	37,500	38,500	150,000
2 (-)	Sales from beginning inventory of finished goods[a]	(3,650)				(3,650)
3 (=)	Sales from production	32,850	37,500	37,500	38,500	146,350
MATERIALS						
	Cost of materials in goods sold from beg'g inv. of finishd goods[a]					
4	Units of matl. per product (2010 data)	30.5				
5 (x)	Cost per unit of material (2010 data)	(x) $1.90				
6 (=)	Materials cost per unit of product in beg'g inventory of finished goods	57.95				
7 (x)	Beginning inv. of finished goods	3,650				
8 (=)	**Totl cost of matls in goods sold from beg. inv. of finished goods**	211,518				211,518
	Cost of materials in goods sold from production					
9	Beginning inventory of materials[b]	109,800				
10(x)	Cost per unit of material (2010 data)	(x) $1.90				
11(=)	**Total cost of beginning inventory of materials**	208,620				
12	Units of budgeted sales to be produced	32,850	37,500	37,500	38,500	
13(x)	Units of materials per finished product (2011 est'd)[c]	(x) 30.0	(x) 30.0	(x) 30.0	(x) 30.0	
14(=)	Production materials required	985,500	1,125,000	1,125,000	1,155,000	
15(-)	Beginning inventory of materials	(109,800)				
16(=)	Units of materials to be purchased to produce for sales	875,700	1,125,000	1,125,000	1,155,000	
17(x)	Cost per unit of purchased materials (2011 est'd)[c]	(x) $2.00	(x) $2.00	(x) $2.00	(x) $2.00	
18(=)	**Total cost of materials purchased for production for sales**	1,751,400	2,250,000	2,250,000	2,310,000	8,561,400
19	**Total cost of materials in goods sold from production** (Row 11 + Row 18)	1,960,020	2,250,000	2,250,000	2,310,000	8,770,020
20	**Total cost of materials in COGS** (Row 8 + Row 19)	**2,171,538**	**2,250,000**	**2,250,000**	**2,310,000**	**8,981,538**

Assumptions (in lines 1through 20)

[a] Beginning inventory of finished goods is sold before goods produced during period are sold.

[b] Beginning inventory of materials is consumed before newly purchased materials are consumed.

[c] (Net) result of (a) lower usage or costs than previous year (due to programs/projects), and/or (b) higher costs (due to inflation). Remains constant during the rest of the year (a convenient but unrealistic assumption made here for the sake of simplicity).

Exhibit V continued (Part 2)

		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
DIRECT LABOR						
	Cost of direct labor in goods sold frm beg'g inv. of finishd goods[a]					
21	Direct labor hours/unit (2010 data)	5.2				
22(x)	Direct labor cost/hour (2010 data)	(x) $8.75				
23(=)	Direct labor cost/unit (2010 data)	$45.00				
24(x)	Beginning inventory of finished goods	(x) 3,650				
25(=)	**Total cost of direct labor in goods sold frm beg'g inv. of fin'd goods**	166,075				166,075
	Cost of direct labor in goods sold from production					
26	Direct labor hours/unit (2011 est'd)[c]	5.0	5.0	5.0	5.0	
27(x)	Direct labor cost/hour (2011 est'd)[c]	(x) $9.00	(x) $9.00	(x) $9.00	(x) $9.00	
28(=)	Direct labor cost/unit (2011 est'd)	$45.00	$45.00	$45.00	$45.00	
29(x)	Units of budgeted sales to be produced	(x) 32,850	(x) 37,500	(x) 37,500	(x) 38,500	
30(=)	**Total direct labor cost in units produced for sales**	1,478,250	1,687,500	1,687,500	1,732,500	6,585,750
31	**Total direct labor cost in COGS** (Row 25 + Row 30)	**1,644,325**	**1,687,500**	**1,687,500**	**1,732,500**	**6,751,825**
FACTORY OVERHEAD						
Indirect Labor						
	Indirect labor cost in goods sold from beg'g inv. of finishd goods[a]					
32	Indirect labor hours/unit (2010 data)	1.0				
33(x)	Indirect labor cost/hour (2010 data)	(x) $7.75				
34(=)	Indirect labor cost/unit (2010 data)	$7.75				
35(x)	Beg'g inventory of finished goods	(x) 3,650				
36(=)	**Total Indirect labor cost in COGS from beg'g inventory of fin'd goods**	28,288				28,288
	Indirect labor cost in goods sold from production					
37	Indirect labor hours/unit (2011 est'd)[c]	1.0	1.0	1.0	1.0	
38(x)	Indirect labor cost/hour (2011 est'd)c	(x) $8.00	(x) $8.00	(x) $8.00	(x) $8.00	
39(=)	Indiorect labor cost/unit (2011 est'd)	$8.00	$8.00	$8.00	$8.00	
40(x)	Units of budgeted sales produced	(x) 32,850	(x) 37,500	(x) 37,500	(x) 38,500	
41(=)	**Total indirect labor cost in units produced for sales**	262,800	300,000	300,000	308,000	1,170,800
42	**Total indirect labor cost in COGS** (Row 36 + Row 41)	**291,088**	**300,000**	**300,000**	**308,000**	**1,199,088**

Exhibit V (continued) Part 3

		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
Othr Variable Factory Overhead Costs						
	Othr var. fact. ovrhd costs in goods sold from beg'g inv. of fin'd goods[a]					
43	Othr var. ovrhd costs/unit (2010 data)	$15.50				
44(x)	Beginning inventory of finished goods	(x) 3,650				
45(=)	Total other variable fact. ovrhd cost in goods sold from beg'g inventory	56,575				56,575
	Other var. factory ovrhd costs in goods sold from production					
46	Othr var. ovrhd costs/unit (2011 est'd)[c]	$16.00	$16.00	$16.00	$16.00	
47(x)	Units of budgeted sales produced	(x) 33,850	(x) 37,500	(x) 37,500	(x) 38,500	
48(=)	Total othr variable factory ovrhd cost in goods sold from production	525,600	600,000	600,000	616,000	2,341,600
49	**Total othr variable factory overhead cost in COGS** (Row 45 + Row 48)	525,600	600,000	600,000	616,000	2,398,175
Fixed Factory Overhead Costs						
	Fixed factory ovrhd costs in goods sold from beg'g inv. of fin'd goods					
50	Fixed fact. ovrhd cost/unit (2010 data)	$6.87				
51(x)	Beginning inventory of finished goods	(x) 3,650				
52(=)	**Total fixed factory overhead cost in goods sold from beg'g inventory**	25,076				25,076
	Fixed factory ovrhd costs in goods sold from production					
53	Fixed fact. ovrhd cost/unit (2010 data)[c]	$6.44	$6.44	$6.44	$6.44	
54(x)	Units of budgeted sales produced	(x) 32,850	(x) 37,500	(x) 37,500	(x) 38,500	
55(=)	**Total fixed factory ovrhead cost in goods sold from production**	211,554	241,500	241,500	247,940	942,494
56	**Total fixed factory ovrhead cost in COGS** (Row 52 + Row 55)	236,630	241,500	241,500	247,940	967,570
57	**Total factory overhead in COGS** (Sum of Rows 42, 49, and 56)	**1,109,893**	**1,141,500**	**1,141,500**	**1,171,940**	**4,564,833**
SUMMARY						
Totl Cost of Matls in COGS (Row 20)		2,171,538	2,250,000	2,250,000	2,310,000	8,981,538
Totl Dir. Labor Cost in COGS (Row 31)		1,644,325	1,687,500	1,687,500	1,732,500	6,751,825
Totl Fact. Ovrhd Cost in COGS (Row 57)		1,109,893	1,141,500	1,141,500	1,171,940	4,564,833
	TOTAL COST OF GOODS SOLD	**4,925,756**	**5,079,000**	**5,079,000**	**5,214,440**	**20,298,196**

2. *Sales from beginning inventory* (**Row 2**) **—** from the previous budgetary period's ending inventory of finished goods
3. *Units of material per product* in 2011 (**Row 4**) **—** from cost accounting dept. 2010 data
4. *Cost per unit of material* in 2011 (**Row 5**) **—** from cost accounting dept. 2010 data (or materials bills at the end of the previous budgetary period)
5. *Beginning inventory of finished goods* (**Row 7**) **—** as in Row 2 (1st quarter column)
6. *Beginning inventory of materials* (**Row 9**) **—** from the previous budgetary period's ending inventory of materials (or Row 5 of Ex. R)
7. *Cost per unit of material* in 2011 (**Row 10**) **—** from cost accounting dept. 2010 data
8. *Units of budgeted sales to be produced* (**Row 12**) **—** from Row 3
9. *Units of material per finished product* in 2011 (**Row 13**) **—** from engineering dept. and cost acct'g dept. projected 2011 data (or Row 2 of Exhibit R)
10. *Beginning inventory of materials* (**Row 15**) **—** as in Row 9 (1st quarter column)
11. *Cost per unit of purchased materials* in 2011 (**Row 17**) **—** from purchasing dept. data
12. *Direct labor hours/unit* in 2011 (**Row 21**) **—** from cost accounting dept. 2010 data
13. *Direct labor cost/hour* in 2011 (**Row 22**) **—** from cost accounting dept. 2010 data
14. *Beginning inventory of finished goods* (**Row 24**) **—** as in Row 7 (1st quarter column)
15. *Direct labor hours per unit* in 2011 (**Row 26**) **—** from engineering dept. and cost accounting dept. projections for 2011 (or Row 2 in Exhibit T)
16. *Direct labor cost/hour* in 2011 (**Row 27**) **—** from payroll dept. and cost acct'g dept. 2011 projections (or Row 4 of Exhibit T)
17. *Units of budgeted sales to Be produced* (**Row 29**) **—** as in Row 3 (1st quarter column)
18. *Indirect labor hours/unit* in 2011 (**Row 32**) **—** from cost acct'g dept. 2010 data
19. *Indirect labor cost/hour* in 2011 (Row 33) **—** from cost acct'g dept. 2010 data
20. *Beginning inventory of finished goods* (**Row 35**) **—** as in Row 2 (1st quarter column)
21. *Indirect labor hours/unit* in 2011 (**Row 37**) **—** from cost acct'g dept. 2011 estimates (or Row 2 in Exhibit U)
22. *Indirect labor cost/hour* in 2011 (**Row 38**) **—** from payroll dept. and cost acct'g dept. 2011 projections (or Row 4 in Exhibit U)
23. *Units of budgeted sales to be produced* (**Row 40**) **—** as in Row 3 (1st quarter column)
24. *Other variable factory overhead costs/unit* in 2011 (**Row 43**) **—** from cost accounting dept. 2010 data
25. *Beginning inventory of finished goods* (**Row 44**) **—** as in Row 2
26. *Other variable factory overhead costs/unit* in 2011 (**Row 46**) **—** from cost accounting dept. projections for 2011 (or Row 6 in Exhibit U)
27. *Units of budgeted sales to be produced* (**Row 47**) **—** as in Row 3
28. *Fixed factory overhead costs/unit* in 2011 (**Row 50**) **—** from cost acct'g dept. 2010 data
29. *Beginning inventory of finished goods* (**Row 51**) **—** as in Rows 7 and 2
30. *Fixed factory overhead costs/unit* in 2011 (**Row 53**) **—** from cost acct'g dept. 2010 data (or Row 16 of Exhibit U, divided by the number of units to be produced during 2011)
31. *Units of budgeted sales to be produced* (**Row 54**) **—** as in Row 3

C. Outputs **—** As shown in Figure 14, cost of goods sold figures are carried forward to the organization's operating budget (Exhibit W on page B-42). Sometimes all four rows of figures at the bottom of page B-36 of Exhibit V are carried forward; and sometimes only the total cost of goods sold figures are carried forward. [Remember that profit or (loss) is calculated by subtracting the total cost of products sold from the total revenue generated from the products sold. It is not calculated by subtracting the period's production expenses (in the direct materials, direct labor, and factory overhead budgets) from sales revenue.]

10. **Ending inventory budgets** — Basically, an ending inventory budget is a calculation of the value of an inventory at the end of a given period (normally, the end of a year).

    Most manufacturers maintain three basic types of inventories: a materials inventory, a work-in-process inventory (of partially finished or semi-finished goods), and a finished goods inventory. [To simplify our discussions and exhibits, we have assumed that XYZ Company does not have any semi-finished goods at the end of any given period (year)—even though most manufacturers ordinarily do.]

    Calculating the projected year-end values of XYZ Company's two inventories is easy, because we have assumed that the company (a) uses only one material, (b) produces only one product, and (c) has usage rates and production costs that do not vary throughout the year. Thus, . . .

    * The value of the projected year-end materials inventory can be calculated by simply multiplying the estimated number of pounds of material in inventory by the purchase price per pound (which assumedly has remained constant throughout the year).
    * The value of the projected year-end finished goods inventory can be calculated by simply multiplying the estimated number of finished units in inventory by the total (average) per unit production cost for the current year. (See the example below.)

    Calculating inventory values is much more time-consuming and complicated when these circumstances exist: (a) many different materials or parts are being used; (b) the inventory of any particular material or part contains units that were purchased at different times and at different prices; (c) a number of different products are being made; and (d) the inventory of any particular product contains units that were produced at different times and at different per unit costs during the year. Furthermore, unless a company has a fairly sophisticated cost accounting system, per unit costs can be difficult to determine. This is especially true of the per unit costs of semi-finished (in-process) goods.

    A. Format and Inputs — In the simplified example below, we have assumed that all units in this inventory will be produced during the fourth quarter of the current budgetary year.

    Finished goods ending inventory budget

Direct Materials Cost Per Unit (30 lbs/unit x $2/lb) — from Rows 2 & 7 of direct materials budget (Ex. R)	60.00
Direct Labor Cost Per Unit (5 hours/unit x $9/hr) — from Rows 2 & 4 of the direct labor budget (Ex. T)	45.00
Factory Overhead Cost Per Unit ($8 of ind. labor cost/unit plus $16 of othr var. ovrhd cost/unit plus $6.44 of fxd ovrhd cost/unit) - as in Rows 39, 46, and 53 of the COGS budget (Ex. V)	30.44
(=) *Total Cost Per U*nit	135.44
(x) Projected units in inventory [from 4th Q, Row 2 of production budget (Ex. Q)]	(x) 3,900
(=) *Ending Inventory Value*	528,216

    C. Outputs — The values of ending inventories of materials, semi-finished goods, and finished goods are shown either separately or totalled in the inventory section on the organization's balance sheet budget. [See Row 5 of Exhibit Y on page B-52.]

Other Departmental Budgets That Are Common to All Departments

1. **Unit expense budget** — As shown on page B-10 of Figure 14, other units (the R&D, Finance, and Human Resources Departments) also have Expense Budgets. These units' expense budgets, however, generally constitute their Operating Budgets. Such budgets are often broken down into the following groups of items:

    a. unit-related operating expense items;
    b. items involving the department's internal administration (such as those in the marketing department's other departmental expenses budget, and in the fixed factory overhead cost section of the production department's factory overhead budget); and
    c. prorated allocations/charges for organizational/corporate general and administrative expenses.

With a few possible exceptions, these expenses are generally considered fixed costs.

A. Format — For basic examples, see the other departmental expenses section of the marketing department's operating budget (Exhibit P on page B-24), and the G&A expense section of the organizational operating budget (Exhibit W on page B-42).

B. Inputs to the expense/operating budget of the R&D, finance, or human resources department can include:

1. the guideline departmental expense/operating budget formulated by top management
2. the operating levels and requirements of the marketing/sales and production departments —from the pertinent marketing/sales and production department budgets
3. figures associated with applicable expense items on departmental operating, structural/systems, facilities/equipment, and human resources program/project budgets
4. figures from the previous period's/periods' expense budgets
5. relevant ratios/percentages in previous period's/periods' expense budgets
6. various financial/cost analyses
7. corporate allocations of corporate-level G&A expenses (which do not constitute direct departmental expenses)

C. Outputs — In general, direct departmental expenses (of the R&D, human resources, and finance departments) are included in the general and administrative expense section of the organizational/corporate operating or profit/(loss) budget (along with expenses incurred at the corporate/executive level).

The next two budgets—resources management budgets—are common to all departments.

2. **Unit/department facilities/equipment budget** — This budget is primarily used by a unit/department to summarize and consolidate figures for the benefits, capital expenditures, and costs associated with proposed/planned physical resources programs/projects.

A. Format — First, this budget generally summarizes any revenue increases, cost savings, capital expenditures, and additional costs associated with each facilities/equipment program/project (in its turn). Then, at the bottom, it normally indicates total revenue increases, cost savings, capital expenditures, and additional costs associated with all the department's facilities/equipment programs/projects.

This budget can also be used as a tool for managing existing physical resources. When used for this purpose, it can contain figures such as those listed below. (It should be pointed out, however, that such information is more often recorded on an attached or completely separate facilities/equipment inventory.)

a. for each existing non-depreciable (but significant) piece of property or equipment: (a) purchase date; (b) purchase cost; and (c) replacement value

b. for each existing capital (depreciable) asset: (a) purchase date; (b) purchase cost; (c) annual depreciation; (d) accumulated depreciation (as of the end of the current year); (e) net (book) value; and (f) market (resale) and/or salvage value

Facility/equipment items are generally listed down the left side of a columnar sheet, and the associated figures are generally indicated in columns to the right under the appropriate date/cost/value headings.

B. Inputs can include:

1. the unit-applicable guideline facilities/equipment budget formulated by top management
2. figures (for appropriate items) on all the department's facilities/equipment program/project budgets
3. figures for any facilities/equipment aspects of other types of departmental program/project budgets

B. Outputs — As shown on page B-11 of Figure 14, all departments' facilities/equipment budgets are summarized and consolidated on the organiza-

tional facilities/equipment budget (which is not the same as the organizational capital expenditures budget).

3. **Unit/department human resources budget** — This generally contains both financial and non-financial items. In its most basic form, it simply translates planned personnel requirements (such as required manhours or the required number of personnel) into personnel costs.

   Although this budget is often used only to indicate payroll expenses, it can also be used to manage many other human resources matters. For example, it may break down personnel-related requirements, data, and costs in these and other ways: (a) by managerial, supervisory, and work-force groups; (b) by sub-units; (c) by salary/wage and benefit programs; (d) by the seniority of personnel; (e) by staffing (hiring/selection) activities; and (f) by training/development activities.

   A. Format:

      A marketing/sales department's human resources budget might summarize/consolidate and then total the following: (a) salesforce requirements and costs; (b) administrative, professional staff, and office personnel requirements and costs; and (c) other human resources data and costs.

      A production department's human resources budget might summarize/consolidate and then total the following: (a) factory personnel requirements and costs; (b) administrative, professional staff, and office personnel requirements and costs; and (c) other human resources data/costs.

      Other departments generally summarize/consolidate and then total the following: (a) administrative, staff, and office personnel requirements and costs; and (b) other human resources data and costs.

   B. Inputs to a department's human resources budget can include:

      1. the unit-applicable guideline human resources budget formulated by top management
      2. figures (for appropriate items) on all the department's human resources program/project budgets
      3. figures for any appropriate human resources items on other types of departmental program/project budgets

   C. Outputs — As shown on page B-11 of Figure 14, the human resources budgets of all departments are summarized and consolidated on the organization's human resources budget, which is generally used by the human resources department to manage various human resources matters.

   Two reminders as we conclude this sub-section on departmental budgets:

   * In order to minimize confusion, departments' budgets should be referred to by the name of the department and the type of budget.

   * The preparation and eventual finalization of all unit-specific budgets should be coordinated among departments. (It helps if all departments have access to a computerized operational/financial simulation model that enables them to perform "what if" analyses to determine how variations on their budgets will affect other units' budgets and organizational budgets.)

Organizational Budgets

Of the budgets discussed below, the three most important are usually the organizational operating budget, the cash budget, and the balance sheet budget. Among the others are: the sales and revenue budgets, the organizational facilities/equipment budget, the capital expenditures budget; the procurement budget; the organizational human resources budget; and the organizational payroll budget. [See the right side of page B-11 of Figure 14.]

Several of these budgets are essentially "accounting budgets," while others are essentially "resources management budgets."

Almost all (finalized) organizational budgets are prepared based on departments' various budgets. Several types of organizational budgets are either a particular department's budget or a summarized version of it. Other types of organizational budgets are consolidations of similarly-titled budgets prepared by all departments.

For each type of budget, there are almost as many organizational budget formats as there are organizations. Different organizations show different items on their various budgets. For example: Some incur certain types of costs that others do not incur. Some receive revenues from sources that others do not. Some break down certain broad items into more specific items, while others aggregate certain specific items into broader items.

Again, the percentages and ratios existing among budgetary items differ not only from industry to industry, but also from organization to organization within an industry.

1. **Organizational sales budget** — This accounting budget contains both unit sales figures and dollar sales (revenue) figures. In those organizations that generate income only from sales, this budget constitutes the (sales) revenue budget as well as the unit sales budget.

   A. Format:

      In most profit-making enterprises, the organizational sales budget is the marketing/sales department's sales budget. However, the budget actually used at the organizational (top management) level is usually a summarized (less detailed) version.

      In those profit-making enterprises where other units also sell products or services, the organizational sales budget summarizes and consolidates all such departments' unit and dollar sales figures into total unit sales and total sales revenue.

      A non-profit organization can have a sales budget if it generates income through the sale of products and/or services.

   B. Inputs include:

      1. the initial organizational sales budget
      2. (finalized/approved) sales budgets of the department(s) that sell(s) products or services

   C. Outputs — Many enterprises carry forward the (total) unit sales figures to the top of the organizational operating budget. (We have not done so in Exhibit W.) At or just below the top of the organizational operating budget, most enterprises indicate the (total) gross sales revenue, (total) sales discounts/allowances, and (total) net sales revenue figures, while others indicate only the (total) net sales revenue figures.

2. **Organizational revenue budget or other income budget** — This financial budget indicates the estimated/planned amount(s) of revenue from one or more sources. Whether it is called the revenue budget or the other income budget depends on factors discussed below.

   A. Format:

      In profit-making enterprises, the revenue section of the sales budget is the sales revenue budget, and this particular budget is called the other income budget. It deals with sources of revenue other than sales generated through the organization's major operations. The other income budget is often broken down into specific non-operating income accounts such as investments income, lease/rental income, royalties income, and licensing income.

      In those non-profit organizations that receive income from sources other than sales (and therefore do not have a sales budget), this budget is called the revenue budget. It is usually broken down into specific accounts such as these: revenues from gifts and donations; revenues from grants; federal, state, and/or local revenue allocations; and investments income.

   B. Inputs:

      1. Figures associated with revenues from rentals/leases, royalties, licenses, gifts/donations, grants, and allocations often come from separate, detailed supporting budgets.

      2. Investments Income figures usually come from a portfolio/investments budget. [In organizations that invest excess cash in securities, and in financial institutions that actively deal in marketable securities, the finance, securities, trust, or investment department has this type of budget. It indicates the planned/projected revenue (and costs) to be generated by buying, holding, selling, and otherwise managing investments. See the bottom right corner of page B-10 of Figure 14.]

Exhibit W: XYZ Company (Manufacturing Enterprise) Annual Operating Budget (2011)
[Pro Forma Annual Operating, Profit/(Loss), Income, or Earnings Statement]

Row #	(All figures in 000s of dollars)	2010 Actual	2011 Budget	2011 Actual	2011 Variance
1	**Gross sales revenue**		30,000		
2 (-)	Discounts/allowances		(900)		
3 (=)	**Net sales revenue**		29,100		
	Cost of goods sold				
4	Materials cost		8,982		
5	Direct labor cost		6,752		
6	Factory overhead cost		4,565		
7 (-)	**Total cost of goods sold**		20,299		
8 (=)	**Gross profit margin (on Sales)**		**8,801**		
	Selling/promotional expenses				
9	Advertising/promotion expense		1,100		
10	Selling expense		2,800		
11	Other marketing expenses		1,311		
12 (-)	**Total selling/promo expense**		**5,211**		
	General & admin. expenses				
13	Executive/administrative salaries		550		
14	Office personnel wages		450		
15	Employment taxes		110		
16	Employee benefits		100		
17	Rental(s)/lease(s)		20		
18	Office supplies/equipment		40		
19	Business travel/entertainment		80		
20	Telephone and postage		40		
21	Professional fees		30		
22	Utilities		40		
23	Bad debt expense		300		
24	Depreciation expense		70		
25	Amortization expense		20		
26	Interest expense		290		
27	Other G&A expenses		40		
28(-)	**Total G&A expense**		**2,180**		
29(+)	**Other Income (Net)**		86		
30(=)	**Profit/(loss) before taxes**		**1,496**		
31(-)	**Estimated state/federal taxes**		(541)		
32(=)	**Net profit/(loss) [after taxes]**		**955**		
33(-)	Dividends		406		
34(=)	**Retained earnings (for year)**		549		

3. **Other organizational budgets that are basically departmental budgets** — The organizational accounting budgets listed below are essentially departmental budgets. They are usually summarized for use at the top management level.

   Cash receipts (from sales) budget
   Selling budget
   Advertising/promotion budget

   Production budget
   Direct materials budget
   Cash disbursements (for materials) budget
   Direct labor budget
   Factory overhead budget
   Factory payroll budget
   Cost of goods sold budget

4. **Organizational social (responsibility) budget** — Although organizations can have such a budget, most do not. They generally include any socially-related expenses in human resources expense figures. [Therefore, this type of budget is not included in Figure 14.]

5. **Organizational structural/systems budget** — The same applies to this budget. Most organizations include any costs associated with structural or systems changes/improvements in other (usually G&A) expense items.

6. **Organizational/corporate operating budget (pro forma operating, profit/(loss), income, or earnings statement)** — This major financial budget, which is constructed by the accounting department, summarizes and consolidates the following: (a) projected/planned revenue and expense figures from operating and staff units' various budgets; and (b) general and administrative expenses expected to be incurred at or by the corporate (executive/administrative) level. [See Exhibit W on the facing page.]

   In a profit-making organization, the operating budget is used to calculate the organization's "bottom line" [net (after-tax) profit or (loss)] for the fiscal/tax year. Exhibit W indicates how net profit/(loss) is calculated with respect to a manufacturing enterprise. Basically, a profit is generated when total revenue exceeds total expenses, and a (loss) is generated when total expenses exceed total revenue. (When there is no before-tax profit, there is no tax. When there is a before-tax profit, tax is calculated based on that figure, and then is subtracted from it to obtain the net or after-tax profit.)

   In a non-profit organization, the operating budget is used to calculate the organization's operating surplus or (deficit) for the fiscal year. Basically, an operating surplus is generated when total revenue exceeds total expenses, and an operating deficit is generated when total expenses exceed total revenue.

   It should be noted that, in certain financial institutions, the portfolio/investments budget (which generally contains figures for both revenues and expenses) can constitute the operating budget or a major portion of it. [See a description of this type of budget in paragraph number B.2. on page B-41.]

A. Format — Exhibit W illustrates a format commonly used by manufacturing firms.

   The revenue section generally contains figures for gross sales revenue, total discounts/allowances, and net sales revenue. (Remember that sales revenue figures represent "sales made or booked," not actual cash collections from sales.)

   The cost of goods sold section may simply show a total for COGS, or it may show the costs broken down by specific accounts (as in Exhibit W). Only enterprises that either make/sell or buy/sell products include COGS figures on the operating budget. (Remember that the COGS budget contains the costs associated with products actually sold, not necessarily the cash expenditures made for materials and labor during the period. Expenses/costs and cash expenditures are normally two different things.)

   The selling/promotion expenses section may simply show a total for all such expenses, or it may show the costs broken down into several categories (as in Exhibit W).

   The general & administrative expenses section: Figures associated with G&A expense items are usually derived from either one or both of these two sources: (a) figures for organizational/corporate (top level) G&A expense items; and/or (b)

consolidated figures for items on certain units' expense budgets.

The sample G&A format in Exhibit W includes common items/accounts. However, the discussion that follows applies only to XYZ Company. Other organizations may utilize certain accounts somewhat differently.

Figures for the items listed below are derived from the corporate G&A budget, which is usually constructed from supporting budgets that deal with individual G&A items.

a. *Professional fees* — fees charged by outside auditors, attorneys, consultants, etc. (for their professional services)
b. *Bad debt expense* — the account for "writing off" uncollectible debts
c. *Amortization expense* — the account for expensing (legal and other) costs associated with the acquisition of "intangible assets" such as patents, trademarks, copyrights, licenses, and franchises
d. *Interest expense* — interest on short- and long-term corporate debt

Figures for the items listed below are derived from both (a) the figures for these items on the corporate-level G&A expense budget, and (b) the (consolidated/totalled) figures for these items on the expense budgets of the R&D, finance, and human resources (staff/non-operating) departments. Note: The marketing and production department expenses associated with these items have already been charged/expensed in several marketing department direct expense budgets and in the production department's COGS budget.

a. *Executive/administrative salaries* — of the president, the vice presidents of all departments, and the middle managers, supervisors, and professional staff members of the R&D, finance, and human resources departments
b. *Office personnel wages* — of corporate-level office personnel and of office personnel in the three departments mentioned above
c. *Employment taxes* — taxes associated with the employment and salaries or wages of the personnel in "a" and "b" above
d. *Employee benefits* — treated the same as employment taxes
e. *Rentals/leases* — XYZ Company lease of corporate automobiles (This item can also include expenses associated with, for example, office space and various types of equipment rented/leased by the corporation and the three staff departments.)
f. *Office supplies and (minor) equipment* — the (total) cost of office supplies and non-depreciable office equipment consumed or utilized by corporate-level personnel and by personnel of the R&D, finance, and human resources departments
g. *Business travel/entertainment* — expenses mostly incurred by corporate-level personnel (especially executives), but also incurred by other departments' personnel when they are on official company business
h. *Telephone and postage* — expenses associated with the corporate level and the operations of the R&D, finance, and human resources departments
i. *Utilities* — expenses associated with corporate offices and the offices of the R&D, finance, and human resources departments
j. *Depreciation expense* — total annual depreciation on company-owned capital assets (office building and office furniture and equipment) used by the corporate level and by the R&D, finance, and human resources departments
k. *Other G&A expenses* — the catch-all account in which XYZ Company deals with business taxes, property taxes on its owned office building, and expenses associated with other miscellaneous G&A items

The <u>profit/(loss) section</u>: Figures in this section are calculated for the organization as a whole (unless certain units are subsidiary corporations). [See the calculations in Exhibit W.]

Especially when organizations have a large interest expense, they often remove this item

from the G&A Expense section and place it just above the before-tax profit/(loss) item, which is then called "EBIT" (earnings before interest and taxes).

The dividends and retained earnings section: Although this section is not always included on many organizations' operating budgets, we have included it in Exhibit W in order to show how the retained earnings figure is calculated. (A net profit increases retained earnings—if that profit is not entirely paid out in dividends. A net loss decreases retained earnings.)

As indicated in Exhibit W by the left-hand column (which we have not filled in with figures), the previous year's actual (experienced as of end-of-year) figures are often included as a basis for comparison.

B. **Inputs** — A finalized organizational operating budget should contain figures that reflect "overall operating results." In other words, the figures should account for the projected results of (a) ongoing operations, and (b) any new programs/projects. (If departmental budgets reflect these results, then their consolidation on the organizational operating budget should automatically reflect them.)

Major inputs to Exhibit W include:

1. the organizational profit goal
2. the more detailed operating or expense budgets of units/departments
3. *Gross sales revenue* (**Row 1**) — from the sales budget (Row 3, Exhibit N)
4. *Discounts/allowances* (**Row 2**) — from the sales budget (total Rows 4 & 5, Ex. N)
5. *Net sales revenue* (**Row 3**) — from the sales budget (Row 6, Exhibit N)
6. *Materials, direct labor, factory overhead in cost of goods sold*, and *total cost of goods sold* (**Rows 4, 5, 6, and 7**) — from the four rows at the bottom of page B-36 of the cost of goods sold budget (Ex. V)
7. *Advertising/promotion expense, selling expense, other marketing expenses*, and *total selling/promotional expenses* (**Rows 9, 10, 11, and 12**) — as in Rows 11, 19, 28, and 29 of the marketing/sales department operating budget (Exhibit P)
8. *G&A expense items* (**Rows 13 through 27**) — See the discussion that begins at the middle of the right column of page B-43.
9. *Other income* (**Row 29**) — from the investments budget and the budgets for other sources of revenue that do not involve product/service sales
10. *Dividends* (**Row 33**) — projected dividend payout during the budgetary year

C. **Outputs** — If the operating budget indicates the (fiscal year) retained earnings figure, that figure is added to previously accumulated retained earnings (shown on the prior year's balance sheet), and the total is entered on the balance sheet budget for the coming year. If not, the budgeted net profit/(loss) and dividend figures—and the prior period's accumulated retained earnings figure—are used to calculate the accumulated retained earnings as of the end of the budgetary year. [See Exhibit Y, page B-52.]

7. **Organizational/corporate human resources budget** — Many organizations construct this budget in order to manage a number of personnel-related matters. Many others, however, simply use it as a payroll budget.

A. Format:

When this budget is used only as a payroll budget, projected payroll figures may be broken down by factory payroll, salesforce payroll, corporate executives payroll, and office personnel payroll. Employment tax figures are also projected.

When it is used to budget and manage various personnel-related matters, it consolidates departmental and corporate-level personnel requirements, costs, and data, often summarizing them in these and other ways: (a) by managerial, supervisory, and work-force groups; (b) by units/departments; (c) by location; (d) by salary/wage and benefit programs; (e) by the seniority of personnel; (f) by staffing (hiring/selection) activities; and (g) by training/development activities. The Payroll expenses section may be formatted as described in the previous paragraph.

B. Inputs:

1. Organizational human resources (and relevant social responsibility) goals
2. the initial organizational human resources budget
3. the human resources budgets of all units/ departments
4. the figures for personnel-related expense items in (a) the selling and other expenses budgets of the marketing department; (b) the factory payroll and fixed overhead budgets of the production department; and (c) the expense budgets of other departments
5. figures for the salaries/compensation items on the corporate-level G&A budget

C. Outputs — If the organizational human resources budget is used as the organizational payroll budget, (summarized) payroll figures and employment tax figures are carried forward to the organizational cash budget (Exhibit X on page B-48).

8. **Organizational payroll budget** — As mentioned above, this budget contains projected payroll figures and employment tax figures that are generally broken down by categories of personnel. [The payroll budget differs from a payroll schedule, which (a) is used as the basis for writing paychecks; (b) is based on work-hours actually recorded (by factory and office personnel); and (c) lists each employee by name (and social security number).]

A. Format — Projected monthly/quarterly Payroll figures and employment tax figures are usually shown for various categories of personnel, with the total for all categories shown at the bottom.

B. Inputs — See inputs 4 and 5 at the bottom of page B-45. Employment taxes are calculated.

C. Outputs — Projected payroll figures and employment tax figures are usually totalled and then carried forward to the cash disbursements section of the organizational cash budget (Exhibit X on page B-48).

9. **Organizational/corporate facilities/equipment budget** — Many organizations—especially those having capital-intensive operations and high-costcapital facilities and equipment—use this type of budget to (a) review the financial implications of programs/projects, (b) allocate physical resources efficiently among units, and (c) manage the procurement of physical resources during the coming period.

A. Format — This resources management budget summarizes and consolidates the facilities/equipment budgets of units/departments. It can contain figures for the following items: (a) the cost savings, procurement expenditures, and new/additional costs associated with each (budgeted) facilities/ equipment program/project; (b) the total cost savings, procurement expenditures, and new or additional costs for all the (budgeted) facilities/equipment programs/projects of each unit/department; and (c) the total organizational cost savings, procurement expenditures, and new/additional costs of all (budgeted) facilities/equipment programs/ projects. It often breaks down expenditures into expenditures for minor (nondepreciable) facilities/equipment and expenditures for capital (depreciable) facilities/equipment.

Note: Organizations usually prepare a separate physical resources or facilities/equipment inventory for managing all capital assets and all significant nondepreciable property and equipment. This generally indicates information mentioned in sub-paragraphs “a” and “b” in the right-hand column of page B-39.

B. Inputs:

1. Organizational facilities/equipment goals
2. the initial organizational facilities/equipment budget
3. (finalized/approved) facilities and equipment budgets of units

C. Outputs — Figures concerning expenditures for nondepreciable physical resources are directly carried forward to (and summarized on) the organizational procurement budget. Figures concerning expenditures for capital assets may be directly carried forward to the procurement budget, or they may first be carried forward to and reformatted on an organizational capital expenditures budget.

10. **Organizational/corporate capital expenditures budget** — This budget indicates planned expenditures for purchases of capital assets (physical assets that can be capitalized and then depreciated over some number of years). (Since nondepreciable equipment is generally "expensed" or "written off" during the period in which purchased, it is not normally included.) Such a budget is often used by larger organizations having many high-cost capital projects to pull together and reformat capital expenditure figures (from the organizational facilities/equipment budget) before (a) carrying them forward to the procurement budget, and (b) reflecting them in the balance sheet budget. However, since the organizational facilities/equipment budget already contains these figures, a capital expenditures budget is not always used as an intermediate step —especially by smaller organizations. (On the other hand, some organizations use this budget instead of a facilities/equipment budget.)

    A. Format — Expenditures for capital facilities and equipment can be categorized in a number of ways. The most common categories are: (a) buildings (e.g., plants and office buildings); (b) machinery and equipment (e.g., maunufacturing machines and equipment and major office furniture and equipment); and (c) land (which is not depreciated under accepted accounting principles).

    B. Inputs:

        1. Organizational facilities/equipment goals
        2. the initial organizational capital expenditures budget
        3. figures pertaining to expenditures for capital assets — from the organizational facilities/equipment budget, or perhaps directly from departments' facilities/equipment budgets

    C. Outputs — Capital expenditures figures are carried forward to the organizational procurement budget (if an organization has one). They are always carried forward (usually in a summarized format) to the cash budget (Exhibit X, page B-48), and are always reflected in the fixed assets section of the organizational balance sheet budget (Exhibit Y, page B-52).

11. **Organizational procurement budget** — This resources management budget consolidates projected purchases of physical resources and various outside services onto one document. It is often used to pull together and reformat cost/purchase figures so that they can more easily be converted into expenditure figures and entered onto the organizational cash budget. (When resources are purchased, funds are obligated, but payments may not be made until later—at which time they become cash disbursements.) However, since these figures can be derived from certain budgets already mentioned above, many organizations do not prepare this intermediate budget—unless it is to be used by the purchasing department to schedule and manage its purchases.

    A. Format — These common categories of purchases are often broken down into more specific groups: (a) consumables (such as direct materials, factory/shop supplies, and office supplies); (b) contracted services; (c) minor/nondepreciable equipment (such as tools and low-cost office machines/equipment); (d) capital facilities and equipment; and (e) land.

    B. Inputs:

        1. the initial organizational procurement budget (if any)
        2. the cash disbursements (for materials) budget (Exhibit R, page B-28)
        3. the organizational facilities/equipment budget (for minor/nondepreciable equipment)
        4. the organizational capital expenditures budget (for capital facilities/equipment)
        5. units' various expense budgets
        6. the organizational G&A budget (for office consumables, outside services, etc.)

    C. Outputs — As mentioned above, purchasing involves obligating funds. Cash disbursements only occur when actual payments are made for purchases. Consequently, before any figures from this budget can be entered into the cash disbursements section of the organizational cash budget, they must be converted into a payment schedule such as the one illustrated in Exhibit S on page B-28.

12. **Organizational/corporate cash budget** — Most organizations are concerned about maintaining enough cash on hand to meet payrolls and pay bills. Therefore, their finance departments construct a cash budget for the primary purpose of managing financial resources.

Exhibit X: XYZ Company Cash Budget (2011)

Row #		1st Qrtr	2nd Qrtr	3rd Qrtr	4th Qrtr	Year Total
1	**Beginning cash balance**	50,000	48,688	53,348	57,268	
	Cash receipts					
2	Collections from sales	6,935,950	7,145,990	7,202,250	7,338,050	28,622,240
3	Other income	21,500	21,500	21,500	21,500	86,000
4 (+)	**Total cash receipts**	**6,957,450**	**7,167,490**	**7,223,750**	**7,359,550**	**28,708,240**
5 (=)	**Total cash available**	7,007,450	7,216,178	7,277,098	7,416,818	
	Cash disbursements					
6	Total payroll[1]	2,863,800	2,915,500	2,920,800	2,976,150	11,676,250
7	Total employment taxes[1]	315,018	320,705	321,288	327,376	1,284,387
	"Consumables"/fees/charges					
	Factory:					
8	Direct materials[2]	2,117,722	2,226,000	2,256,150	2,289,150	8,889,022
9	Supplies/utilities/etc.[1]	121,622	125,375	125,792	129,754	502,543
	Marketing/sales:					
10	Advertising/promotion[1]	410,000	220,000	220,000	250,000	1,100,000
11	Selling (non-payroll)[1]	290,000	287,000	302,000	356,000	1,235,000
12	Warehousing contracts[1]	80,000	80,000	80,000	80,000	320,000
13	Employee benefits[1]	275,000	281,000	281,600	287,300	1,125,500
14	Rentals/leases[1]	10,000	10,000	10,000	10,000	40,000
15	Office supplies/equipment[1]	21,000	21,000	21,000	21,000	84,000
16	Bus. travel/entertainment[1]	20,000	20,000	20,000	20,000	80,000
17	Services/utilities/fees[1]	53,000	29,000	28,000	38,000	148,000
18	Other/miscellaneous[1]	21,000	21,000	21,000	21,000	84,000
19	Capital expenditures[1]	140,000				140,000
20	Income (and other) taxes[3]	350,000	150,000	150,000	91,000	741,000
21	Stock dividends[4]			187,500	218,750	406,250
22(-)	**Total cash disbursements**	**7,088,762**	**6,706,580**	**6,945,130**	**7,115,480**	**27,855,952**
23(=)	**Cash surplus/(deficit)**	(80,712)	509,598	331,968	301,338	
	Financing					
24	New stock issues					
25	Long-term notes[5]					
26	Long-term principal repayment[5]	(125,000)	(125,000)	(125,000)	(125,000)	(500,000)
27	Long-term interest payment[6]	(75,000)	(71,250)	(67,500)	(63,750)	(277,500)
28	Short-term notes[5]	330,000				330,000
29	Short-term principal repayment[5]		(250,000)	(80,000)		(330,000)
30	Short-term interest payment[6]		(10,000)	(2,200)		(12,200)
31(+)	**Total financing**	**130,000**	**(456,250)**	**(274,700)**	**(188,750)**	**(789,700)**
	Non-cash liquid assets					
32(-)	Purch. of marketable securities				(60,000)	(60,000)
33(+)	Sale of marketable securities					
34(=)	**Ending cash balance**[7]	**49,288**	**53,348**	**57,268**	**52,588**	

Copyright © 1989, 1995, 2012 by R.D. Cecil & Co.

Assumptions in Exhibit X:

1. Disbursements for annotated items are made during each quarter for that quarter.
2. Payment for this item is made as follows: 50% during the quarter; 50% during the next quarter.
3. The estimated income tax for a quarter is paid during the quarter; additional income tax for the previous tax year is paid during the first quarter of budgetary year.
4. Dividends are paid during any quarter.
5. Funds are borrowed at the beginning of a quarter, and then, as finances permit, are repaid during that quarter or a later quarter. Funds are borrowed/repaid in multiples of $1,000.
6. Interest (at 11.5%) is calculated and paid when principal is repaid.
7. Company attempts to maintain an end-of-quarter minimum cash balance of about $50,000.

The cash budget is used to "manage cash"—i.e., (a) avoid cash shortages, (b) avoid idle cash surpluses, (c) forecast the amount and timing of funds that must be borrowed, and (d) determine whether borrowing should be long-term or short-term.

A. Format — The example in Exhibit X on the next page is one possible format. Here again, even though the sections and items are relatively common, they apply only to XYZ Company's approach for budgeting cash. Other organizations may deal with these items differently. Also, many organizations construct a monthly rather than quarterly cash budget when budgeting for the coming year. (During the fiscal year, organizations that generate considerable amounts of cash often manage their cash using weekly and even daily cash budgets.)

   The beginning cash balance figure indicates the amount of cash (on deposit in a bank) at the beginning of each month/quarter (or at the end of each previous month/quarter).

   The cash receipts section indicates monthly/quarterly figures for the following items: cash collections from customers; and cash receipts from other sources.

   The total cash available figure for each month/quarter is calculated by adding the month's/quarter's total cash receipts to the month's/quarter's beginning cash balance.

   The cash disbursements section indicates each month's/quarter's cash outlays for various items—such as payroll, employment taxes, numerous (itemized) consumables/fees/charges, capital expenditures (for capital assets), income (and other) taxes, and stock dividends.

   Cash disbursements can be itemized and categorized in many different ways. The items, however, normally correspond to items/accounts used in supporting budgets.

   All types of disbursements are included. Note, however, that depreciation, amortization, and bad debt items are not included—because the expenses associated with these items do not involve cash disbursements.

   In Exhibit X (as in all organizations' cash disbursements sections), the monthly/quarterly figure for any particular disbursement item is usually the monthly/quarterly organization-wide total for that item. [An exception in Exhibit X is the separation of factory utilities (Row 9) and office utilities (Row 17).]

   Figures for most items come from the procurement budget and various expense budgets. Since these figures are expense or purchase figures rather than payment figures, they must be converted into payment schedules (such as the one in Exhibit S) before they can be entered in the cash disbursements section. [In Exhibit X, however, we have made the convenient but unrealistic assumption that all expenses except materials expenses are paid for during the quarter in

which they are incurred. In other words, we have assumed that, except for materials, the company operates on a "cash basis" rather than an "accrual basis." (Actually, an organization must perform all of its accounting procedures on only one of these bases.) Most organizations operate on an accrual basis.]

The cash surplus or (deficit) item indicates whether there will be a cash surplus or a cash deficiency (from operations) at the end of a month/quarter. Each month's/quarter's figure is calculated by subtracting total cash disbursements from total cash available.

The financing requirements section is one of two sections containing items that an organization can use to maintain some desired level of cash (ending cash balance). For example: If an organization is generating a cash surplus (and will therefore have an undesirably high ending cash balance), it might choose to use the surplus cash to reduce existing debt. On the other hand, if it is generating a cash deficit (and will therefore have an undesirably low ending cash balance), it might choose to maintain the desired ending cash balance by either (a) selling stock, and/or (b) borrowing funds (thereby perhaps incurring additional debt). Figures in this section indicate (a) the amount and timing of borrowed funds and/or stock sales (cash inflows), and (b) the amount and timing of principal repayments and interest payments on debt (cash outflows). Each month's/quarter's (net) total financing figure is calculated by adding the positive figures (for cash inflows/receipts) and the negative figures (for cash outflows/disbursements).

The non-cash liquid assets section is the second section containing items that an organization can use for the same basic purpose. For example: If an organization is generating a cash deficit, and if it has marketable securities, it might choose to sell securities (rather than increase debt or sell stock) in order to obtain additional cash and maintain the desired ending cash balance. On the other hand, if it is generating a cash surplus, it might choose to buy securities (rather than repay debt or buy back stock) in order to reduce the surplus and maintain the desired ending cash balance. (Organizations also purchase securities with surplus cash in order to set aside reserves for capital projects, contingencies, and stock buy-backs.) The purchase of securities constitutes a negative figure (a cash outflow/disbursement), whereas the sale of securities constitutes a positive figure (a cash inflow/receipt).

The ending cash balance figure for each month/quarter is calculated by adding the total financing figure, the purchase of securities figure, and the sale of securities figure to the cash surplus/(deficit) figure.

B. Inputs — Some figures (in Exhibit W) can be derived from departmental (original source) budgets, some from intermediate budgets (such as the procurement budget), and some from organizational budgets (such as the organizational operating budget).

Note: Figures for **starred (*) expense items** and several other items would be adjusted for "payment lag" if an organization were not paying obligations immediately and were operating on the accrual basis.

1. Organizational financial goals concerning cash balances and debt
2. the initial organizational cash budget
3. *Beginning cash balance* (**Row 1**) — for the 1st quarter, from the ending cash balance on the previous year's balance sheet (See the 2010 figure in Row 2 of Exhibit Y on page B-52.); for the 2nd, 3rd, and 4th quarters, the previous quarter's ending cash balance figure
4. *Collections from sales* (**Row 2**) — from total cash collections on the cash collections budget (Row 12, Exhibit O)
5. *Other income* (**Row 3**) — from other income budgets (such as the portfolio/investments budget), adjusted if necessary for lags in actual receipts
6. *Total payroll** for all personnel (**Row 6**) — from the total for each quarter at the bottom of the payroll budget — or the sum of: Rows 12, 13, 20, and 21 of the marketing/sales dept. operating budget (Ex. P); Row 5 of the direct labor budget (Ex. T); Rows 5 and 10 of the factory overhead budget (Ex. U); and Rows 13 and 14 of the G&A section of the

organizational operating budget (Ex. W)

7. *Employment taxes** (**Row 7**) **—** from employment tax calculations on the payroll budget **—** or the sum of: Row 22 of the marketing/sales dept. operating budget (Ex. P); the tax portion of Row 6 of the factory overhead budget (Ex. U); and Row 15 of the organizational operating budget (Ex. W)
8. *(Factory) direct materials* (**Row 8**) **—** from total disbursements for materials on the schedule of cash disbursements for materials (Row 14, Exhibit S)
9. *(Factory) supplies/utilities/etc.** (**Row 9**) **—** calculated by multiplying units produced during the quarter times the supplies/utilities/etc. portion (not the employment taxes and employee benefits portions) of the quarterly figures for other variable factory overhead costs/unit in Row 6 of Ex. U) **—** or by subtracting the quarterly figures for employment taxes and employee benefits from the quarterly total variable overhead cost figures in Row 8 of Exhibit U
10. *(Marketing/sales) advertising/promotion** (**Row 10**) **—** from the total advertising/promotion expenses item on the marketing/sales dept. operating budget (Row 11, Exhibit P)
11. *(Marketing/sales) selling (non-payroll)** (**Row 11**) **—** the sum of Rows 14, 15, 16, 17, and 18 on the marketing dept. operating budget (Exhibit P)
12. *(Marketing/sales) warehousing contracts** (**Row 12**) **—** from Row 26 of the marketing/sales dept. operating budget (Exhibit P)
13. *Employee benefits** (**Row 13**) **—** the sum of: Row 23 in the marketing/sales dept. operating budget (Ex. P); the employee benefits portion of total other variable overhead costs in Row 13 of the factory overhead budget (Ex. P); and Row 16 of the organizational operating budget (Exhibit W)
14. *Rentals/leases** (factory, sales offices, corporate offices) (**Row 14**) **—** the sum of: Row 12 of the factory overhead budget (Ex. U); any marketing/sales dept. facilities rentals/leases (none shown in Exhibit P); and Row 17 in the G&A section of the organizational operating budget (Exhibit W)
15. *Office supplies/equipment** (**Row 15**) **—** the sum of: Row 24 in the marketing/sales dept. operating budget (Ex. P); Row 11 in the factory overhead budget (Ex. U); and Row 18 in the G&A section of the organizational operating budget (Exhibit W)
16. *Business travel/entertainment** (**Row 16**) **—** from Row 19 of the G&A section of the organizational operating budget (Ex. W) [Selling travel/entertainment is already in Row 11 above.]
17. *Services/utilities/fees** (**Row 17**) **—** the sum of: Row 25 of the marketing/sales dept. operating budget (Ex. P); and Rows 20, 21, and 22 in the G&A section of the organizational operating budget (Ex. W)
18. *Other/miscellaneous** (**Row 18**) **—** the sum of: Row 27 of the marketing/sales dept. operating budget (Ex. P); Row 14 of the factory overhead budget (Ex. U); and Row 27 in the G&A section of the organizational operating budget (Exhibit W)
19. *Capital expenditures** (**Row 19**) **—** from the quarterly totals for capital asset purchases on the organizational procurement budget (or facilities/equipment budget)
20. *Income (and other) taxes* (**Row 20**) **—** for the 1st quarter, additional income and property taxes owed (by XYZ Company) at the end of the previous year (see Rows 22 and 23 in the 2000 column of Ex. Y on page B-52), plus the 1st quarter of 2011 estimated corporate income tax (from Row 31 of the organizational operating budget, Ex. W); for the 2nd, 3rd, and 4th quarters, the company's 2010 estimated income taxes for those quarters (from Row 31 of the organizational operating budget, Ex. W)
21. *Stock dividends* (**Row 21**) **—** from corporate projections of dividend payouts
22. *New stock issues* (**Row 24**) **—** from corporate projections of stock sales/issues
23. *Borrowed funds* (**Rows 25 and 28**) **—** determined based on funding requirements
24. *Principal repayments* (**Rows 26 and 29**) **—** determined based on pay-back ability
25. *Interest payments* (**Rows 27 and 30**) **—** calculated for long- and short-term debt when a repayment is made **—** by (1) multiplying the principal balance immediately prior to the repayment (e.g., $330,000 on Row 28, 1st quarter) by the annual percentage rate (e.g., 1.5%); (2) dividing the resulting figure (e.g.,

Exhibit Y: XYZ Company Pro Forma Balance Sheet (Assets/Liabilities Budget) (2011)

Row #	(All figures in 000s of dollars)	2010 Year-End	2011 Budget	2011 Actual
	ASSETS			
	Current Assets			
1	Petty cash	5	5	
2	Cash in bank	50	53	
3	Marketable securities	200	260	
4	Accounts receivable	1,979	2,091	
5	Inventory	696	763	
6	Prepaid expenses			
7	Deferred charges			
8	Allowance for doubtful accounts	300	300	
9 (+)	**Total current assets**	3,230	3,472	
	Fixed Assets (Property, Plant, & Equip't)			
10	Buildings	3,225	3,225	
11	(-) Accumulated depreciation	(405)	(520)	
12	(=) Net value - buildings	2,820	2,705	
13	Machinery/equipment	1,701	1,841	
14	(-) Accumulated depreciation	(757)	(1,000)	
15	(=) Net value - equipment	944	841	
16	Land	500	500	
17(+)	**Total net property/plant/equipment**	4,264	4,046	
18(+)	**Other/Intangible Assets (Net)**	120	100	
19(=)	**Total Assets**	7,614	7,618	
	LIABILITIES AND STOCKHOLDERS' EQUITY			
	Current Liabilities			
20	Accounts payable	1,017	1,158	
21	Employment taxes payable (federal/state)			
22	Corporate income taxes payable (federal/state)	186		
23	Other taxes payable	14	14	
24	Notes/loans/bonds payable (current)	500	500	
25	Accrued expenses			
26	Deferred income			
27(+)	**Total current liabilities**	1,717	1,672	
28(+)	**Notes/Loans/Bonds Payable (Non-Current)**	2,000	1,500	
29(=)	**Total Liabilities**	3,717	3,172	
	Stockholders' Equity			
30	Common stock	500	500	
31	Retained earnings	3,397	3,946	
32(+)	**Total stockholders' equity**	3,897	4,446	
33(=)	**Total Liabilities and Stockholders' Equity**	7,614	7,618	

$37,950) by the number of days in the year (365 days); (3) multiplying that resulting figure (e.g., $103.97) by the number of days from the date the debt was incurred to the date of repayment (e.g., 96 days). [These computations yield exactly $9,981 — a few dollars less than the rounded $10,000 figure shown on Row 30 in the 2nd quarter.]

26. *Purchase/sale of non-cash liquid assets* such as marketable securities (**Rows 32 and 33**) — determined based on cash balances, funding requirements, and other financial considerations

C. Outputs:

1. The year-end cash balance figure (4th quarter of Row 34) is carried forward to the cash in bank item in the organizational balance sheet budget (Row 2 of Exhibit Y on page B-52).
2. Figures in Rows 25 and 26 (long-term debt and long-term debt repayments), in Rows 28 and 29 (short-term debt and short-term debt repayments), and in Rows 32 and 33 (purchases and sales of securities) usually affect organizational balance sheet figures (in Rows 24, 28, and 3 of Exhibit Y on page B-52).
3. If the cash budget indicates that an organization will need to borrow more (or less) funds and pay more (or less) Interest than projected on the organization's initial cash budget, then the interest expense figure on the operating budget (Row 26, Ex. W) will require adjustment — which usually requires additional adjustments in the operating and cash budgets.

12. **Organizational/corporate balance sheet budget** (pro forma balance sheet) — This accounting budget indicates projected end-of-year figures for asset and liability accounts. It reflects how the coming year's operations can be expected to increase, decrease, or leave unchanged the assets and liabilities figures as of the end of the previous year.

Assets can be considered an organization's "financial plusses." They are either held or owned by an organization — subject to the payment of its financial obligations.

Liabilities are an organization's financial obligations—its "financial minuses." They are suppliers', financial institutions', government entities', stockholders', and others' claims against an organization's assets.

Assets, liabilities, and their relationships reflect an organization's "financial condition."

The balance sheet budget serves several important functions. It (a) enables management to calculate various financial ratios; (b) highlights resources and obligations that will affect operations; (c) helps identify unfavorable financial conditions requiring resolution; and (d) provides a final check on the accuracy of many other budgets.

A. Format and definitions — Common asset and liability accounts are shown in Exhibit Y. Total assets must equal total liabilities plus stockholders' equity. (Although we have not shown figures for several accounts, we have included them because they are very often shown on a balance sheet.)

Current assets are listed at the top:

a. *Petty cash* — a convenient "on-hand cash fund" that is maintained in order to pay for small purchases/charges requiring an immediate out-of-pocket cash payment (such as postage, inexpensive office supplies, and similar incidentals)
b. *Cash in bank* — cash that is on deposit in a bank account
c. *Marketable securities* — stocks, bonds, and other marketable debt instruments of other organizations or institutions
d. *Accounts receivable* — money that is owed to an organization by its customers/clients/patients/etc. (and is payable within the next twelve months)
e. *Inventory* — A manufacturing enterprise usually has several types of inventories: a materials inventory; a work-in-process or semi-finished goods inventory; and a finished goods inventory. The value of each inventory may be shown separately, or, as is often the case, the total value of all inventories may be shown.

f. *Prepaid expenses* — advance payments made during the current period for expenses that will actually be incurred in the following period (e.g., a prepaid insurance premium)
g. *Deferred charges* — expenditures made during the current period for benefits that will actually be realized (and expensed) over some number of periods (e.g., a legal fee associated with organizational restructuring)
h. *Allowance for doubtful accounts* — the fund that is set aside as a reserve to cover uncollectible bills (bad debts)

Fixed assets (property, plant, and equipment) are normally listed (in groups) below current assets. Usually, the (total) purchase value of each group of items is shown first, then the (total) accumulated depreciation on those items (as of the end of the period), and then the (total) net value (which is the purchase value minus accumulated depreciation). However, some organizations show only the net value of each group of items.

a. *Buildings* — owned plant(s), warehouse(s), and office building(s) (which are all capitalized and depreciated) [Since 1987, new structures are depreciated over 31.5 years.]

b. *Machinery and equipment* — those owned manufacturing, materials handling, and office machines/equipment that have been capitalized and are being depreciated [Since 1987, new machinery and equipment is depreciated over 7 years.]

c. *Land* — a capital asset that is not depreciated

> Some industries indicate either depletion or obsolescence, which are treated in the same manner as depreciation. For example: Mining and oil companies use depletion to write off the original purchase cost of natural resources. Airlines use obsolescence to write off the value lost as an aircraft becomes obsolete (even though it has not yet worn out and is still useful).

Other (intangible) assets: Intangible assets — such as patents, trademarks, copyrights, licenses, franchises, and goodwill (a value placed on a business's reputation with customers, and, thus, its future earning ability) — are normally shown below fixed assets. Very often, the total net value of these assets is shown, but the net value of each type of asset may be shown separately. The net value is the original cost or acquisition value minus the (accumulated) amortization as of the end of the period. [Intangible assets are "amortized" rather than "depreciated." They are amortized (written off or expensed) over a period of 60 months.]

Liability and equity accounts are shown either (a) below asset accounts, or (b) on a separate page behind, or to the right of, asset accounts.

Current liabilities top the listings of liability and equity accounts:

a. *Accounts payable* — money that is owed to (claims of or obligations to) business creditors (such as suppliers, vendors, and service providers) at the end of the period
b. *Federal/state employment taxes payable* — e.g., corporate/employee FICA and withholding taxes that are owed to government entities at the end of the year, but will actually be paid early in the following year
c. *Federal/state corporate income taxes payable* — Corporate income taxes that are owed to government entities at the end of the year, but will actually be paid early in the following year
d. *Other taxes payable* — e.g., property and/or business franchise taxes that are owed to government entities at the end of the year, but will actually be paid early in the following year
e. *Notes/loans/bonds payable (current)* — organizational debts for which principal repayments are due during the next twelve months (of the next budgetary year)
f. *Accrued expenses* — can include salaries/wages, certain employee benefits, interest, and other expenses that have been charged against the current period's (year's) profits— even though payments will actually be made during the following period (year)
g. *Deferred income* — income that has been received but not yet earned (such as advance payments or deposits made by customers prior to the delivery of a product or service)

Notes/loans/bonds payable (non-current) — organizational debts for which principal repayments are due after the next twelve months (after the end of the next budgetary year)

Equity accounts are normally shown below Liability Accounts:

a. *Common stock* — outstanding (sold/issued) shares of equity that entitle stockholders to (a) (partial) business ownership, (b) voting rights, and (c) (uncertain) dividends
b. *Preferred stock* — the outstanding (sold or issued) shares of equity that entitle shareholders to (a) (partial) business ownership (but not voting rights), and (b) a fixed dividend (which must be paid prior to common stock dividends) (XYZ Company has not sold or issued this type of stock.)
c. *Capital surplus* — results when stock is sold at a higher price per share than its par or stated value (XYZ Company has not sold stock.)
d. *Retained earnings* — (accumulated) net profits that have not been distributed to stockholders through dividend payments

B. Inputs (to Exhibit Y) include:

1. the initial Organizational Balance Sheet Budget
2. *Petty cash* and *cash in bank* (**Rows 1 & 2**) — from the year-end cash balance on the cash budget [here, the 4th quarter ending cash balance of $53,000 on Row 34 of Ex. X], perhaps broken down into these two separate accounts
3. *Marketable securities* (**Row 3**) — from the projected year-end total market value of securities listed in the portfolio/investments budget [See Rows 33 and 34 of the cash budget and Row 3 of the previous period's year-end balance sheet.]
4. *Accounts receivable* (**Row 4**) — from projections based on the sales and cash collections budgets [here, 29% of the 4th quarter's net sales revenue on Row 6 of Ex. N]
5. *Inventory* (**Row 5**) — In Exhibit Y, inventories of materials and finished goods have been totalled. (XYZ Company has no work-in-process at the end of the year.) The materials inventory figure can be calculated by multiplying the desired ending inventory of each material input [here, the 4th quarter figure in Row 4 of the direct materials budget, Ex. R] by the projected per unit price [here, $2/pound on Row 7 of Ex. R], and then totalling the resulting figures for all materials. The work-in-process inventory figure can be calculated based on the cost accounting department's records (if the organization has an adequate cost accounting system). The finished goods inventory figure can be calculated by multiplying the desired ending inventory figure for each product [here, the 4th quarter figure in Row 2 of the production budget, Ex. Q] by the projected per unit production cost of each product [here, $60/unit for materials (Row 2 times Row 7 in the direct materials budget, Ex. R), plus $45/unit for direct labor (Row 2 times Row 4 in the direct labor budget, Ex. T), plus $8/unit for indirect labor (Row 2 times Row 4 in the factory overhead budget, Ex. U), plus $16/unit for other variable overhead costs (Row 6 in the factory overhead budget), plus $6.44/unit for fixed factory overhead cost (Row 53 in the cost of goods sold budget, Ex. V)], and then totalling the resulting figures for all products.
6. *Prepaid expenses* (**Row 6**) — from purchasing dept. and/or accounting department projections [Organizations often have and project such expenses.]
7. *Deferred charges* (**Row 7**) — from purchasing department and/or accounting department projections [Organizations sometimes project and have such charges.]
8. *Allowance for doubtful accounts* (**Row 8**) — this figure is usually set by the finance/accounting dept., and, in general, is only occasionally changed (with IRS approval)
9. *Fixed assets* (**Rows 10, 13, and 16**) — from the purchase/acquisition cost figures in the fixed/capital assets section of the organization's procurement budget, and from the organization's inventory/listing of (existing) fixed/capital assets (The cost/value of any new asset purchased/acquired during the budgetary year is added to the previous period's year-end figure for the group of assets in which that asset has been included.)

10. *Accumulated depreciation on fixed assets* (**Rows 11 & 14**) **—** from the annual and accumulated depreciation figures in the organization's (projected) inventory/listing of fixed/capital assets (For each asset owned at the beginning of the budgetary year, that asset's annual depreciation is added to its accumulated depreciation as of the end of the previous year. For each new asset purchased/ acquired during the budgetary year, that asset's annual depreciation is divided by 12 months, and the resulting figure is then multiplied by the number of months between the asset's purchase/acquisition and the end of the budgetary year. Finally, for buildings and then for machinery/equipment, the year-end accumulated depreciation figures for all assets in the group are totalled, and the resulting sum is entered on the balance sheet budget.)
11. *Other (intangible) assets (net)* (**Row 18**) **—** calculated by subtracting each asset's accumulated amortization from its original purchase/acquisition cost, and then totalling the resulting net values for all such assets
12. *Accounts payable* (**Row 20**) **—** projected primarily based on figures in payment schedules for materials and many other (expense) items procured from external sources (suppliers, vendors, service providers) [XYZ Company has only materials payables, because we have assumed that it pays all other bills during the period in which those obligations are incurred. Here, materials payables can be calculated by multiplying 4th quarter purchases of materials (Row 8, Exhibit R) by 50%.]
13. *Federal/state employment taxes payable* (**Row 21**) **—** projected based on employment tax payment schedule figures (which are based on employment tax figures in the organization's payroll budget) [No such payables are shown for XYZ Company, because we have assumed that it pays these taxes during the period in which it becomes liable for them. However, organizations normally schedule such payables.]
14. *Federal/state income taxes payable* (**Row 22**) **—** projected based on the payment schedule for income taxes (which is based on tax figures contained in Row 31 of the operating budget, Ex. W) [During 2011, we have assumed that, after paying its estimated income taxes during the year, XYZ will have projected income and income taxes accurately and will owe no more income tax.]
15. *Other taxes payable* (**Row 23**) **—** projected based on payment schedules for other taxes [Here, we have assumed that XYZ Company has chosen to schedule payment of some amount of property tax for early in the following year. Many organizations do so.]
16. *Notes/loans/bonds payable (current)* (**Row 24**) **—** debt repayment figures for the twelve months following the end of the budgetary period are primarily based on figures in (a) the financing section of the cash budget, (b) the organization's near-term borrowing plans, and (c) the finance department's projected debt repayment schedules
17. *Accrued expenses* (**Row 25**) **—** projected primarily based on payment schedule figures for expense items such as wages and salaries, certain employee benefits, and interest [Here, we have assumed that XYZ Company has already paid for these expenses as they have been incurred. However, organizations normally project (and have) accrued expenses/ liabilities.]
18. *Deferred income* (**Row 26**) **—** projected primarily based on sales department estimates [Many if not most organizations rarely project or have deferred income.]
19. *Notes/loans/bonds payable (non-current)* (**Row 28**) **—** projected figures for (unrepaid) debts as of the beginning of the 13th month after the end of the budgetary period are primarily based on the organization's future borrowing plans and the finance department's projected debt repayment schedules
20. *Common stock* (**Row 30**) **—** calculated by multiplying the par or stated value per share by the projected number of outstanding common shares at the end of the budgetary period (taking into account projected stock transactions since the end of the previous period, which may have been shown on the cash budget) [At the end of 2011, XYZ Company will have 250,000 outstanding common shares at a par value of $2/share.]

21. *Retained earnings* (**Row 31**) **—** calculated as follows: Retained earnings on the previous year's ending balance sheet [see the 2010 column in Row 31 of Ex. Y], plus the budgetary year's net profit [Row 32 on the operating budget in Ex. W], minus any projected dividend payments during the budgetary year [see Row 21 of the cash budget in Ex. X, and Row 33 of the operating budget in Ex. V]

C. Outputs **—** The balance sheet budget provides figures that can be used to calculate financial indicators such as these: current ratio; acid test (quick ratio); inventory turnover rate; working capital turnover rate; net sales to net working capital; debt/equity ratio; coverage ratio; asset turnover; retained earnings to net income; return on investment (ROI); return on equity (earnings per share); price/earnings ratio; and dividend ratio. One or more of these and other indicators may identify a need to revise certain (goals/plans and) budgets.

Concluding Notes to This Section

* Budgeted figures are seldom 100% accurate. Actual figures for revenue and expenses, which can be determined within months after the end of the budgetary year, are very often either higher or lower than projected. As a consequence, the resulting "variances" always alter important items such as the production cost per unit, the year's profit or (loss), and the values of various assets and liabilities. This fact of life, however, should never deter managers from budgeting (planning) the utilization of organizational resources as effectively as possible.

* Since many supporting budgets provide inputs to the operating [profit/(loss)] budget, the cash budget, and the balance sheet budget, and since the eventual construction of these three budgets can indicate a need to revise certain (goals/plans and) budgets, more and more organizations are utilizing computerized financial models to (a) test the profit/(loss), cash, and balance sheet implications of figures being entered on supporting budgets, and (b) modify (goals/plans and) budgets before they reach top management for review, final approval, and summarization/consolidation.

* Our descriptions of budgets and their preparation have been been very generalized. First, all organizations do not use all the budgets described above. In fact, many small organizations formally prepare just an operating budget and a balance sheet budget. Second, while the budget formats illustrated here are fairly common, they are not necessarily the formats used by particular organizations engaged in particular types of industries or endeavors. Third, since different organizations use different budgets prepared in different formats, figures found on certain budgets may be taken from or based on figures in different source budgets.

* Although we have provided examples of annual budgets broken down into four quarters and totalled for the year, many organizations prepare annual budgets broken down into twelve months and totalled for the year. Some leave them broken down into months, and some convert the monthly figures into quarterly figures.

* In general, lower organizational levels use shorter-term weekly and monthly budgets to help manage their operations and control their utilization of resources (on a weekly and monthly basis). They tend to use monthly and quarterly budget formats to report their operating results to higher organizational levels. Higher organizational levels tend to use monthly, quarterly, and semi-annual budgets to review results as the year progresses. They also tend to use quarterly, semi-annual, and annual budget formats to report results to stockholders and governmental/regulatory entities.

* Table 4 on the next page summarizes (a) various types of responsibility centers, and (b) which organizational levels and units tend to have which types of budgets.

Other Types of Budgets (for Dealing with Budgetary Pitfalls and Problems)

Common Budgetary Pitfalls and Problems

Budgetary processes should be both effective and efficient. When they are not, the resulting budgets tend to be inefficient and/or hide inefficiencies.

Table 4: Summary of Types of Responsibility Centers and Their Budgets

ORGANIZATIONAL ENTITY / LEVEL	Types of Responsibility Centers				Types of Budgets													
								Expense										
	Rev	Exp	Prf	Inv	Prog/ Proj	Sales & Rev	Prodn	Sell'g & Adv	Prod & COGS	Other/ G&A	Facil Equip	Captl Expnd	Hum Res	Pay-roll	Pro-cure	Oper-ating	Cash	Balnc Sheet
Organization	R*	E*	P*	I*	P/P*	S/R*	P*	S/A*	P/COGS*	G&A*	F/E*	CE*	HR*	PR*	P*	Op*	Csh*	BS*
Profit Center Div.	R	E	P	I	P/P	S/R	[P]	S/A	P/COGS	G&A	F/E	CE	HR	PR	P	Op	Csh	BS
Marketing Dept.	R#	E#	[P]	[I]	P/P#	S/R#		S/A#	[COGS]	Othr#	F/E		HR#			Op#		
Advertising Dept.		E			P/P			A		Othr	F/E		HR			(Exp)		
Sales Dept.	R	E			P/P	S/R		S	[COGS]	Othr	F/E		HR			(Exp)		
Market Res. Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Dist. Centers	[R]	E			P/P	[S/R]		[S/A]	[COGS]	Othr	F/E		HR			[O]		
Service Centers	[R]				P/P	[S/R]		[S/A]	[COGS]	Othr	F/E		HR			[O]		
R&D Department		E#			P/P#					Othr	F/E#		HR#			(Exp)#		
Production Dept.	[R]	E#	[P]	[I]	P/P#	[S/R]	P#		P/COGS#	Othr#	F/E#		HR#			O#		
Engineering Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Purchasing Dept.		E			P/P					Othr	F/E		HR		P@	(Exp)		
Manufactur'g Dept.		E			P/P		P			Othr	F/E		HR			(Exp)		
Qual. Assur. Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Maintenance Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Shipping Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Human Res. Dept.		E#			P/P#					Othr#	F/E#		HR#			(Exp)		
Employment Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Compensation Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Labor Rela. Dept.		E			P/P					Othr	F/E		HR			(Exp)		
Training Dept.		E			P/P					Othr	F/E		HR					
Finance Dept.	[R]	E	[P]	[I]	P/P	[S/R]				Othr	F/E	CE@				[O]	C@	BS@
Accounting Dept.		E			P/P					Othr	F/E					(Exp)		
Payroll Dept.		E			P/P					Othr	F/E			PR@		(Exp)		
Data Proc. Dept.		E			P/P					Othr	F/E					(Exp)		
Investments Dept.	[R]	E	[P]	[I]	P/P	[S/R]				Othr	F/E					(Exp)	C@	

[ ] = may be or may have
@ = administers for entire organization
* = consolidated for all units & organization
# = consolidated for sub-units

1. Many organizations have a budgeting process, but not a preceding goal-setting and planning process. As a result, budgets are not based on well-conceived goals and plans. In such organizations, the "planning process" simply consists of formulating budgets by (a) increasing (or decreasing) the last year's budgets to take account of changes in the costs of unusual projects, and/or (b) increasing the prior year's budgets by a certain percentage (perhaps by the projected percentage increases in sales and in costs).

2. Even when budgets are based on organizational and unit goals and plans, many organizations place much greater emphasis on budgets. As a result, individuals tend to lose sight of organizational and unit goals.

3. Many organizations "overbudget." This can mean (a) utilizing an overly complete and detailed budgetary process that is cumbersome, virtually meaningless, and expensive to conduct; and/or (b) spelling out major and even minor budgetary items in such great detail that managers' ability to manage their units effectively is undermined.

4. In many organizations, budgets are approved by top levels of management based only on inputs provided by financial/planning (staff) personnel. Middle- and lower-level managers have little if any input. This nonparticipative approach (a) does not take advantage of the knowledge and expertise available at middle and lower levels; (b) often fails to win commitment to budgets at middle and lower levels; (c) often breeds resentment and antagonism toward the planning staff and top management; and (d) creates conflicts within and between organizational levels.

5. In many organizations, the budgetary process is more political (and adversarial) than rational. Where this is the case, managers tend to use power, influence, manipulation, and covert information systems in order to obtain the largest possible piece of the budgetary pie. [Their motives for doing so are generally self-serving: e.g., to (a) increase their own performance and success; (b) impress superiors, colleagues, and subordinates; and/or (c) increase their status and reputation.] As a result, limited resources are not allocated based on a rational determination as to where they will best help the organization to achieve its goals. In addition, working relationships among managers become more competitive and uncooperative, thereby increasing conflicts within and between organizational levels.

6. When many managers formulate their budgets for the coming year, they simply increase the previous year's budget by a certain amount or percentage—regardless of whether or not the additional funds/resources are warranted by the coming year's goals and plans.

7. When many managers prepare their budget requests, they pad them with unecessary "requirements" so that, even if their requests are pared and their approved allocations are less than requested, they will still receive the resources that they actually wanted.

8. When many managers approach the end of a year and find that they will come out under budget (will not need to use all the resources allocated to them for the year), they will still use up or spend the excess resources/funds in order to justify requesting at least the same budget allocation for the coming year.

9. In many organizations, budgets are treated as though they were "cut in stone"—rather than being treated as flexible guidelines. This deprives managers of the flexibility to adapt their utilization of resources to changing circumstances.

"Remedial" Types of Budgets

1. **Variable budgets** — These flexible budgets are designed to vary with increases or decreases in certain chosen factors (such as sales or production volume). They deal with variable cost items such as direct labor, materials, supplies, variable factory burden, and variable administrative and selling costs. (Fixed costs, on the other hand, remain the same regardless of changes in volume or work load.)

   It is appropriate to use variable budgets under these circumstances: (a) a particular unit's work load, resources requirements, and performance are greatly affected by factors controlled by other units; (b) the unit's work load and resources requirements are likely to vary significantly from one short-term period to another, and, therefore, cannot be estimated accurately for a longer period of time; and (c) costs should be analyzed regularly in order to update cost estimates and to manage resources effectively.

These are the main steps involved in formulating variable budgets:

1. Choose some unit of measure that reflects the volume of work.
2. Identify the cost items that will be affected by variations in volume.
3. Analyze the relationships between volume and costs (through statistical studies and engineering analyses).
4. Make a determination (or devise a formula that describes) how the specified costs should vary with volume.

2. **Alternative budgets** — Here, different budgets are formulated to be used under different possible sets of circumstances. For example: Some organizations formulate budgets for several possible levels of operation —e.g., high, medium, and low. All alternatives are approved in advance. Then, at specified times, managers review the situation and decide which budget is the most appropriate to use for planning and control purposes.

   Alternative budgets are similar to variable budgets in that they both provide a certain degree of flexibility. However, alternative budgets are limited to a few alternatives, while variable budgets are "infinitely flexible."

3. **Supplemental budgets** — Using this type of approach, an organization initially establishes basic or minimum budgets for the entire year. Then, each month, additional or supplementary budgets are established based on the level of operations recently forecasted for that month.

   This approach enables managers to be flexible and to exercise close control over their operations. However, it does not encourage them to forecast more accurately or to analyze their operating costs more thoroughly as they plan for the coming year.

4. **Contingency budgets** — Organizations sometimes establish special budgets and funds that will enable them to deal with contingencies (possible problems and opportunities). These budgets/funds are then maintained just in case they may be needed.

   A general contingency budget/fund can be established to deal with unforeseen problems and opportunities in general. (Even the best laid plans cannot account for all the situations that can arise.)

   A specific contingency budget/fund can be established to deal with a particular situation that has been anticipated—and (a) could possibly occur (even though its occurence might not seem very probable), (b) would require significant resources if it were to occur, and, therefore, (c) warrants establishing a special budget/fund "just in case" it does occur.

   Although variable, alternative, supplemental, and contingency budgets provide budgetary cushions or budgetary insurance that may be appropriate or even necessary under certain conditions, they should be used judiciously. Some managers have come to depend on using them as "budgetary crutches" to compensate for inadequate or ineffective analysis, forecasting, and planning.

5. **Zero-base budgets** — Zero-base budgeting (ZBB) is an approach for dealing with overstated budget requests and inefficient budgets. It was first developed by the U.S. Department of Agriculture in the mid-1960s. In 1969, the concept was modified and further developed at Texas Instruments. Since then, it has been adopted by various federal and state agencies, a number of nonprofit organizations, and a few businesses.

   ZBB requires that managers "budget from scratch" rather than simply adjusting their last period's budgets to account for projected changes in operations or operating levels. Although it encompasses performing in-depth analyses of proposed programs/projects and their initial activity and funding levels, it emphasizes completely reevaluating and rejustifying all existing programs/projects, products or product lines, and functions/activities. In effect, a manager must annually justify not only the areas just mentioned, but also his or her unit's worth and very existence.

   Basically, the ZBB approach involves identifying the benefits of a program/product/function at incremental levels of funded activity—starting at a base point of "0." ("Level of activity" can refer to production volume, sales volume, number of products in a product line, workload, and so forth.) In other words, managers identify any benefits resulting from a "0" level of funding (no funds for acquiring capital resources or for covering expenses, and, therefore, no activity), and

also identify the benefits resulting from incrementally higher levels of funded activity. By using ZBB procedures, managers can determine what the benefits will be when, for example, an existing program/product/function (a) is eliminated, (b) has incrementally less spent on it than is currently being spent, and (c) has incrementally more spent on it than is currently being spent.

ZBB involves these basic steps:

1. Specify the objectives of the program/project, product, or function.
2. Identify and evaluate alternative means for achieving the objectives.
3. For each alternative, . . .
    a. Identify all activities involved.
    b. Develop appropriate workload and performance measurement parameters.
    c. Identify the appropriate range and number of incrementally higher levels of activity to be analyzed, starting at a base of "0 funding/activity."
    d. For each incrementally higher level of activity, starting at a base of "0," . . .
        1. Identify all the inputs/resources required to operate at that level of activity.
        2. Cost the inputs required to operate at that level (determine the funding required for that level).
        3. Identify the benefits achieved/derived at that level.
    e. Determine at which level of activity the benefit/funding conditions are most favorable or desirable (by evaluating and comparing the benefits and funding requirements at each incrementally higher level of activity—from base "0").
4. Determine which alternative is the best (by comparing the most favorable/desirable level of activity associated with each alternative).

ZBB has several <u>benefits and advantages</u>:

a. It helps identify budgetary inefficiencies.
b. It requires managers' involvement and participa tion in the budgetary process.
c. It requires managers to measure and analyze work load, performance, benefits, and costs.
d. It helps identify priorities among programs by helping to identify (incremental) benefits and costs of programs relative to other programs.

ZBB also has some <u>disadvantages</u>:

a. Being highly program-oriented, it is most often used in nonprofit and government organizations. It is much less often used in manufacturing enterprises, where costs at various levels of production can be broken down and analyzed quite effectively through the use of standard costing systems.
b. It tends to require considerable time and paperwork, both during the annual budgeting process and throughout the budgetary year. Therefore, it may be advisable to perform a ZBB process once every few years instead of every year.